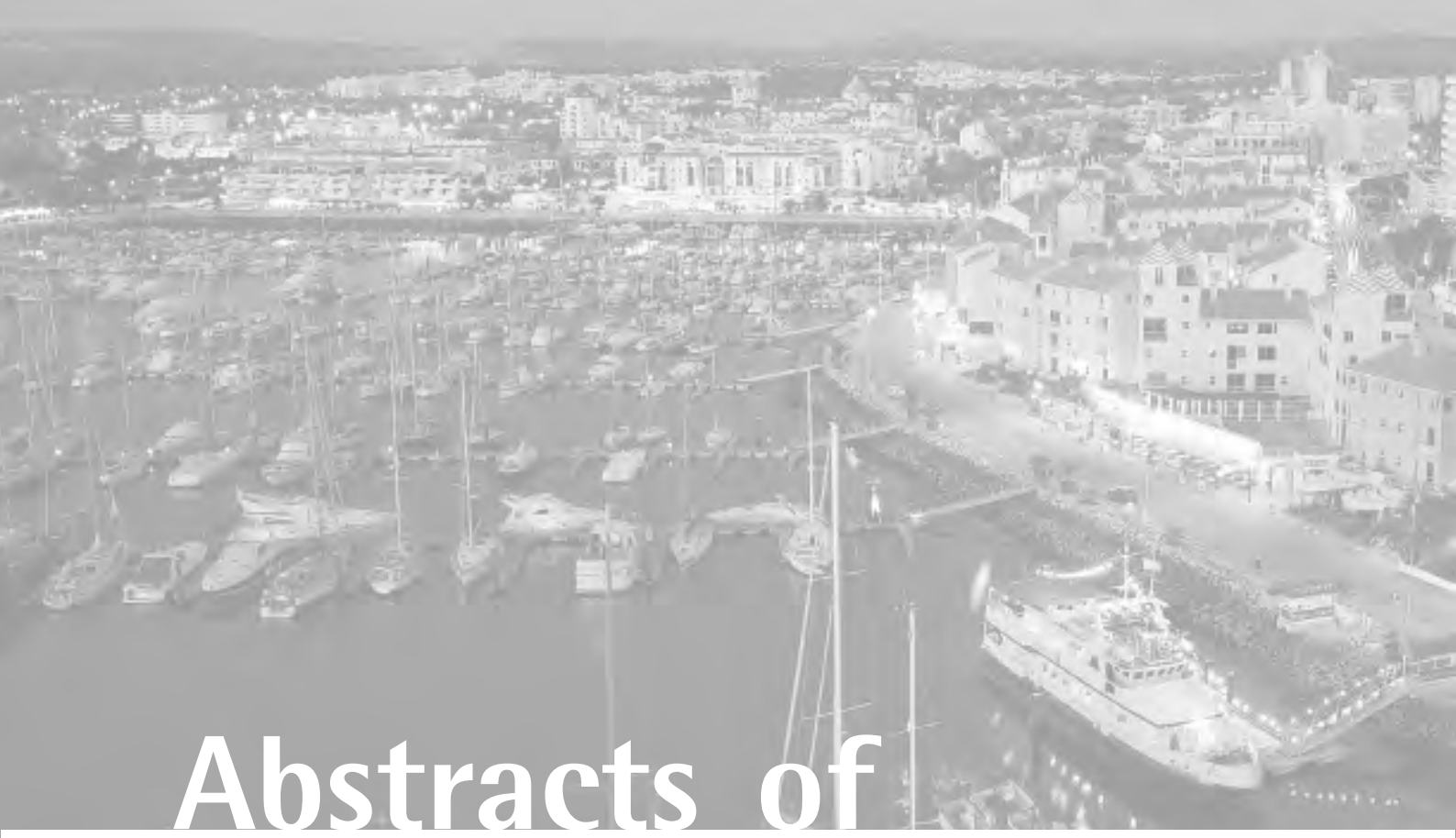

Abstracts of Lectures

KN001

THE ROLE OF OUTCOME MEASURES IN CLINICAL RESEARCH IN REHABILITATION MEDICINE

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There are many dimensions in terms of which an outcome measure can be examined. Reliability is the extent to which a measurement is reproducible and internally consistent. Validity concerns the extent to which an instrument measures what it is intended to measure. Responsiveness is the ability of an instrument to detect changes or differences over time that are clinically or individually meaningful. Besides the above psychometric characteristics, the investigator has primarily to consider in selecting a measure its appropriateness, i. e. how well the content of the instrument matches the purposes and questions which the specific clinical trial is intended to address. Furthermore, there are important pragmatic issues: a) acceptability, i. e. a test's ability to minimise avoidable distress to patients and to obtain high response rates (speed of completion, difficulty or unacceptability, cultural applicability etc); b) feasibility, i. e. the impact of the outcome measure upon staff and researchers in collecting, processing and analysing information; c) interpretability, i. e. the measure's ability to give results which are meaningful and easily understood by others; d) cross-cultural adaptation (to maximise the attainment of semantic, idiomatic, experiential and conceptual equivalence between the source and target measures). In addition, precision refers to the exactness of a measure (response categories, numerical values, distribution of items over true range, ceiling and floor effects, dimensionality, etc.). Finally, for a in-depth validation of their basic measurement properties (internal construct validity, scaling properties, precision, etc.), outcome measures are increasingly being investigated in practical health care applications to see how their data fit to Rasch models. Rasch analysis has two main applications in Rehabilitation Medicine: i) the building or refinement and validation of scales, including cross-cultural validation, and analysis of the stability of item hierarchy across classes of observations (i. e. the "differential item functioning"); ii) the testing of quality of data (individual records, patterns of caring procedures within a facility, etc.).

KN002

ISPRM: THE PHYSIATRIST ROLE AS AN ADMINISTRATOR OF A REHABILITATION MEDICINE PROGRAM

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Physicians who are specialists in Physical Medicine and Rehabilitation are in a unique position many times of administratively running a rehabilitation program in a hospital or other organizational setting. The skills of an administrator are not necessarily the same skills as a physician. There are a number of limited venues where physicians who are interested in administration can learn what it takes to be director of rehabilitation. The utilization of a set of Business Practices can assist physiatrists who find themselves in the role of administrator. This program will present how the Commission of Accreditation of Rehabilitation Facilities (CARF) standards are utilized as tools to improve on both the administrative as well as clinical management of rehabilitation medicine organizations.

OBJECTIVES

Physiatrists attending this session will be able at its conclusion to: 1. Identify key business practices that will affect the success of their rehabilitation programs. 2. Understand the necessity of quality frameworks to improve performance. 3. Identify key activities of a rehabilitation administrator. 4. Develop techniques necessary that will help them serve as a rehabilitation administrator. SPEAKERS: Martin Grabois, M. D., John Melvin, M. D. and Chris MacDonell

KN003

NOVEL METHODS TO INCREASE CONTRALESIONAL AWARENESS IN STROKE PATIENTS SUFFERING FROM SPATIAL NEGLECT

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INTRODUCTION

Proper functioning of the cerebral attentional systems is crucial for categorical behavior, which is based on selection of the most important and task relevant external and stored information. Unilateral spatial neglect (USN) is a common consequence of stroke in which reduced processing efficiency in contralesional space is manifested most prominently as an impairment of posterior attentional systems.

AIM

To present experimental data showing the importance of using computerized RT paradigms for longitudinal assessment of natural and treatment-induced recovery, and the efficacy of selected theory-bound treatments.

METHODS

Motor and cognitive impairments, disability level, and participation after discharge, were compared in first-event stroke patients with and without spatial neglect. Studies were conducted to evaluate the effectiveness of several treatment strategies, among them: ipsilesional eye-patching with and without concomitant visual search exercises; electrical stimulation of the contralesional hand, phasic alerting, and prism adaptation.

RESULTS

USN was found to be a major disabling condition, increasing significantly the rate of severe sensory-motor as well as cognitive impairments, necessitating longer rehabilitation periods, and showing poorer FIM scores on admission, discharge, and after one year of follow-up. None of the tested treatment strategies seems to be effective for all USN patients. Moreover, some treatments might be beneficial only after a given point in the recovery phase, showing deleterious effects if applied earlier.

CONCLUSION

It is not entirely clear why the presence of USN is connected with such a poor outcome. There is reason to believe that the mechanisms underlying USN play a causative role in aggravation of other sensory, motor and cognitive dysfunctions. This conjecture underlines the importance of newer effective means for the assessment and treatment of neglect-related phenomena. The data shown attests for the added value of dynamic computerized tests relative to standard paper-and-pencil tests of neglect. At the present stage of our understanding of USN, the selection of a treatment strategy for a given USN patient is dictated essentially by trial and error. However, one can select the appropriate method from a large variety of effective treatments.

KN004

NOVEL APROCHES TO ENHANCE FUNCTIONAL MOTOR RECOVERY IN STROKE

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Every year a significant number of survivors with stroke are left with residual disabilities. Recovery from stroke is based on the brain's capacity for reorganization and adaptation. Spontaneous recovery happens naturally, with a highly variable extent, due to resolution of edema or reperfusion of the ischemic penumbra. After the initial couple weeks, brain continually adapts to environmental stimuli by means of neuronal plasticity. There is good evidence that cortical representation of body parts is continuously modulated in response to activity, behavior and skill acquisition. An effective rehabilitation plan capitalizes on this potential and encourages movement patterns closely linked to normal performance. If the patient is unable to initiate movement after stroke, effective strategies may include direct facilitation of movement using extereoceptive, proprioceptive and reflex stimulation techniques, superimposed upon the patients' own attempts to control their body movements. Constraint-induced movement therapy, bilateral training, motor imagery, use of a mirror, mental practice, electromyographic biofeedback, robot-assisted therapy, functional vibratory stimulation, and neuromuscular electrical stimulation techniques are used for muscle re-education and facilitation to re-establish voluntary control of body positions and movements after stroke. The goal of stroke rehabilitation program is to regain the ability to function and return to a productive and satisfying life. Rehabilitation can achieve these goals by either restoring body functions, by compensation for any body dysfunction, or by combination of both. Tailor-made physiotherapy is an important part of rehabilitation after stroke. Recent evidence has shown that early, intensive and task-related training improves motor recovery and cortical reorganization after stroke. During task-specific training, there should be individualization of the training goals (i. e., tasks must be at the appropriate level for a patient's ability) and progression of the training goals over time (i. e., as the patient improves, tasks should become progressively more challenging). It is well established that the environmental context of the training influences performance of the task. Therefore, to retrain functional adaptation, it is important to provide environmental challenges that are similar to those that the patient will experience on return to his/her community. Task-oriented training approach mainly focus on practice of identifiable functional tasks, rather than movement patterns or underlying impairments. Impairment-focused programs failed to generate functional improvements whereas therapies administered functional training improved activity levels. Cognitive involvement, functional specificity and the progressive complexity of tasks being trained are the key variables of motor training and cortical reorganization.

KN005

PARTIAL BODY WEIGHT SUPPORT IN CHRONIC HAEMIPLEGIC PATIENTS

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Partial Body weight support is one of the most studied methods in the management of the chronic hemiplegics' patient. M. Visintin, H. Barbeau and RG Lovely using spinal mammalian cord animals and a treadmill1-3 proved the possibility of walking recovery. Edward Taub4-7 created the learned nonuse theory, proving that the nonuse of the affected limbs, leading to a lesser cortical representation of the affected limbs, was responsible for some of the deleterious motor and functional prognosis. E. Taub and S. Wolf 8-14 with constrained induced movement therapy, showed the importance of repetition and of the use of the affected limbs in the Rehabilitation management. Several new techniques appeared afterwards, namely the use of a treadmill and of partial body weight support for walking training15-17. Stefan Hesse proved the advantage of his Gait trainer, because of the need of only one therapist. At the same time Hesse and others published several papers showing the efficacy and efficiency

of his device on the hemiplegics ambulatory and non-ambulatory patient18-21. The authors show their experience with the Gait Trainer and their last research in chronic haemiplegics. The aim of this randomized controlled trial, uni-blinded, was to compare the efficacy and efficiency of gait trainer with conventional treatment on the gait treatment of chronic vascular hemiplegic's patient. 40 chronic post-stroke hemiplegics' patients were submitted to a research where the patients were randomized into two groups. The control group (CG) did, during five weeks, 5 times a week, the classical, Bobath method, rehabilitation management. The Experimental group (EG), during the same time and frequency, used the Gait Trainer. The treatment time in each session was the same for both groups. The assessment tools were: Motricity Index; Toulouse Motor Scale; modified Ashworth Spasticity Scale; Berg Balance Scale; Rivermead Motor Assessment Score; Fugl-Meyer Stroke Scale; Functional Ambulation Category; Barthel Index; 10 meters walking test and gait cycle parameters; Time up and Go test; 6 minutes walking distance test; Step test. EG and CG did these assessment before treatment (T0), just after treatment (T1), and follow-up three months later (T2). A self-questionnaire, asking about the satisfaction and efficiency with the treatment was done to all the patients at T1 and T2. Both group of chronic hemiplegic's patient improved after treatment. Partial body weight walking training using Gait trainer is a better rehabilitation treatment than the Bobath method showing more improvement after treatment with maintenance or even progresses after 3 months.

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KN006

CONSTRAINT INDUCED MOVEMENT THERAPY IN NEUROLOGICAL REHABILITATION: EXPERIENCE IN TURKEY

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Basic research on brain plasticity and motor learning provided a new perspective to neurological rehabilitation and triggered the development of new training based treatment approaches. Constraint induced movement therapy (CI therapy) is a new, promising neurorehabilitation technique in this context. CI therapy is an intensive therapy technique that has been developed to improve the use of the more affected upper extremity of stroke patients with mild to moderate hemiplegic involvement. The guiding theory behind CI therapy is that impairment of upper extremity motor functioning is exacerbated by learned non-use and that this in turn leads to a loss of cortical representation

of the upper limb. Thus two primary possible mechanisms proposed for the effects of CI therapy are: 1. Overcoming learned non-use, 2. Inducing use-dependent cortical reorganization. A number of transcranial magnetic stimulation and neuroimaging studies have suggested that intensive massed training component of CI therapy results in a use dependent cortical reorganization that increases the area of cortex involved in the innervation of movement of the more affected upper extremity. The effectiveness of CI therapy for improving upper extremity motor functioning in stroke patients with hemiplegic involvement was validated by numerous studies. Results from CI therapy research thus far suggest that CI therapy influences quality, quantity, speed, and skill of movement and importantly increases the amount of use of the more involved upper extremity in the real life situation. Although CI therapy has considerable support in the current literature some problems and realities may overshadow its' widespread application. Concerns about patient adherence both to restraining and training schedule of therapy, patient safety, transportation of the patient, reimbursement, practical and effective implementation of CI therapy in the current practice settings, adaptation of the therapy to different cultures and countries with different health care policies are some important issues that need to be addressed.

KN007

A RANDOMISED CONTROLLED TRIAL TO COMPARE ISOKINETIC AND CONVENTIONAL MUSCULAR STRENGTHENING IN POSTSTROKE PATIENTS

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CHU de Toulouse – Toulouse [3] University

The muscular strengthening of post-stroke chronic hemiplegic patient improves muscular force and functional independence without increasing spasticity. The aim of this paper was to compare a conventional technique of muscular strengthening with the isokinetic strengthening. 36 post-stroke hemiplegic patients were included (6 to 30 months after stroke) in this randomised controlled trial. The quadriceps and the hamstring muscles of the affected limb were trained. The control group (n=15) was trained using an isokinetic dynamometer (Cybex® 6000)(eccentric mode). After a 5-minute warm-up, subjects performed three sets of 10 repetitions of maximal effort at the three speeds (60, 90 and 120°/sec). The PRE group (n=21) was trained by the conventional isotonic technique (DeLorme and Watkins); subjects performed series of ten maximal repetitions; the session began with 2 sub-maximal series at 2/5 and 3/5 of the Maximal Resistance (MR), then subjects were asked to make as many series as they could at 4/5 of the MR. The two programs made of 3 weekly 40 minutes meetings ended with stretching were carried out over 6 weeks. The patients were assessed before strengthening (T1), at the end of it (T2) and one month (T3) after the end of strengthening in order to observe the benefits and their durability. Quadriceps and hamstring peak torque, Ashworth scale for same muscles and Biceps Brachialis, motricity index, Toulouse Motor Scale, gait (locometer), Barthel Index and FIM were assessed. At T1, there is no significant difference between the two groups. At T2, the quadriceps peak torque increased significantly only in Reference group. According to clinical motor scales (Motricity index, Toulouse Motor Scale) in both groups and to Maximal Resistance in PRE group, paretic lower limb strength increase. Also in both groups, progresses observed with motor scales, gait analyser and four steps climbing are maintained, and even increased from T2 to T3. The Barthel index is significantly improved at T3. Spasticity didn't increase and decreased for Reference group at T3 compared to T1. There was no significant difference between the two different strengthening methods as both techniques increased the power of the muscles of the knee, the functional independence without increasing spasticity. The isokinetic technique is more expensive and poorly accessible. With the lack of differences between the two protocols, the conventional method of PRE, cheap and ecol

KN008

CELULAR THERAPIES IN MEDULAR REGENERATION: REHABILITATION ADVANCES IN DIAGNOSIS AND THERAPEUTICS

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INTRODUCTION

Olfactory mucosa is an accessible source of stem-like-progenitor and olfactory ensheathing cells for neural repair. Spinal Cord Transplanting Olfactory Mucosa Autografs (SCITOMA) in traumatic spinal cord (SCI) were done in Hospital Egas Moniz, previous in animal experimentes and later in human pilot trials. Some patients were selected in Physical and Rehabilitation Medicine Department, Hospital S. Sebastião (FEIRA).

AIMS: To determine feasibility; safety; spinal cord autograf progression; voluntary, autonomic, functional gains; side effects, diagnosis/therapeutics challenges in SCI Rehabilitation (FEIRA-trial).

METHODS: From November 2003-July 2006, SCITOMA was conducted in 6 FEIRA Patients, 21-32 years of age, lesions ranging 1,5-5 cm, at C6-D12 vertebral levels, ASIA A, 2 – 9 years post-injury. Intensive rehabilitation, before and after surgery, included: *Diagnosis – Medular, Functional Cerebral and Muscular MRIs, EMG, Evokated Potencials, Cardiorespiratory and Autonomic Tests, Urodynamics, Gut Dynamic Studies, ASIA Score,

ORL evaluations, Quality of Life Questionary. *Therapeutics – Effort Reconditioning, Electrical Stimulation, Neurological Proprioceptive Technics, Reinforcement Programs, Electrical cycling, Gait Training, Ocupational Therapy, Aquatic Reabilitation, Vesical-Gut Rehabilitation.

RESULTS

3-24 months follow-up presents: *moderate to complete lesion site filling in Medular MRI *muscular trophism increase *progressive potencials, voluntary activity in neurophysiological tests *pre-motor, motor, sensitive activations in Cerebral Functional MIR *increase in cardiorespiratory-autonomic functions *positive anal sphincter EMG; * vesical-sphincter dissinergy; *non inibated detrusor contraccions. *vesical replection-colon/anal sensations *superficial-deep sensibility, postural trunk, orthostatic control increase *functional hand *gait with orthothesis (mix locomottor pattern) *ASIA Score increase *normal olfaction within 3 months. *no significant adverse events (unless neurological pain episodes) DISCUSSION and

CONCLUSION

SCITOMA is feasible, safe, potentially beneficial. Measurable diagnosis, intensive therapeutics and long-term patient monitoring are obliged to determine delayed side effects and further improvements, concerning spinal cord regeneration, muscular reconditioning and functional gains.

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KN009

MANAGEMENT OF SPASTICITY IN SCI

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Spasticity is a common complication among spinal cord injured (SCI) patients. It is more common in cervical and upper thoracic SCI patients than lower thoracic and lumbosacral SCI patients(1,2). Although its incidence is reported very high, not all the patients with spasticity need treatment. When to treat spasticity? It is a challenging process that requires an integrated team. If spasticity interferes patient life with function and activities of daily living, causes pain, contracture and pressure sores than treatment should be planned. One should always keep in mind that there may be many noxious stimulus that interfere with spasticity. Before initiating treatment, evaluation and if present, elimination of potential nociceptive sources must be done. Stretching is a mainstay of treatment of spasticity and should be applied twice a day or more (3). Standing activities such as tilt table or standing frame provide prolonged stretch to joints and may reduce spasticity. Serial casting and orthotics may also attribute to reduce spasticity by achieving continous stretching and proper positioning(4). Posture and positioning of the patients are also very important for tone reduction. Maintaining adequate lumbar lordosis and avoiding sacral sitting are important. The most commonly used modalities in spasticity management are cold and electrical stimulation(1,3). Cold must be applied for minimum 20 minutes in order to lower intramuscular temperature. The benefits of cold are elemination of clonus, reduction in tendon reflexes(5). Electrical stimulation has short term effects when used in spasticity management. Transcutaneous electrical nerve stimulation, spinal cord electrical stimulation, rectal probe electrostimulation (when used for fertility studies) are the techniques have been shown effective in spasticity management in SCI(1,6-9). Despite their side affects and potential adverse effects, pharmacologic treatment are often the mainstay of therapy because of their benefit. The time since onset, severity, location, patient age, prognosis, and cognitive status, concurrent medical problems and financial issues are important when deciding pharma-

cologic treatment of spasticity. Baclofen and tizanidine are the two oral agents believed to be most effective in SCI related spasticity(10). Baclofen reduces flexor spasms, increasing range of motion and decreases spastic hypertonia. Tizanidine has been shown to be effective in many studies(1). A combination of tizanidine and baclofen may be used together in order to get additive effect(11). Benzodiazepines are also very effective. Diazepam is more effective in decreasing reflexes and treating painful spasm than pure tone(12). Clonazepam, tetrazepam and ketazolam are the other bezodiazepines that have been evaluated. Clonazepam is found to be very effective in nighttime spasm and sleep disturbace(6). Ketazolam has a long half life and may be less sedating(12). Dantrolene and clonidine are secondary agents in SCI population. Dantrolene has less sedating effect than baclofen or diazepam and may be benefical in person with concurrent SCI and traumatic brain injury. Clonidine can be delivered either orally, via transdermal patch, or intrathecally(13). Cyproheptadine reduces clonus and spontaneous spasms in SCI patients(14) where gabapentin has antispastic effect at higher doses(>1800mg/day)(15). 4-Aminopyridine, a potassium channel blocking agent has shown to have antispastic effect in incomplete SCI patients(16). Cannabis, although not approved for clinical use, has antispastic effect in SCI-related spasticity(17). When oral medication are not well tolerated or are ineffective than intrathechal medications come into consideration. Baclofen and clonidin are the drugs that can be delivered intrathecally for spasticity management(18). Local injection of chemodenervation agents can be used to treat focal spasticity with a minumum of systemic effect. In SCI, as spasticity is generally diffuse, such focal treatments may be of less effective than in other etiologies of spasticity. However in incomplete SCI patients or for upper limb spasticity, use of local teatment may show more functional improvement than systemic treatment and also may decrease the dosage needs of oral or intrathecal medication. Phenol, alcohol and recently botulinum toxin are the agents used for local treatment of spasticity(19). Selective sugical interventions such as dorsal rhizotomy and dorsal root entry zone procedure are most commonly used for the treatment of pain, and may not decrease spasticity(1,2). Conclusion As a conclusion one should first establish the functional impact of the spasticity on SCI patient and identify the functional goal to be achieved by treatment. If the goal is not achieved or treatment is not well tolerated than change the treatment choice or eliminate any aggravating factors. Education of the patient and the family is also very important. Patients and carer must be aware of the noxious stimuli that can worsen their spasticity.

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KN010

SCIM & SCI-ARMI: FUNCTIONAL MEASURES AND A NEW APPROACH TO ASSESSING REHABILITATION EFFECTIVENESS

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The Spinal Cord Independence Measure (SCIM) and the Spinal Cord ability Realization Measurement Index (SCI-ARMI) were developed to improve functional assessment following spinal cord lesions (SCL) and the evaluation of rehabilitation effectiveness. *** SCIM is the only comprehensive disability measure designed specifically for patients with SCL. It is sensitive to SCL-specific changes in function, and it differs from other ability scales in its underlying concept. SCIM evaluates capacity to perform daily tasks independently not only by its effect on

the burden of care but also on patient well-being. Independence or "activity" achieved with costlier, heavier, or more challenging assistive devices, or with medical shortcomings, is considered to be of lower value and is scored lower. SCIM includes 19 ADL tasks relevant for SCL and grouped in subscales. It rates achievement according to its importance to SCL patients. It is also user friendly: it defines scoring criteria on the evaluation sheet. Score range is 0-100. The third SCIM version proved reliable and valid in a multi-center international study, and was recommended in the ASIA-ISCoS 2006 meeting for clinical use as well as for research, including cross-cultural clinical trials. *** Rehabilitation effectiveness is often evaluated by functional measures, but function may be affected by other factors besides rehabilitation. One such major factor is the neurological recovery after SCL. Therefore, repeated assessments by scales such as SCIM or FIM, which measure changes in function, cannot determine whether a change is a consequence of rehabilitation or of neurological recovery. To circumvent this problem, we introduced a new approach to rehabilitation effectiveness evaluation, assessing functional changes after eliminating the effect of impairment. This approach was implemented by combining SCIM scores with ASIA motor scores to create SCI-ARMI. The new instrument assesses function in patients with SCL as a percentage of the maximal expected SCIM score at any given neurological deficit. A change in SCI-ARMI score cannot be related to neurological recovery, and it reflects mainly the effect of rehabilitation. SCI-ARMI is designed to assess rehabilitation effectiveness retrospectively (monitoring it after rehabilitation) or prospectively (predicting it before rehabilitation). This approach can be adopted in other fields of rehabilitation as well.

KN011

SOCIAL AND ECONOMIC ASPECTS OF OSTEOPOROSIS

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Osteoporosis (OP) gains importance in socioeconomic and quality of life aspects with the growing of world population and it attract attentions with high mortality fractures, significant functional limitation and social adaptation failure. In 1991 WHO classified osteoporosis as a major social disease, on the basis of its high prevalence, expected to rise in the future, its physical and psychological consequences and its economical costs for both the society and the individual. Osteoporotic fractures result in a significant economic lost. In Europe, the total cost of caring for patients in just first year after a hip fracture is estimated at nearly 15 billion Euros (European commission, 1998). As the elderly population increases, the cost will rise to an estimated 34. 2 billion Euros for all osteoporotic fractures by 2006. Although the most important and prominent symptom is fracture, the presence of chronic pain, increase in kyphosis, loss of height, abdominal distention, muscle cramps at nights contribute deterioration in quality of life. Taking into consideration of the other problems associated with OP beside fractures will reveal the real costs of OP. OP and the fractures are major source of morbidity. The sequale of osteoporotic hip fractures are often severe and may be devastating. They result permanent disability in over 30% of patients, and up to 20% die within one year of their fracture and also lead functional impairment and institutionalization. Vertebral fractures are major cause for back pain, and loss of height in the elderly and also associated with increased morbidity. In many studies it has been proved that OP leads decrease in quality of life. Today we know that only a small percentage of millions of OP patients can be diagnosed and be treated. Although OP is accepted to be an important disease by physicians and patients, especially women are not aware of their personal risks and don't obey precautions to prevent their bones. Despite the increase in the knowledge level of women, most of them don't think that they are natural members of this society and they tend to neglect their personal risks. Even though there is increase in consciousness of societies, one of third postmenopausal women confess that they would not be affected from possible OP in contrast to expectations. The patients may have unexpected approaches to the disease even though they understand the disease adequately. For instance, in patient support meetings among patients of osteoporosis, anthropologists, psychiatrists, and physiatrists, who have enough knowledge about OP also wondered if people could understand their disease from their physical appearance. In struggle with OP, all efforts are focused to diagnose and treatment of the disease and sometimes it leads physicians to miss the social and humanitarian aspects of OP and there are increasing numbers of studies pointing these subjects. The physicians' interest is turning into "WHO" they are treating instead of "WHAT" they are treating. In other words the priority of treatment of statement is replaced with treatment of patient. It is certain that this humanitarian approach will increase the compliance of the patient. One other reality is the all information about disease that we have collected up to now is the upper part of the iceberg. There are lots of things to do and OP should be researched in all aspects.

KN012

FALLS AND FRACTURES IN OSTEOPOROSIS

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All types of fracture are associated with morbidity and disability. Excess mortality is associated with vertebral and hip fractures. Morbidity after vertebral fractures: Back pain,disability; Loss of hight; Deformity; Reduced pulmonary function; Diminished quality of life. Morbidity one year after hip fractures: 20% of patients die,40% are unable to walk independently,80% are unable to carry out at least one ADL independently.

Pathogenesis of fractures: Osteoporotic fractures are correlated to low bone mass and falls. Poor bone quality is correlated to fractures. Circumstances for falls: Accident or environment related 37%,Postural hypotension 5%,Dizziness,vertigo 8%,Disturbance of balance or gait 12%,Other (sedative drugs, poor eyesight)18%,etc. Risk of falling is increased with age, higher in males than in females and very high in patients with pevious strokes. Estimate of risk for falling, relative to those without it: 1. Gait and balance disorders; (cannot stand on 1 leg: 3; previous stroke: 5) 2. Immobility and weakness; (cannot stand up from chair: 5) 3. Mental impairment; (cognitive impairment: 5; medication: 2) 4. Visal impairment; (over 20% impairment: 2) 5. History of falls; (> 4 falls in last year: 4). Factors related to the risk of fracturing a hip in a person who falls: Direction of fall (landing on hip: 30; sideways fall: 6); Impact of fall(landing on a hard surface: 3); Failure of protective reflexes (not landing on hand: 3; not grabbing at objects: 2); Local shock absorbers (being thin: 2,5; hip protectors: 0. 4). Risk factors for falling are related to: Environmental risk factors; Medical risk factors; Neuromuskular risk factors; Fear of falling. A high level of physical activity decreases risk of hip fracture. There was found a correlation between sitting hours and hip fracture risk. Another correlation was demonstrated between back muscle strength and vertebral fracture risk. Prevention of falls: Balance, coordination and posture exercises. Strengthening of forearm,leg and quadri ceps,abdominal,back and low back muscles. Education of safe activities of daily living decreases risk of falling by 40%. Evaluation of balance problems and involved risk of fracture are recommended for all patients over age of 40 who suffered a fracture. There is evidence of the effect of vitamin D on fall prevention, preservation of muscle strength and balance. Environmental factors should be minimalized. Hip pads are recommendable for elderly with high risk of fracture.

KN013

REHABILITATION ON OSTEOPOROSIS

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It has been shown that physical activity is an important factor influencing peak bone mass, and that a lack of physical activity is a major risk factor to develop osteoporosis (Lissens MA et al., Journal of Bone and Mineral Research, 2001, S395; Lissens MA et al., Osteoporosis International, 2002, Vol. 13, Suppl 1, S87). This has also its implications in rehabilitation medicine. In primary rehabilitation the aim is prevention of osteoporosis, whereas in secondary rehabilitation treatment of osteoporosis is the main goal. In tertiary rehabilitation emphasis is put on treatment of fractures and complications. An osteoporosis rehabilitation program is designed to meet the needs of the individual patient, depending upon the type and severity of the disease. Active involvement of the patient and family is vital to the success of the program. The goal of rehabilitation is to help the patient to return to the highest level of function and independence possible, while improving the overall quality of life, physically, emotionally, and socially. The focus of rehabilitation is to decrease pain, help prevent fractures, and minimize further bone loss. In order to help reach these goals, osteoporosis rehabilitation programs may include the following: – exercise programs and conditioning to increase weight bearing and physical fitness – pain management techniques – nutritional counseling to improve calcium and vitamin D intake and decrease caffeine and alcohol intake – use of assistive devices to improve safety at home – patient and family education, especially prevention of falls Many skilled professionals are part of the osteoporosis rehabilitation team, including any/all of the following: orthopaedist/orthopaedic surgeon, physiatrist, internist, rehabilitation nurse, dietitian, physical therapist, occupational therapist, social worker, psychologist/psychiatrist, recreational therapist, vocational therapist. Physical activity can help osteoporosis patients gain improvement in muscle strength and cardiovascular endurance, and can reduce functional decline. Benefits from regular exercise include improved bone health, both psychological and cognitive benefits, and enhanced quality of life. Adequate intakes of calcium, vitamin D and protein are also an important component of the rehabilitation program. Dietary calcium and vitamin D have been shown to help preserve bone mass and bone strength and should be considered in all elderly patients and in those patients suspected to be vitamin D deficient. Osteoporosis is a disease with psychosocial consequences, and therefore, a psychological assessment is integral to the rehabilitation of any patient with osteoporosis and is an important component of the overall management plan. An effective pain management plan following fractures through a variety of physical, pharmacological and behavioural techniques should be implemented with close monitoring of side effects, such as disorientation or sedation that may lead to falls. (Bonner FJ, Sinaki M, et al. Osteoporos Int 2003; 14 (Suppl 2) S1- S 22)

KN014

NEW ASPECTS OF FUNCTIONAL ASSESSMENT OF BALANCE AND MOBILITY IN PEOPLE WITH LOWER LIMB AMPUTATION

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FONDAZIONE SALVATORE MAUGERI

To accurately monitor the impact of rehabilitation interventions on mobility in people with lower-limb amputation (LLA), there is increasing interest in psychome-

trically sound outcome measures of mobility and the objective assessment of long term mobility. Outcome measures of mobility-Rasch analysis of the Locomotor Capabilities Index (LCI) and Mobility Section of the Prosthesis Evaluation Questionnaire (PEQ-MS) was performed in 123 patients with LLA. In order to comply with the pre-set quality criteria for rating categories, categories "yes, if someone helps me" and "yes, if someone is near me" of the LCI were collapsed into a new single category and the 11 categories of the PEQ-MS into 5 new categories. Two items of the LCI/4 ("Get up from the floor", "Walk outside in inclement weather") and one of the PEQ-MS/5 ("Shower/bathe") proved to be poorly related to the measured dimension and were eliminated. Both revised scales had an excellent internal consistency and a high ability to distinguish a hierarchy of items and persons along the measured construct. In conclusion, Rasch analysis helped to improve the metric characteristics of both LCI and PEQ-MS, two tools for measuring mobility in people with LLA wearing a prosthesis. Objective assessment of long term mobility-To provide detailed and objective measures of long-term motor activity in people with LLA, we applied a new instrumental method based on the approach outlined by Bussmann. The signals coming from accelerometers, placed on the subject, during performance of usual ADLs, are stored on a solid state recorder. The data are processed offline and analyzed by a specifically developed classification algorithm, based on discriminant analysis, which estimates the subject's motor activity, identifying number and duration of postures and major movements. This method (developed in normal subjects) proved reliable and accurate in classifying activities of daily living in both transtibial and (after a refinement of the classification model taking into account the specific biomechanic behaviors induced by prosthesis) transfemoral amputees. Ongoing research in wearable sensors and wireless technologies, coupled with telemedicine solutions, will provide more comfortable and continuous activity monitoring.

KN015

SOME PROSTHETIC CHOICES IN PARTICULAR LIMB LOSS CONDITIONS

CANTISTA, Pedro

One of the main goals of Amputees Rehabilitation is to replace limb loss with efficient prostheses. There's a lot of interesting historical findings and old written registers of prosthetic devices. Along many centuries the progress in prosthetic fitting was very modest. It was the 20th century that brought us a real progress in this field. The two world wars caused a great number of young amputees. Mainly after World War II the scientific principles of Anatomy, Physiology, Biomechanics and Bioengineering were more and more applied to the prosthetic research. New materials and new technologies appeared. We live in a present status of enormous advance on this rehabilitation area. The new tools of motion and gait analysis allow us a better evaluation and validation of new component solutions. There are now other possibilities for some amputees that previously couldn't benefit from prostheses. For instance: very old patients, amputation of vascular cause, phantom limb pain, some difficult levels of amputation or some very irregular shaped stumps or congenital deformities. We present some case examples of our experience in these particular situations that benefited from those new devices possibilities. Our lecture also reports some of our options in specific limb loss conditions that may enlarge the choices of the prosthetic prescription.

KN016

HAND REHABILITATION: GENERAL PRINCIPLES

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The aim of hand rehabilitation is to maximise the residual function of the hand and the upper extremity that is suffering from injury, disease or previous surgery. Main disorders which require hand rehabilitation are hand injuries (tendon, nerve and crush injuries, fractures, amputations, burns), arthritis, overuse syndromes and work-related injuries, neuropathic hand, brachial plexopathy, cerebral lesions such as stroke and cerebral palsy and cervical spinal cord lesions. Rehabilitation is essential shortly after hand surgery. Hand rehabilitation is a team work led by the rehabilitation medicine specialist. Members of this team include the patient, the hand therapist (physical and/or occupational therapist), the orthotist/prosthetist and other professionals such as psychologist, vocational counsellor and other medical specialists in relevant situations. Collaboration with the hand surgeon is very important in post-surgical hand rehabilitation. The first step in this team work is the assessment of the patient regarding his impairment and functioning of the hand. This assessment includes visual and tactile examination for skin condition and temperature, circulation, oedema, deformity, muscle atrophy, scar condition, hypersensitivity, joint or soft tissue tightness, range of motion, sensation, pain, muscle testing, grip and pinch strength and evaluation of hand dexterity and functional activities. Treatment goals in hand rehabilitation include prevention and control of oedema, assistance in tissue healing, pain management, use of appropriate orthosis, appropriate exercise therapy for increasing range of motion, muscle re-education or strengthening, scar management, desensitisation therapy, sensory re-education, promotion of hand dexterity and functional activities. Various physical modalities such as heat, cold and electrotherapy are useful and can be used for the enhancement of hand therapy. Treatment program should be unique for each patient. It should be pres-

cribed depending on the initial clinical assessment and be updated frequently according to the needs and priorities during the rehabilitation phase.

KN017

CRITERIA USED FOR ADMISSIONS TO INPATIENT REHABILITATION FACILITIES

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Physicians find they need clear and generally accepted criteria to justify their admissions to inpatient rehabilitation facilities. This paper seeks to initiate an international discussion on the issues related to the development of these criteria. Over time the number and variety of rehabilitation facilities has increased, complicating the task of defining admission criteria. For instance, in the US there are rehabilitation programs in long term acute care facilities, rehabilitation hospitals or hospital-based units, skilled nursing facilities (SNFs), patients' homes and outpatient facilities. The configuration of services varies in each of these settings; they are designed to meet the needs of different categories of patients. All have the goal of increasing patient capacities for activities and participation. Patients vary along a continuum in the severity of their disabilities. The result is an overlap in the characteristics of patients admitted to these different programs, further complicating the development of admission criteria for each. In the US, hospital-based inpatient rehabilitation programs must be able to provide intense therapies, generally at least three hours per day, in an interdisciplinary setting that provides the support services needed to facilitate community participation after discharges. SNF programs include less intense therapies, at most 2. 5 hours per day, and fewer support services. The American Academy of Physical Medicine and Rehabilitation (AAPM&R) recently developed standards for assessing the medical criteria used for admitting patients to rehabilitation hospitals or units. These include six standards that describe patient characteristics and eight that identify those of the organizations. The patient characteristics include having sufficient functional limitations and medical needs to require a medically supervised, rehabilitation nurse supported, interdisciplinary, comprehensive rehabilitation program; being capable of participating in and benefiting from such a program within reasonable time and having the social support necessary to make a community discharge likely. These AAPM&R standards require organizations to admit only medically appropriate patients through an admissions process that assures access to needed medical information, utilizes written admission criteria and places ultimate responsibility for these admission decisions on appropriately trained and experienced physicians. Please fill in with your lecture

KN018

TRAUMATIC & NON TRAUMATIC – BRAIN INJURY REHABILITATION, RESEARCH & CLINICAL TASKS FOR PRM DOCTORS STARTING YET IN EMERGENCY PHASE

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In late 20 years European and World Organizations have defined some important documents on Health and Care, particularly for Disabled People and their rights: Key-points of this process are summarized in ICF. Globality and Individuality of the Person (and for the Community) are the main values for Health policy. These concepts stated by ICF are very important for PRM role and activities,and for PRM spreading in all Countries and in all clinical problems. Treatment of Severe Brain Injury is surely one of the most relevant probelms for National Health Service: in Acute Care, in Hospital, in Rehabilitation Centres and at last (but not least) in Social Services, Hospices and Home Care in the Community. Surely is a problem in wich ICF indications can to be used to understand this complex needs,to face up as better is possible, to offer best services,right and timely to all different patients (in relation to different possibilities to recovery and to different family possibilities to take care). So the solution must be a Network: -including all activities,both medical and social,starting from emergency and neurosurgery, -constructed not only in relation to the Injury,but most in relation to the individual recovery potential, -guided and verified only to the results of recovery and quality of life (Person and Family). This Network is necessary for us; is necessary to be able to realize suitable PRM interventions in all different steps,according to all other collegues and treatments. Is necessary to verify efficacy and effectiveness for all different interventions. Is necessary to realize when all other collegues and services, must enter in action,how and with wich aims. Goals and Tasks are Participation and Health: so standards and parameters are based on Rehabilitation Individual Process. Also for research (from Neuropharmacology to Neurosurgery, from modalities in management to technologies for Aids) objectives are defined by Rehabilitation Process following ICF statements. Everyone must understand that also financial demands,rising very quickly for all Countries in relation to these problems,can be justified only by this way. The conclusion is that PRM Doctor (able to make a synthesis of all these matters mantaining the focus on Person) have to hold a specific position to guide and verify all the activities of this network, by a strong and deeep multidisciplinary cooperation.

KN019

BIOFEEDBACK AND NEUROFEEDBACK APPLICATIONS IN REHABILITATION MEDICINE

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Biofeedback and EEG biofeedback (neurofeedback) are based on the principles of operant conditioning. Electronic, electromechanical instruments are used to measure and process, and feedback to patients with auditory and/or visual signals. The persons learn to self-regulate their physiological processes with the help of feedback information. This information reinforces, facilitates, and augments physiological and cognitive learning. The persons develop greater awareness of, and an increase in voluntary control over their physiological processes. In rehabilitation, EMG biofeedback is the one which is mostly used, but others such as angular, positional, pressure, temperature biofeedback systems are also beneficial. There are a lot of diseases and clinical conditions where biofeedback can be used, but the main usage depends on neuromuscular reeducation and muscle relaxation. Regarding these, biofeedback can be useful in the treatment of central and peripheral paralysis, gait disorders, various pain disorders, post-orthopaedic surgery conditions, muscle tonus increase, bladder and bowel functional disorders, and speech/swallowing disorders. Neurofeedback supports the individual's ability to modify the amplitude, frequency or coherency of the neurophysiological dynamics of the brain. It is a learning approach that enables persons to alter their brain waves. When information about a person's own brainwave characteristics is made available to him/her, they can learn to change them. Neurofeedback is mostly used in epilepsy, attention deficit hyperactivity disorder, alcohol abuse, post traumatic stress disorder, and pain syndromes. The neurofeedback training may also play role in improving function in neurological conditions such as stroke, traumatic brain injury, and cerebral palsy.

KN020

ASSESSMENT OF NEW DEVICES IN REHABILITATION MEDICINE

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The assessment of muscle strength, power, range of motion, stiffness and flexibility is important in exercise science. Similarly, evaluation of neuromuscular behaviour is of extreme relevance and interest in the field of rehabilitation. A balance must be made between simultaneous demands for protection against undue stress to facilitate healing and the need for stress to retard atrophy of musculo-skeletal tissue. To help the long process of recovery, which goes from injured conditions to normal physiological behaviour, the rehabilitation programs can be effectively helped by the assessment of muscle behaviour. This should be performed periodically during the training period for monitoring the effect of training on neuromuscular functions and specific performances. This is possible by the device that measure strength, power, and velocity in every human motion against gravity; i. e. all the functional motions we do in our daily life; this is isotonic-emg Evaluation (IE). The IE is based upon a precise measurement of load displacements of any machine using gravitational loads as external resistance and allows the calculation of velocity, force and power during concentric eccentric and stretch-schortening cycle activity, through a sensor consisting of an infrared photo interrupter or a yo-yo. In the therapeutic field of Rehabilitation Medicine, Vibration Therapeutic exercise (VTE) is gradually becoming important: this is the product of sinusoidal vibration that elicits tonic vibration reflex, enhancing muscle contraction. VTE is given to the patient by local, whole body, and upper arm modality. Vibration energy is 20-50Hz, displacement of 2-4mm, 2,28-5,09g. Vibration is associated to isotonic or isometric contraction. VTE renders specific training of fast-twitch fibers, which have an important contribution in ballistic strength. It obtain the amelioration of flexibility and maximal power. VTE has many applications in rehabilitation medicine: pre and post surgical rehabilitation, osteoporosis, non-union fracture, neuroalgodistrophy. It needs a patient monitoring by the physiatrist, and a precise application by the physiotherapist. This is a period of experimental studies in this field, but the actual knowledge let to see an interesting future for VTE in rehabilitation Medicine.

KN021

TECHNOLOGIES IN REHABILITATION

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INTRODUCTION

Drop foot is a frequent and disturbing impairment after brain injury affecting the different parameters of gait and functional performance.

AIMS

To assess the effect of the NESS L300, an FES neuroprosthesis designed to ameliorate foot drop, on the stability and symmetry of walking in patients with foot-drop.

METHODS

24 patients (mean age: 54. 0±13. 5 yrs) with chronic hemiparesis (5. 8±5. 2 yrs) whose walking was impaired by foot-drop. Patients were post stroke (n=21) or traumatic brain injury (n=3). Subjects walked for 6 minutes wearing force-sensitive insoles in randomized order, once with and once without the neuroprosthesis. Two additional gait assessments with the NESS L300 were conducted after using the device for four and eight weeks. Walking speed, swing and stride time were determined, along with gait symmetry index and stride time variability, both markers of gait stability and fall risk. In order to simulate daily life situations, gait speed was also measured during 10 meter walk on obstacles course (a portion of the Emory functional ambulation profile).

RESULTS

All subjects were able to walk with the NESS L300 immediately after fitting. A repeated measures model was used for each parameter to analyze the neuroprosthesis effect with the 4 test-time points, and the Dunnett's multiple comparisons test to compare baseline to results using the NESS L300. While wearing the FES neuroprosthesis walking speed improved immediately by 17% (from 0. 53 ±0. 24 m/sec to 0. 62 ± 0. 22 m/sec), and after eight weeks by 34% (to 0. 71±0. 25 m/sec; p<0. 001). The gait symmetry index was improved by 28% (from 0. 58±0. 30 to 0. 42±0. 22), and by 45% (to 0. 32±0. 20; p<0. 001) after eight weeks. Stride time variability decreased by 23% (from 5. 7±2. 9% to 4. 4±1. 3%) and by 33% (to 3. 8±1. 4%; p=0. 002) after eight weeks. The improvement in gait speed was even more dramatic when walking over the obstacle course. The speed was immediately increased by 24% (from 0. 34±0. 16m/sec to 0. 42 ± 0. 17 m/sec) and reached to 0. 49±0. 20 m\sec after 8 weeks (p<0. 001), with overall improvement of 44% in gait speed.

DISCUSSION

These results demonstrate that even the initial application of the NESS L300 enhances gait. An increase in walking speed was observed in conjunction with a dramatic improvement in gait rhythmicity and steadiness. The ability to increase gait velocity while walking over obstacles may reflect better ability to overcome difficulties at walking in a daily life environment. Furthermore, improvement apparently continues with ongoing use.

CONCLUSIONS

These findings suggests that stroke and traumatic brain injury survivors can gain meaningful benefits from using lower limb neuroprosthesis right away and intensify their gait abilities even more with usage.

KN022

SPINAL STENOSIS, BACK PAIN, OR NO SYMPTOMS AT ALL?

HAIG, Andrew

INTRODUCTION

The term 'spinal stenosis' has been used both for a severe and common disabling condition of the spine and for a statistical deviation from average spinal canal measurement, regardless of any symptoms. While it is assumed that the two are related, in fact, the relationship of anatomy to surgical outcomes and clinical symptoms is not straightforward, and very small cohorts have shown that it is possible to have radiological stenosis without clinical symptoms. Electrodiagnostic testing has been used for spinal disorders for over 60 years 1, but is generally not acknowledged as useful in evidence-based reviews. 2 This is largely because of methodology flaws and validation issues. 3 Prior to the current study we have anatomically validated needle placement in the limbs, and the paraspinal muscles. Our paraspinal technique, known as Paraspinal Mapping, has undergone test-retest and inter-rater reliability studies and normal values have been established. 4, 5, 6 Paraspinal Mapping scores relate to severity of radicular disease. The current study set out to: 1. Evaluate the relationships of the clinical syndrome with MRI and EDX findings. 2. Determine whether diagnostic or clinical parameters predict clinical status at 18 months. 3. Validate and establish a number of methodology issues, clinical techniques, and scientific questions in this population.

METHODS

With ethical review board approval, persons with radiological stenosis, with no stenosis or radiating pain, and without spinal symptoms, ages 55-80 underwent screening for neuromuscular disease, ambulation testing, extensive questionnaires, physiatrist comprehensive spine history and physical exam, magnetic resonance imaging, and electrodiagnostic testing, with a review of questionnaires, exam, and MRI (but not EDX) by a neurosurgeon. Subjects who continued to meet eligibility criteria were invited for retesting after 18 months.

RESULTS

EDX detected neuromuscular disease in 8, who were eliminated, along with 16 who had inadequate data. For the final cohort the physiatrist's independent impression was: spinal stenosis in 50, back pain without stenosis 30, and no back pain, 30. In a 'gold standard' population (N-48) where the radiologist, physiatrist, and neurosurgeon agreed on category, Paraspinal Mapping score of >4 had 100% specificity and 30% sensitivity for stenosis compared to either the back pain or asymptomatic groups (each p<. 04). A composite limb/paraspinal fibrillation score had a sensitivity of 47. 8% and specificity of 87. 5%, p=. 008, and H-wave sensitivity was 36. 4, specificity 91. 3, p=. 026 for stenosis vs. all controls. 7 In the whole population (n=126), there was no relationship between clinical diagnosis and radiologist impression (p>. 8), but a trend for EDX to relate to clinical diagnosis (p=. 14 vs. asymptomatic and p=. 09 vs. back pain) which would have been significant if norms established for the first time in this study were used. The diagnosis of spinal stenosis related significantly to the presence of fibrillations on EDX testing (p<. 003), antero-posterior spinal canal diameter (p=. 016) and the average of two smallest antero-posterior spinal canal diameters (p=. 008). Notably, motor unit changes, H-waves, and f-waves before and after ambulation did not predict category. MRI measures did not differentiate clinical stenosis subjects better than chance, but Paraspinal Mapping scores did (p<. 05). 8, 9 Exclusions and limits on funding resulted in follow-up on 83 subjects (79% of eligible subjects). Although initial and follow-up diagnosis tended to agree (kappa 0. 394, p<001), there were substantial shifts between

the 3 groups. In the stenosis group, pain, ambulation and EDX findings trended for improvement. EMG, and MRI did not predict function or pain. Initial function predicted follow-up function and initial sleep difficulty (but not initial pain) predicted future pain. For persons with spinal stenosis initial PM score did not predict decline in pain or function. However a change in diagnostic category to less severe disease or no symptoms did relate to the change in PM score (ANOVA, F = 3. 770, p = 0. 037). 10, 11 There was a <6% chance of meaningful unmasking. 12 Unmasked clinicians were more variable than masked physicians (F(2, 219) = 4. 808, p = <. 01) and gave lower scores to persons they felt had mechanical back pain. The percentage of inadequate segmental scores differed among clinicians (0% to 16. 6%, F(8, 226) = 4. 170, p <. 001), with fellows having more difficulty than faculty (11. 76% ± 32. 38% vs. 0. 75% ± 8. 67%) (t(233) = 3. 753, p <. 001). Correction of clinician bias improved the relationship between paraspinal score and the subjects' ability to walk. (Weighted regression R2=0. 129, B=-0. 047, p <. 001, unweighted regression R2 = 0. 090, B=-0. 045, p <. 001). 13 Discussion: For the first time The Michigan Spinal Stenosis Study establishes that EDX is a valid test for the clinical syndrome known as spinal stenosis, to the satisfaction of modern evidence based medicine. In fact, radiological measures of 'stenosis' do not relate well to clinically recognized 'stenosis'. This may be because clinical stenosis relates to dynamic changes or postural changes, rather than supine lying MRI findings, or because of inflammatory, facet joint, or vascular contributions to the syndrome. Regardless, MRI 'stenosis' is so common in the asymptomatic older population that clinicians should not use MRI to determine whether a person has pain or to judge the severity of disease. In contrast, electrodiagnostic testing, especially Paraspinal Mapping, is useful in differentiating persons with symptoms from those without. More important in clinical practice, EDX differentiates mechanical back pain from 'spinal stenosis', and detects neuromuscular diseases that can mimic stenosis, even when these have been screened for clinically. Clinical electrodiagnosticians should note new age-related normative values for Paraspinal Mapping. 14 Polyphasic motor units and F-waves are not a good predictor of symptoms. have polyphasic motor units. EMG researchers can see that masking of the needle examination is possible and important. Individual clinician bias relates to experience and other factors. When these are corrected for, especially through more detailed protocol such as with Paraspinal Mapping, the EMG relates better to the disease and disability. This is the first adequately masked study in needle EMG and the largest cohort of asymptomatic older people to undergo lumbar MRI scans. Other methodology strengths include a second 'control' population of persons with low back pain, the inclusion of both quantitative and qualitative radiological and electrodiagnostic data, and the diverse backgrounds of the defining clinicians. The methodology does have some limitations. Due to our goal of long term follow-up, the population included only small numbers of persons categorized clinically or radiologically as having severe stenosis. The clinical 'standard' of a single physician's opinion could be strengthened by either agreement between two clinicians or strict adherence to the symptom of 'neurogenic stenosis' as the defining point of stenosis. Nevertheless, the diagnostic categories likely reflect the behavior of reasonable clinicians, and there can be little question that the asymptomatic population was truly asymptomatic.

CONCLUSION

MRI is not reliable in determining whether clinical spinal stenosis is present. Electrodiagnostic testing is a valid test for spinal stenosis.

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KN023

THE TREATMENT OF MYOFASCIAL PAIN WITH BOTULINUM TOXIN. CURRENT STATE AND PRACTICAL APPROACH.

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INTRODUCTION

Myofascial Pain Syndrome (MPS) is a clinical entity characterized by regional pain associated with myofascial trigger points (MTrP). A MTrP is defined as well-localised focus of hyperirritability, normally within a taut band of a muscle that, when compressed, is locally tender and may give rise the referred pain distribution pattern. The diagnostic should be confirm with the detection of the MTrP. An injection with local anaesthetic may relieve the pain temporarily. It is necessary some degree of clinical experience for a successful research. With the currently therapeutic resources, many cases with good initial response relapse with pain again and others can not be improved, so new types of therapy are needed. Botulinum toxin and MPS Botulinum toxin type A (BTA), initially was intended to treat disorders characterized by excessive muscle contractions. Very soon it was noted that this drug also reduced accompanying pain in some clinical conditions, like migraine, tension-type headache, distonia, etc. Currently it is accepted that BTA has also an antinociceptive effect related to a possible block in one or more pain neurotransmitters. Our experience with BTA in MPS An open-label interventional prospective trial was conducted in 140 patients diagnosed of refractory MPS resistant to physical therapy and anaesthetic injections of MTrP. The assessment of treatment efficacy was made on a pain VAS and a pressure algometer at baseline, 15, 30, 90 and 180 days. Previous informed consent, 75-300 units of Dysport® (in a volume of 100U/cc) or 25-100 units of Botox® (in a volume of 25U/cc) were injected. Every patient was injected in one to three MTrP. Summary of results at first month are shown in the next tables: VAS score Cases Percentaje Adding Null (VAS < 25%) 33 23,6% Mild (VAS 25-50%) 28 20 N + M: 43,6% Good (VAS 50-75%) 53 37,8 Excellent (VAS >75%) 26 18,6 G + E: 56,4% ASSESSMENT SCORES Baseline One month post-TBA VAS Average 6,8 (4,5-8) Average: 3,5 (range: 0-8) Algometre Mean: 2,3 Kg. (0,2-3,6) Mean: 2,7 (range: (0,4-3,6) Regarding side effects, we have observed 29 cases (20,7%) with some transient adverse effects, specially pain increase after injection, a like-flu syndrome, and 3 cases with difficulty in the cervical extension (due to muscle weakness). The results of our experience are quite consistent with other studies showing the efficacy of BTA for treating patients with MPS.

KN024

PHYSICAL EVALUATION AND RECONDITIONING OF PATIENTS WITH LOW BACK PAIN

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Low back pain may have a major impact on physical activity level and physical fitness. Moreover, as fitness may be considered a strong determinant of functional independence and quality of life, evaluation of patients presenting with chronic pain should ideally encompass fitness assessment. When there is no doubt that assessing physical fitness of patients with chronic pain is relevant, the validity of usual fitness tests as applied to patients with pain is still largely debated. Physical fitness is a set of physical attributes that relate to the ability to perform physical activity. It is a multi-factorial construct that includes several components, which are: cardiorespiratory endurance (CRE), muscular strength and endurance, flexibility, motor control, body composition. In the last edition of the McArdle, Katch and Katch textbook on exercise physiology, the authors define the four most common components of health-related fitness as CRE, body composition, abdominal muscular strength and endurance and lower back and hamstring flexibility. Thorough physical fitness assessment should theoretically include evaluation of all components. In most physical fitness tests, maximal performance is expected from the subject. Performances obtained through maximal physical tests are determined by physical, but also psychological factors. Performing well at maximal tests is clearly not only a matter of muscle size or cardiovascular capacity, especially in patients with pain. In such patients, pain itself and psychological factors such as fear avoidance behavior, kinisophobia, may considerably limit the intensity of effort during maximal physical tests. Thus, maximal physical tests conducted in patients with pain provide us with multidimensional, psychophysical (behavioral), rather than unidimensional physiological parameters. Hence, measurements of physical fitness should preferably be obtained by submaximal testing procedures. Body composition and CRE are the only components of fitness that can be assessed by submaximal testing procedures. The latter is generally considered as the most fundamental component of fitness. Valid fitness testing procedures should probably be limited to evaluating CRE and body composition, which should provide sufficient information on the physical status of most patients with chronic lox back pain.

KN025

DOPPLER ULTRASONOGRAPHY IN MUSCULOSKELETAL PAIN AND TENDINOPATHIES

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Until recently, ultrasonographic studies of musculoskeletal pain and tendinopathies were mainly descriptive.

During the last few years, questions have arisen about the correlation between abnormal ultrasonographic findings and clinical findings and symptoms. The correlation between increased blood flow, visualized by colour Doppler or power Doppler, and pain has been widely studied, mainly in Achilles and patellar tendons. In this study, a literature search for "Doppler and tendinopathy and pain" and "Doppler and pain" was conducted and discussed. Increased flow on power Doppler does not strictly relate to pain. Several studies have indicated the presence of neovessels as a cause of pain. Adding colour Doppler and power Doppler to standard gray-scale protocols could be useful in identifying subclinical pathology and in guiding and following up treatment

KN026

"STRATEGIES AGAINST WRMI (WORK-RELATED MUSCULOSKELETAL INJURIES) ASSOCIATED WITH PATIENT HANDLING"

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A-TEI ATHINAS

Work-related musculoskeletal injuries associated with patient care have been a problem for decades. The chasm between current practice and scientific evidence is huge, when assessing interventions to prevent or minimize the risks associated with patient handling. Despite strong evidence, published internationally over three decades, most clinical settings have used significant resources to implement strategies that are not evidence-based. There is a growing body of evidence to support interventions that are effective or show promise in reducing musculoskeletal pain and injuries in care providers. Various types of interventions have been implemented in an attempt to reduce high risk patient handling tasks. These solutions can be considered as controls and are therefore divided into three categories, namely engineering, administrative, and behavioral controls. To date, the interventions with the strongest level of evidence include: (a) use of patient handling equipment/devices, (b) patient care ergonomic assessment protocols, (c) no lift policies, and (d) patient lift teams. Promising new interventions, which are still being tested, include the use of unit-based peer leaders and, clinical tools such as algorithms and patient assessment protocols. Effective use of evidence based stragedies for patient handling creates a safe healthcare environment by separating the physical burden from the nurse and ensuring the safety, comfort, and dignity of the patient.

KN027

SWIMMING PAIN SHOULDER

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The swimming pain shoulder is a pathologic condition-representative for pain in shoulder to relate with swimming activity. The term swimmer´s shoulder refer to the tendonitis of the Bíceps tendons. As the least joint stable joint the shoulder is the most vulnerable to injury in the overthead position. To keep up with the continous replated demands made by swimming the muscles of the rotator cuff may be requiered to work excessively. With the cuff gaigue that results from this work migration of the humeral head may occur with in tur may be a factor that triggers the onset of tedonitis. Treatment includes increase in both warp-up and warp-down tunes particular attention to practiced streching,icing corrcton of external rotation weakness,decrease in work load and temporary elimination of painful strokes. It is important that practice strokes be pain free. Autor Dra. Joyce Bolaños de Rodríguez. President of Latinoamerican Rehabilitation Medicine Asociation. AMLAR e. mail joybgven@yahoo. com Caracas Venezuela.

KN028

PEDIATRIC EVALUATION DISABILITY INVENTORY IN CEREBRAL PALSY

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INTRODUCTION

The Paediatric Evaluation of Disability Inventory (PEDI) is a comprehensive clinical assessment instrument that samples key functional capabilities and performance in children from the ages of 6 months to 7. 5 years. However, it can also be used for the evaluation of older children if their functional abilities fall below that expected in 7. 5 year-old children with no disabilities. The PEDI measures capability and performance of functional activities in three content domains (self-care, mobility and social function), which are rated in three scales: functional skills scale, caregiver assistance scale and modifications scale. The functional skills scale consists of 197 functional skill items which are a direct measure of the functional capability of the child. The rating for this scale is dichotomous: 0 if unable, 1 if capable. The caregiver assistance scale includes 20 items that measure of the amount of help the caregiver provides in everyday situations, scoring from 0 (total assistance) to 5 (child is independent). Finally, the modifications scale indicates the environmental modifications and equipment the child needs to carry out routine daily activities.

AIMS

The aim of this study is to describe the responsiveness of the PEDI, in comparison to the Gross Motor Function Measure (GMFM), in a group of children with cerebral palsy.

METHOD

The subjects are 20 patients with CP who are undergoing treatment at the Hospital of Cruces (Barakaldo, Spain). This talk describes several case studies comparing the responsiveness of the PEDI and the GMFM.

CONCLUSIONS

This study concludes that for patients with severe motor impairments, a purely motor scale is of little use, as many of their abilities will pass unnoticed. This not only demotivates the patients, their parents and their therapist, but also gives us little information of their achievements. In cases such as these, it is important to use a global evaluation scale like the PEDI.

KN029

MANAGEMENT OF CEREBRAL PALSY IN KOREA

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INTRODUCTION

Cerebral palsy (CP) is a disorder of movement and posture resulting from non-progressive injury to immature brain. According to our study, the incidence of CP is 2. 7 per 1,000 live births in Korea and the spastic type CP is about 90%. Diagnosis Making a definite diagnosis of CP is not always easy, particularly before the childi¯s first birthday. According to our study, the most significant signs for detecting brain dysfunction before 6 months of age are motor developmental delay, abnormal muscle tone and abnormal postural reactions. Treatment The management of CP must be comprehensive and planned according to the status of each case. The various therapeutic methods, such as physical and occupational therapy, medication, orthoses, neuromuscular blockade and operation, are provided for CP in Korea. In cerebral palsy below 2 years of age, the physical and occupational therapy is the mainstay of treatment program. Our study showed that early treatment started before 6 months of age is more effective than the treatment started later. Oral medication can reduce the spasticity, but the effect is minimal. Orthoses can be prescribed to maintain the range of motion, prevent contractures and provide stability. The more invasive procedures are also needed. In our study, botulinum toxin injection to the gastrocnemius in equinus gait and phenol injection for managing spasticity of the hip adductor are extremely useful. Selective posterior rhizotomy combined with post-surgical rehabilitation had significant effects on both the gross motor function and ADL in our study. Orthopedic surgery plays a valuable role in correcting the fixed deformities and reducing the muscle tone. Intrathecal baclofen(ITB) therapy is becoming a popular treatment for management of spasticity in cerebral palsy. However, high cost of the ITB therapy makes it hard to be popular in Korea. Recently, there has been growing interest in the therapeutic trial of cell and gene therapies.

CONCLUSION

The treatment program for CP should be comprehensive and prescribed according to the developmental stage and functional level. In the future, the regeneration of hypoxic brain tissue could be the main therapeutic goal using new technical approaches such as cell and gene therapy.

KN030

CEREBRAL PALSY AND BOTULÍNUM TOXIN – A

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Cerebral palsy is the commonest cause of severe physical disability in childhood. 80% have spastic hemiplegia/diplegia. Spasticity causes impedance of walking and can affect the general care of a child. This is why management of spasticity is of great importance. In general we must prevent all the negative consequences of spasticity by physiotherapy, occupational therapy, orthotic devices, casting, drugs and even surgical procedures. Drug treatment can be systemic, regional or local. Botulinum toxin-A works against spasticity on local level. It works on the neuromuscular junction, it blocks the release of acetylcholine and it causes chemical denervation. The aims of using Botulinum toxin are to improve function, to facilitate conventional treatment, to reduce complications and to prevent or delay surgical procedures. For each spastic muscle the injection points are described, as well as its functional importance and the complications in walking gait when it is very spastic. The injection technique is described in details, together with the clinical effects and the possible adverse effects. The service for Botulinum toxin in the "Limassol Centre of Physical and Rehabilitation Medicine" is presented, the clinical organization, the setting of goals with the parents, the explanation of the procedures, the follow up and a clinical survey of 18 months. Finally guidelines are given for pre-treatment and post-treatment procedures and the conclusions of our experience are presented.

KN031

JUVENILE CHRONIC ARTHRITIS. REHABILITATION AND FUNCTIONAL SCALES

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JCA is best defined as the condition of chronic synovitis in children. In the late 1970s two classification schemes for primary forms of chronic rheumatism in children were proposed, with different names and different exclusion criteria: ACR used JRA, where as EULAR used the term JCA. Later the Paediatric Standing Committee of the ILAR proposed a new term "juvenile idiopathic arthritis (JIA)" The assessment of overall health status of a child with JCA is complex and multi-dimensional. The general physical examination is complemented by a rheumatological evaluation that includes determination of articular indices of inflammation and duration of inactivity stiffness. In recent years, it has been realized that measurement of overall physical and psycho-

social function, quality of life, and pain are major descriptors to consider during routine follow-up. They are also critical in the assessment of long-term clinical effectiveness. For evaluation of pain,VAS,VISUAL and SHADED ANALOGUE SCALES, VAS of the VARNI PAEDIATRIC PAIN QUESTIONNAIRE, 4-POINT VERBAL DESCRIPTOR SCALE, GRAPHIC RATING SCALE(GRS),VERBAL DESCRIPTOR SCALE, and FACIAL AFFECTIVE SCALE can be used In JCA the indices of disease activity, such as joint swelling, pain, tenderness, limitation of motion, may poorly correlate with the degree of functional impairment. To evaluate these indices JCS- joint counts on swollen joints, JCT- tender joint count and JAM-joint alignment and motion scale are used Prediction of the long-term outcome for patients with JIA requires assessment of disability, psychosocial and socioeconomic function. Measures have developed from Steinbrocker functional classification to validated self-administered questionnaires. The disability section of the Childhood Health Assessment Questionnaire (CHAQ) assesses functions in 8 areas. CHAIMS is based on the AIMS for adults with RA. Childhood version consists of only the physical disability scale. The JAFAR focuses on musculoskeletal function. Disability and pain are the domains evaluated with JAFAR. It is self-administered and thus more cost-efficient. The CHAQ and the JAFAR are useful in long term studiesThe JASI was developed on the premise that greater number of items and response options would provide greater responsiveness. Physical function and psychosocial domains are evaluated in CAHP. The JAQQ includes 75 questions in five domains: gross motor, fine motor, psychosocial and general symptoms.

KN032

ANKYLOSING SPONDYLITIS AND ANTI-TNF-ALFA THERAPY: IMPLICATION FOR PATIENTS

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Ankylosing spondylitis (AS) is a chronic inflammatory rheumatic disease with an estimated prevalence that varies between 0. 1 and 0. 8%, predominantly affecting young males, and associated with the presence of HLA-B27 antigen in as much as 90% of cases. The main characteristic of the disease is sacroiliitis, however with the exception of peripheral joint involvement (most commonly oligoarthritis), extra-articular manifestations are quite common. Until recently, AS was essentially treated with non-steroidal anti-inflammatory drugs (which is still the first line pharmacologic treatment of the disease) and rehabilitation therapy, and in contrast with rheumatoid arthritis, the disease modifying anti-rheumatic drugs are of limited efficacy and only indicated in peripheral arthritis, not altering the course of axial disease. Recently and after confirming the importance of pro-inflammatory cytokines (especially TNF-Đ) and its detection in sacroiliac joint biopsy, TNF-Đ inhibitors (infliximab, etanercept, and most recently adalimumab) have been used in the treatment of the disease. These therapies demonstrated in open-ended and blinded studies well documented efficacy on symptoms and the most commonly-used disease indexes (BASDAI, BASFI, ASAS, etc.). The use of these therapies should be based on internationally accepted consensus; patients should be carefully studied before initiating these treatments, and serially evaluated through the BASFI and ASAS score. The chance that these therapies can halt disease course is under investigation and not yet documented. The use of anti-TNF-Đ agents has brought hope to many AS patients who have not responded adequately to classical treatments, although more studies are needed to evaluate the efficacy, toxicity, and opportunity for use of these therapies in the long term to improve their use.

KN033

HAEMOPHILIC ARTHROPATHY: NEW TRENDS IN DIAGNOSTIC AND THERAPEUTIC APPROACH

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Haemophilia is an X-chromosome linked disease (deficit or absence of coagulation factor VIII or IX). The natural history of haemophilic arthropathy is intra-articular bleeding which can occur spontaneously or after trauma. The mechanism of haemophilic arthropathy is multifactorial, including physical, chemical and inflammatory factors. Patients affected by haemophilia have recurrent intra-articular bleeding which leads to a progressive destruction and joint instability. The clinical features are described and the therapeutic approach for each joint involves a broad spectrum of resources. Comprehensive care must emphasize: Intra-articular blood first has a direct effect on cartilage, and subsequently affects the synovium. Many authors suggest that the intra-articular blood-induced collagen and proteoglycan damage is involved. The treatment of haemophilia requires replacement of factor concentrates during enough time to stop bleeding. The main goals of treatment of haemophilic arthropathy are: to alleviate symptoms, prevent progression of articular damage and preserve a functional range of motion. In order to reach these goals, we must identify the right strategy for each joint after a correct diagnose. We can obtain the correct diagnosis of the therapeutic process and identify the stage of a wound more easily through frequent thermographic assessment of the intra-articular inflammatory process. Pedobarography has been of great use in the assessment of ankle instabilities. The assessment of proprioception can be more accurate through the platform system, which records the potential response and speed of movement of the patient to the stimulus of micro-processed visual commands. We conclude that the evaluation of joint alterations on hemophilic foot must be accurate and reliable in order to allow a clinical and functional follow-up that meets the needs of the patient.

KN034

THE TREATMENT OF CHARCOT NEURO-ARTHROPATHY – CONSERVATIVE OR SURGICAL?

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INTRODUCTION

Charcot Neuroarthropathy accounts for 15 – 40 folds in risk of lower limbs amputations in diabetic patients. The differential diagnosis is difficult. Lack of definite tests for the diagnosis and similarity in presenting symptoms of the acute phase leads to misdiagnosis or delayed diagnosis.

AIMS

The goal of treatment should focus on prevention of further fractures contributing to a deformity which together with the neuropathy leads to ulcers and amputations. If the prevention failed surgery may decrease the risk for ulcers and amputations.

METHODS

The treatment of the acute phase of Charcot foot should be conservative. Conservative treatment is based on immobilization and non weight bearing. The role of the PM&R specialist in personally tailoring the appropriate means is critical. Factors such as compliance, availability of Orthotics or special molded shoes influences the choice of treatment. Other options such a crouches, wheelchair, Total Contact Cast, or commercially available, non custom-fabricated, depth-inlay therapeutic footwear and custom orthotic insoles should be considered. If the preventive measures in the acute phase failed, a permanent deformity and / or instability persist. Surgical intervention should be considered.

RESULTS

In the last two decades the more active attitude developed classifications and surgical techniques to address each sort of the deformities or instabilities. Summary of published series (10 altogether) presents the results of 255 patients who underwent surgery. The range of reported success rate is 0% -100% (average 59. 2%). The great range stems from the difference in location of the Neuroarthropathy and improvement in surgical techniques.

CONCLUSION

Better awareness to the diagnosis of Charcot Neuroarthropathy and proper treatment should decrease the risk for lower limb amputations in diabetic patients.

KN035

RANGE OF JOINT MOVEMENT IN FEMALE DANCERS AND NON-DANCERS AGE 8-16 YEARS: ANATOMICAL AND CLINICAL IMPLICATIONS

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INTRODUCTION

Little data is available on changes in joints range of motion (ROM) in dancers and non-dancers with age.

AIMS

Hypothesis: In dancers, joint ROM will increases with age while in non-dancers it will decrease, independent of the joint studied. Study Design: A descriptive, cross-sectional study

METHODS

The studied population included 1,482 female dancers, age 8-16 years, and 226 female non-dancers of similar age. ROM was measured at the hip, knee, ankle, foot, and spinal joints, using goniometer and measuring tape.

RESULTS

The pattern of changes in ROM with age varied with joint location and type of movement: a) No change among dancers, while deteriorating in the non-dancers (ankle plantarflexion, foot and ankle 'pointe', hip external rotation); b) Neither show any improvement with age. ROM is significantly greater in the non-dancer group (ankle dorsiflexion; c) ROM decrease in both groups (knee flexion, hip flexion, hip internal rotation); d) ROM decreases in dancers and remains constant in the non-dancers (hip abduction; e) ROM increase in both groups (hip extension); f) ROM increases among dancers and remains constant in the non-dancers (lower back and hamstring).

CONCLUSIONS

Dancers and teachers should consider, in their training programs that increases in active ROM at ages 8-16 years are likely to be due to increases in strength, as passive joint ROM generally remains stable at these ages. The older the girl starts dancing, the greater the difficulties to reach the desired ROM. Key terms: Dancers, range of motion (ROM), age, joints

KN036

SHOULD ALL CARDIAC PATIENTS BE OFFERED THE CHOICE OF REHABILITATION? ASSESSING THE EVIDENCE OF EFFECTIVENESS

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Cardiac rehabilitation services are recommended to meet the needs of people with all types of heart disease. However, the strength of evidence for the effectiveness of exercise-based cardiac rehabilitation in patients with various forms of heart disease varies depending on the form of the cardiac disease. The aim of this lecture is to present the evidence for effectiveness of cardiac rehabilitation in various cardiac disorders in an attempt to

identify those groups of cardiac patients who would be potential candidates for cardiac rehabilitation and who should be offered routinely the choice of cardiac rehabilitation. The benefits and effectiveness of exercise-based cardiac rehabilitation in coronary heart disease have been confirmed in several systematic reviews. There is a growing body of good evidence, also from systematic reviews, indicating that exercise-based cardiac rehabilitation is safe and effective in patients with stable, chronic heart failure. Evidence from randomized controlled trials including patients with coronary artery bypass graft surgery and those with percutaneous transluminal coronary angioplasty suggests beneficial effects of cardiac rehabilitation, leading to a high grade of recommendation of cardiac rehabilitation for patients who have undergone coronary revascularization. Patients with stable angina have also been shown to benefit from cardiac rehabilitation in randomized controlled trials. Evidence from a limited number of controlled trials indicates that a comprehensive cardiac rehabilitation program appears to be safe and can improve exercising ability of patients with implantable cardioverter-defibrillators. Several observational studies suggest that the use of a cardiac rehabilitation program following heart transplantation improves exercise capacity. Selected patients have been shown to have improvements in exercise tolerance in response to a moderate intensity exercise program following heart valve surgery. Even patients with congenital heart disease who undertake supervised exercise may achieve some improvements in exercise capacity; they may require and may participate in exercise programs ranging from very-low-intensity exercise to normal, with specific exercise parameters based on the characteristiscs of the original defect(s) and symptoms. In conclusion, based on the accumulating scientific evidence indicating beneficial effects, all cardiac patients in various categories of cardiac disease seem to be potential candidates for an individualized cardiac rehabilitation program. Cardiac rehabilitation is an effective intervention that should be offered routinely to all those who are likely to benefit and all patients should have the ultimate choice of considering it. Including cardiac rehabilitation in all treatment plans for eligible patients with various forms of cardiac disease should be a key strategy for reducing further disability.

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KN037

CHANGES IN QUALITY OF LIFE AFTER CARDIAC REHABILITATION PROGRAMME AFTER MYOCARDIAL INFARCTION.

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Cardiac rehabilitation (CR) is an established form of treatment for patients with AMI that is designed to provide a range of lifestyle and medical interventions

to reduce cardiac mortality and morbidity. Another important objective of CR is improvement in health-related quality of life (HRQOL). Patients who have had an AMI have decreased quality of life, with worse physical function, depression, other emotional problems, and on going pain. Predictors for HRQOL include age, employment status, baseline quality of life, comorbidity such arthritis or diabetes, depression, angina, dyspnoea and exercise tolerance. Also there is a relationship between social support, female condition, socioeconomic status, and HRQOL. They may also be useful as independent predictors of prognosis, including mortality Recent systematic reviews suggest that feedback to physicians about patient reports of health status may improve the process of care, though their ability to improve patient outcomes have not been identified at their current state of development. However few studies are controlled, and compared patients that enrol in a CR programmed whit others patients that not. In different meta analyses have not been possible to study the effects of CR programmes in the HRQOL due to the different instruments utilized. Generally the instruments are long and difficult to use in the clinical setting, their introduction is outside the scope of usual care, and the efficacy of their use on clinical practice is unknown to physicians. Usually physicians are not trained to employ such tools nor to utilize the resultant data about patients as part of their clinical evaluations. One of the problems of these instruments are the ceiling effect, that avoid the possibility to find changes in the quality of life of those patients in functional class I of the New York Heart Association or of the Canadian Classification for Angina Pectoris. Various instruments have been validated for post AMI patients. Some of them are general instruments and others are specific. Some of the general are: EuroQol-5D, SF 36, Nottingham Health Profile,, Sickness Impact Profile. Some of the specific are: McMaster quality of life after AMI, Velasco-del Barrio, Angina Pectoris Quality of Life Questionnaire, Seattle Angina Questionnaire, Quality of life index-cardiac version.

KN038

NON-INVASIVE VENTILATION: DOES IT MODIFIES NATURAL HISTORY OF MND/ALS PATIENTS?

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INTRODUCTION

Amyotrophic Lateral Sclerosis (ALS) is a degenerative, progressive and fatal illness with short survival. Respiratory insufficiency (RI) is the main cause of death. Biological mechanisms for gradual loss and cellular death of motor neurons are not clarified. Recently, in animal experiments it was possible to reproduce the illness, with a deletion in the gene expression of VEGF. In addition, a recent study, published by an European Consortium, verified in 1900 people that a lesser concentration of circulating VEGF was associated with a bigger risk of acquiring the illness, suggesting that hypoxia can unchain the process. These elements faced with the extraordinary needs in metabolic terms of these cells, justifies the importance given to the correction of this situation with Non-Invasive Ventilation (NIV).

AIMS

To clarify weather Non-Invasive Ventilation (NIV) modifies natural history in ALS/MND

METHODS

we conducted a prospective and controlled study of 156 consecutive ALS patients without RI (FVC il 75% of act pred) with at least one year of follow-up prior to admission and compared efficacy on survival as well as in functional outcomes with ALS function rating scale (ALSFRS) of late versus early institution of NIV, Group 1 (n=57) and Group 2 (n=99) respectively. Eight patients in G1 and 17 pats in G2 were also assigned to perform exercise under NIV and were analysed separately. All patients were followed-up to death optimizing NIV parameters until fulfilling criteria of adequate compliance. Statistical differences were analysed with t-test, chi-square when appropriate, survival-times curves and regression analysis.

RESULTS

No differences were found between groups regarding ALSFRS total, bulbar, spinal and respiratory scores at admission (p>0,5) as well as in respiratory function testing and neurophysiologic evaluation of diaphragm. Mean nocturnal oxygen saturation was higher in the exercise group though not significant (p<0. 09) and persisted throughout the follow-up. Clinical evolution was analysed with least square method showing a greater decay of clinical scores in Group 1 and a significantly lower decay in bulbar scores in the exercise group. Survival were higher in Group 2 as well as in the exercise group (p< 0,05; 0,03 respectively).

CONCLUSION

NIV improves mean nocturnal oxygen saturation and survival. Functionally ALS patients take partial advantage if a rehabilitation program is added to this therapy. However ALS still remains a unremitting disease.

KN039

MILD TRAUMATIC BRAIN INJURY AND POST-CONCUSSIVE DISORDERS: CURRENT CONCEPTS AND CONTROVERSIES

ZASLER, Nathan

Definitional controversies 1 lack of uniformly accepted criteria for defining mtbi l gcs – 13 – 15 (is mild always

mild?) l amnesia & loc as markers l rga vs. aga vs. pta l dsm-iv, acrm, sports concussion – criteria l too many definitions with no generally accepted one acrm definition l traumatically induced disruption of cerebral function l following qualifiers: – gcs 13 – 15 without subsequent worsening – pta of 24 hours or less – loc no longer than 30 minutes acrm mtbi definition l any loss of memory (either rga or aga) l any alteration in mental status at the time of the accident, even in the absence of loc or amnesia l physical symptoms which are potentially brain related l development of cognitive deficits not fully explained by emotional factors biomechanics of injury l may or may not involve hi l deceleration bi without hi has been shown to occur in "comatosed" monkeys & harnessed pilots crashing in military aircraft l 100 to 300 grams of acceleration needed for cerebral injury to occur l rotary/angular forces are more likely to produce bi l no histological or biochemical data to support concept of primary parenchymal injury related to tai without direct head blow in humans with low acclerative or decelerative forces pathoanatomy l abnormal ct in 10 – 20% of acute er admissions for mtbi l some with normal ct show abnormal mri l functional imaging via pet and/or spect does not correlate well with pcd symtpoms or neuropsych data and does not diagnose mtbi l most of the pathophysiology of mtbi renders neurons and neural systems dysfunctional but not destroyed l strain forces on brain act centripetally l vast majority of axons recover over time after mtbi when tai occurs l mtbi is, like tbi, a spectrum disorder genesis of post-concussive problems l remember – many types of post-concussive symptoms are not due to mtbi l generators of pcd type symptoms may include: – cerebral injury – cranial & cranial adnexal injury – cervical injury post-concussive type symptoms in chronic pain l sleep problems 83% l fatigue 76. 5% l irritability 73. 5% l apathy 69% l emotional problems 56. 5% l personality change 37% l dizziness 37% pcs: does it really exist l syndrome – consistent set of findings associated with a condition l fact: there is no consistency to the signs or symptoms of concussion l fact: there is no symptom(s) that is diagnostic of mtbi l conclusion: recommend not using the phrase cervical injury l chronic pain issues l cervicogenic dizziness l myofascial dysfunction and referred pain l cervical vascular injury l peripheral nerve injury: autonomic vs. somatic l basilar artery migraine cranial trauma l dizziness l hearing impairment – chl, ha l tinnitus l smell/taste deficits l visual deficits l peripheral nerve dysfunction l peripheral vascular trauma cerebral injury l pre-existing conditions – vulnerabilities – psychological and/or medical l mtbi neurological spectrum l cognitive, linguistic, behavioral and/or somatic sequelae l impairment vs. disability issues l common vs. rare neurologic sequelae after mtbi natural history of mtbi l neurologic and functional outcome is generally very good if you look at the total mtbi population (athletes do better than "civilians") l "miserable minority" have long term functional and/or to a lesser extent neurologic difficulties l many people with chronic problems after mtbi do not have neurologic reasons for those problems differential diagnostic considerations in mild tbi l conversion disorder l factitious disorder l malingering l symptom magnification l hypochondriasis l misattribution bias l nocebo effect we see what we look for we look for what we know goethe key elements in analysis of mtbi cases l review acute records for clues on injury severity l look at symptoms, temporal onset and severity l check for other injuries – physical and/or psychological – that might compound disability l holistic assessment l were tests appropriately used? neurodiagnostic testing in mtbi l static imaging l functional imaging l neuropsychological testing l electrophysiological testing l laboratory markers physical exam l the physical exam findings are only as good as the person performing the exam l subtle findings tend to be missed by less experienced clinicians l most physicians do lousy musculoskeletal exams l most physicians do not take adequate histories l the "wnl" syndrome – cn ii – xii l problems with the bedside mental status exam rehabilitation programs for pcd l appropriate and prompt diagnosis and treatment l reassurance l education l support l counseling l regular monitoring l provision of compensatory strategies return to work l

KN040

SCHOOL REENTRY PROGRAM FOR CHILDREN AFTER TRAUMATIC BRAIN INJURY

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Rehabilitation Institute

INTRODUCTION

Many children after traumatic brain injury (TBI) recover relatively good but our experiences show that most of them need some special engagement in (re)entering the school programs.

AIMS

Special needs for school (re)entry after TBI depend on several factors such child's previous abilities, severity of injury, quality of rehabilitation program, support of rehabilitation team to family and home environment, including school system and specific school the child is returning to. For most of the children the school (re)entry program has to be individually adapted, gradually developed through close collaboration of rehabilitation team, family and school. Education program for children with TBI is a long lasting process because of child's development and recovery long after the injury. Some problems become evident much later due to more demanding school contents and lack of functions that mature later in development. Success in school depends as well on child's ability to adapt to new situation. Difficulties in regulating someone's behaviour can lead to maladaptation to school environment demands and pathological psychosocial reac-

tions. All experts that are involved in school (re)entry program, have to be aware of the need for individually adapted school program, regarding child's learning capacity and peer collaboration.

METHODS

Program of school (re)entry begins already in the phase of early intensive rehabilitation in rehabilitation institution. In the process of early rehabilitation program teachers of hospital school are included. They step by step work with children in collaboration with other team experts, introducing gradually school curriculum contents to individual work with the child. Before school (re)entry a team meeting with teachers from the school the child will enter, is organised. Detailed information to the teachers is given, short and long term education plans are made. One member of the team, psychologist or speech therapist is determined to be the contact expert for the school program. Team meetings of rehabilitation team and school experts are planned depending on the severity of problems, in the first year at least twice. Parents and children are invited to the meeting and asked to give their comments. The duration of follow up depends on child school success but it lasts at least 2 years.

CONCLUSION

Good cooperation of rehabilitation and school team is the key to successful school (re)entry after TBI.

KN041

EVIDENCE BASED REHABILITATION OF ADOLESCENT SCOLIOSIS: A NEW FIELD OF INTEREST FOR PHYSIATRISTS

NEGRINI, Stefano
ISICO

Scoliosis: Evidence Based Rehabilitation of Spinal Deformities: A New Field of Interest For Physiatrists Stefano Negrini Scientific Director, ISICO (Italian Scientific Spine Institute), Milan – Chief-Editor, Europa Medicophysica Traditionally the field of adolescent scoliosis and other spinal deformities treatment has been considered of exclusive interest of orthopaedic surgeons. This fact is today under question. The many different reasons include (obviously with personal as well as national differences): · the actual evolution of the orthopaedic specialty, interested mostly in surgery, and the resulting reduced attention to conservative approaches; · the treatment weapons of conservative approach to scoliosis patients include mainly bracing and exercises, and both these fields are traditionally of big interest for our specialty; · the complex bio-psycho-social needs of scoliosis patients and their families, during a difficult age such as adolescence, can be fully answered by the specialty that developed ICF and looks at the patient and person in its entirety; · finally, the wide team involved in the treatment to reach a good efficacy include the ability to coordinate adequately this team to reach good results. In this paper we will explore these points, looking at what consequently is happening in the scientific world, where it is recently born Scientific Society (SOSORT – www. sosort. org) as well as a PubMed electronic journal ("Scoliosis" – www. scoliosisjournal. com) devoted to conservative approach to scoliosis, with a mix of specialties (including physiatrists), professionals but also patients. Today this field of scoliosis treatment is evolving, and there is the real need of an higher attention from rehabilitation specialists, even if the difficulties involved and the experience needed to effectively treat adolescent scoliosis require to conjugate the rehabilitation approach to a strong disease knowledge. We suggest not to make of this field only a matter of specialty, but mainly of knowledge: this relate to the disease, but also to its consequences and how to face them. Treatment should be carried on by experts of scoliosis, but also of rehabilitation, including the complete attention to the full person, in all its bio-psycho-social needs, as well as the ability to perform adequately in team, involving all people needed to treat effectively the patient (orthotists, physios, psychologists, trainers, the family and the patient itself).

KN042

INDICATIONS FOR THE APPLICATION OF SPINAL ORTHOSES

DEVERCERSKI, Gordana

Orthotic prescription is common empiric practice, although there is no scientific evidence to substantiate its efficancy. Spinal othoses are used in tretament of spinal pain, spinal trauma and, predominantly, spinal deformities. Orthoses reduce pain, provide external support (added stability), prevent deformity during healing or treat different congenital or acquired defformities. Although the mechanism of pain relief remains controversial, most clinitians believe that they limit the range of movement and minimize faulty muscle action, thus lessenig the pain. Using orthoses in treatment of spinal deformities is also controversial, but largely benefitial. The duration of time that an orthosis is used depends largely on the function it's serving for. Prolonged use of pain-reducing orthoses is associated with psychological dependence and physical changes (muscle weakness and joint stiffness). Spinal deformities, on the other hand, demand long-term treatment. Most commonly used orthoses for reducing spinal pain are cervical collars, thoracolumbosacral orthoses (TLSO) and lumbosacral orthoses (corsets and rigid orthoses). Orthoses used for nonsurgical treatment of spinal injuries and external immobilization after surgery are all formerly mentioned, as well as cervicothoracic orthoses (CTO), halo- vest apparatus and different braces. As

new and better methods of internal fixation of the spine have been developed, the need for rigid external immobilzation has decreased. Treatment of spinal deformities: idiopathic, congenital and neuromuscular scoliosis and Scheuermann's disease includes mainly usage of cervicothoracolumbosacral orthoses (CTLSO-Milwaukee brace), TLSO orthoses and seating devices. The care must be individualized to the patient and carefully monitored for orthotic fit and curve response. It is of the utmost importance that the patient (especially teenager) understands the necesity and benefits of such treatment and accepts it without reserve. An orthoses should pe part of a comprehensive plan of management, which may enclude special exercise program, ergonomic education and other conservative treatment, with or without medication. As hard it sometimes is to convince the patient about the necesity of wearing orthoses, its removal may be even harder to perform. Therefore, all changes must be performed gradually, with patient as an active subject in treatment, cooperative and fully informed about his condition.

KN043

FUNCTIONAL ANATOMY AND THE TREATMENT OF THE FACE WITH BOTULINUM TOXIN

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In our everyday practice in a Rehabilitation Center, we frequently see patients who, because of their basic pathology, present with functional and aesthetic changes in their faces. The most commonly seen pathologies include dystonias, hemifacial spasm, blepharospasm, and the sequels of central and peripheral facial paralysis of diverse etiologies. Global approach for these patients includes rehab treatment on the face, which not only furthers functional improvement, but also contributes for aesthetic improvement and, therefore, for the individual's quality of life – the rehab treatment program's final goal. We should remember that the muscles in the superior portion of the face, in addition to representing expression muscles, play a fundamental role in the visual accommodation, whether to protect against light (photo-protection and photophobia) or to help accommodate vision, particularly in older people who need to wear lenses. In the transition phase from or to wearing lenses, the visual accommodation promoted by these extrinsic muscles is fundamental. The medial and inferior thirds of the face, particularly the malar muscles, are involved in the vast majority of pathologies (dystonias, hemifacial spasm, and sequels from facial paralysis). Because they change the position of lips and the smile, they show to be very important, not only in functional, but also in aesthetic terms. We should not forget that platysma muscle is involved in most of the cases of hemifacial spasm, and approaching it is very important when treating such affection. Approaching these muscles is very difficult, and asymmetry – even in a low degree – often persists even after a successful treatment. In some cases, only an electromyographic exam and an electro-stimulating approach can provide physicians with assurance to perform some diagnostic and/or therapeutic procedure. Botulinum toxin therapy in these cases is, now a day, an important form of treatment and the physiatrist need to know the functional anatomy to amount the best results. In these lecture we will discuss about the importance of functional anatomy of the face for the treatment of different affections and the treatment with botulinum toxin in terms of rehabilitation of those patients.

KN044

CLINICAL ASSESSMENT OF SPASTICITY: SYSTEMATIC REVIEW AND DEVELOPMENT OF THE REPAS
(REsistance to PASsive movement scale)

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PURPOSE

(A) To characterise clinical assessment methods for spasticity and/or its functional consequences. (B) To develop and validate a new summary rating scale for spasticity based on the Ashworth scale, the REPAS (Resistance to PASsive movement scale)

METHOD

(A) Systematic literature search and manual-based two-step review process of psychometric properties of clinical assessment scales for spasticity and associated phenomena, as well as of functional scales with an association with spasticity. (B) Cross-sectional study with thirty-three neurological patients with central paresis. Two REPAS assessments with a one week interval by two independent raters. Concurrent assessment of the Motricity Index, Box-and-Block test, Functional Ambulation Category, Timed walking, Barthel Index, Disability Rating Scale, Carer Burden Scale, and Hygiene Score.

RESULTS

(A) Twenty-four clinical scales that assess spasticity and/or related phenomena as well as 10 scales for 'active function' and 3 scales for 'passive function' with an association with spasticity could be identified. Some evidence signals that a high interrater reliability of the Ashworth and modified Ashworth scales can be achieved, however not in all circumstances. For many scales, reliability data is, however, missing. Information about construct validity can promote our understanding of what individual scales are likely to assess. Many scales have been able to document changes after therapeutic intervention. (B) Twenty-six of 52 REPAS items fulfilled the item selection criteria.

The final version (REPAS-26) showed a high internal consistency, inter-rater and test-retest reliability (correlation coefficients >. 87, no significant difference between raters or with test repetition). Reliability of the arm subtest was similar, of the leg subtest somewhat lower. REPAS-26 scores were moderately associated with basic ADL competence and a carer's burden with arm or leg adductor spasticity. The REPAS-26, arm subtest scores, degree of arm paresis and gross manual dexterity showed a moderately high association.

CONCLUSIONS

(A) The collated evidence can guide our clinical decision about when to use which scale and can promote evidence-based assessment of spasticity and related clinical phenomena. (B) The REPAS-26 is a reliable and valid summary rating scale for resistance to passive movement.

KN045

QUANTITATIVE ASSESSMENT & COMPREHENSIVE MANAGEMENT OF SPASTICITY

YAVUZER, Gunes

Spasticity is one of several components of the upper motor neuron syndrome, characterized by muscle overactivity, reduced inhibition of flexor reflexes, weakness, and loss of dexterity and fine motor function. The muscle overactivity results in limb stiffness and muscle spasm, to which there is both a neurogenic and a biomechanical component. Spasticity can be very disabling, impairing motor performance and activities of daily living, such as walking, the proper use of arms and hands, and, in addition, it may provoke painful spasms and contractures. In this way it has a great impact on the patients' quality of life. The measurement of the spasticity is important for determining the goals of intervention as well as the outcomes of rehabilitation. When spasticity produces a clinical disability by interfering with posture, motor capacity, nursing or daily living activities, medical treatment is recommended. The treatment of spasticity should be addressed by a multidisciplinary team, covering the full spectrum of neuroscience. Good management depends on an understanding of their role and application in relation to the needs of individual patients. It is mainly indicated when the muscle overactivity is diffusely distributed and should be implemented early, to prevent permanent musculoskeletal deformities or contractures. The aim of the treatment is to prevent provocative factors, treat muscle overactivity and prevent complications by decreasing spinal reflex excitability via reducing the release of excitatory neurotransmitters, or by potentiating the activity of inhibitory inputs. A variety of antispasticity interventions have been in use to improve function. They include traditional physiotherapy (with a range of motion-stretching exercises and splints or orthotics), oral medications, neurolytic blocking agents (such as phenol or botulinum toxin A), orthopedic surgery (in particular tendon-lengthening procedures), intrathecal baclofen pumps and selective dorsal rhizotomy. Evaluation of the efficacy of these drugs is determined by the therapeutic objectives which may be biomechanical, or functional. Spasticity can be measured using clinical scales or biomechanical and neurophysiological techniques. In clinical practice, spasticity is measured using clinical scales such as Ashworth and Tardieu, however, more objective, quantitative and robust measures are required. The Wartenberg Pendulum Test has been devised for measuring spasticity at the knee, but has been shown to be unsuitable for measuring more severe spasticity. Powered systems and stress induced EMG responses have been used in research studies, but are rarely considered suitable for routine clinical use. Quantitative gait analysis may have an important role to play in assessing spasticity since there are clear associations between lower limb spasticity and gait problems. Quantitative and reliable measures will serve both clinicians to monitor the progress of patients and to assess the treatment outcome and researchers to investigate the pathophysiology and new interventions.

KN046

SPASTICITY AFTER BRAIN INJURY: BENEFITS OF BOTULIN TOXIN

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This double-blind placebo-controlled trial investigated whether serial casting combined with botulinum toxin (BoNT-A) reduces the development of lower limb spasticity after severe head injury. Of the thirty-five adults (17-70 years) enrolled after meeting the entry criteria following the admission of 253 successive patients to a UK acute general hospital with severe brain injury, 88% developed spasticity within 14 days of injury. Patients were randomised to receive standard physical treatment (Group I), lower leg casting plus injections with either saline (Group II) or BoNT-A (Group III) into the gastrocnemius and soleus muscles. Assessments comprised the range of passive ankle dorsiflexion at entry and up to 12 weeks post-treatment, Glasgow Outcome Score (GOS) and modified Ashworth Score (MAS). Results showed the mean range of improvement in the angle of passive ankle dorsiflexion was 4. 59o (controls), 11. 69o (cast and saline) and 13. 59o (cast and BoNT-A) ($p<0.05$). Active treatment resulted in improvements in the MAS (Group II: $p<0.03$, Group III: $p<0.04$), but not in controls ($p>0.05$). BoNTX rescue treatment benefited Group I and II patients with persistent plantarflexion deformities. In conclusion, active intervention with casting prevents talipes equinovarus deformities in brain injury patients losing ankle movement. The role of additional BoNT-A seems to enhance this but needs further investigation. Financial support

was provided by Allergan and 3M Products through an unrestricted financial grant. Keywords: Head injury, lower limb spasticity, botulinum toxin

KN047

TEACHING MFR in UNIVERSITY - HOW CAN WE MANAGE?

SOARES BRANCO, Pedro; FILIPE, Fernanda; CARVALHO, Fatima
HOSPITAL CURRY CABRAL

The authors describe their own experience in teaching Physical Medicine and Rehabilitation to medical students and debate the importance of this activity and how it fits in with the hospital medical career.

KN048

QUALITY MANAGEMENT IN PRM. A MEDICAL PERSPECTIVE.

BECKERT, João; CADETE, Ana; VERA CRUZ, Carla

Under the general quality policy of the Grupo José de Mello Saúde in the year 2005 the Department of Physical Medicine and Rehabilitation of the Hospital CUF Descobertas, Lisboa, implemented and now operates a Quality Management System which complies with the requirements of BS EN ISO 9001: 2000 and holds the certificate No FS 53400 registered by the British Standards Institution. In this communication we present some of the principal factors that, in a medical point of view, were considered to be the most important to implement a QMG. Those factors were: The identification of processes; the identification of the decision points; the description of procedures. The selection of the different techniques used for the acquisition, treatment and analysis of data has been oriented for its continuous improvement in the QMG. As an example we show some graphical results of the statistical control processes, some graphical results of the forecast modeling and some performance indicators of quality improvement. This work was stimulated and supported by the management structures of the Hospital CUF Descobertas, and was presented to the award "Prémio de Qualidade da Fundação Amélia de Mello"

KN049

THE ROLE OF PRM IN EUROPE

WARD, Anthony

PRM in Europe has a long history in continental Europe and, with 13,000 specialists and 2,800 trainees, is recognised in every country of the Union of European Medical Specialists (UEMS)1. The term 'Physical Medicine' is still used in some countries, where it represents a different activity from Rehabilitation Medicine. Rehabilitation Medicine in northern Europe concentrates on multi-professional/multi-disciplinary specialist rehabilitation in the fields of trauma, pain and disabling musculoskeletal and neurological conditions. The three pan-European PRM organisations are quite different in their aims, but have a good cross representation to ensure good communication. (i) the statutory UEMS Section of PRM is under the responsibility of the EU Commissioner of Health. Its membership includes the 25 EU members and Switzerland, Norway and Iceland. It aims to promote and harmonise the specialty in a professional capacity and through specialist training and continuing professional development through revalidation. It works to develop clinical standards and to facilitate the professional development of the specialty. It is accountable (as with other specialties) to the UEMS and has started to work closely with the European Commission and the Council of Europe. There are three committees under the Executive; the Training and Education Committee (the European Board of PRM), the Clinical Affairs Committee for service quality and standards) and the Professional Practice Committee for defining and presenting PRM. (ii) the European Society of PRM is concerned with research and teaching in PRM in Europe and organises biennial scientific congresses in the field. The society offers free individual membership to all eligible PRM specialists and federated membership members of the national PRM societies in Europe. (iii) the Académie Européenne de Médecine de Réadaptation is a body of up to 50 senior doctors in the specialty across Europe. Academicians are invited on the basis of their distinguished contribution to the specialty, particularly its humanitarian aspects. The aim of the Académie is promote education and research across Europe, acting as a reference point in scientific, educational and research matters, exchanging ideas and information, facilitating the exchange of PRM doctors between different countries and engaging in moral and ethical debate. The Académie gives an annual prize to encourage original research in the field of PRM by young researchers.

KN050

RETHINKING REHABILITATION - CHALLANGES AND OPPORTUNITIES

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Centro de Medicina De Reabilitação do Alcoitão

Rehabilitation Medicine arose about 60 years ago, when society was confronted with the need of taking care of young men injured during World War II. At that time PMR was formally organised and went through a period of great development. Rehabilitation services were designed to help a specific group of individuals to develop their potential and to achieve a life as normal as possible. The physical problems were the main concern, and rehabilitation programs aimed to restore the individual capacities, having normality as a pattern. The global mutations that occurred on the last decades, promoted by scientific and technological advances

imposed changes in all domains of society. This paper addresses some of the issues that are shaping rehabilitation nowadays, such as changes in demographics and epidemiology of diseases, raising patients' expectations, increasing costs of rehabilitation care and also the difficulties in establishing boundaries between PMR, other medical specialties and various rehabilitation professionals. Some contextual changes which have occurred in the last years in concepts, mentalities, and policies related to disability and rehabilitation will be pointed out, as well as the benefits of technological evolution as a tool for enhancing social inclusion of people with disabilities. On the edge of the 21 century, new perspectives for PMR are emerging on this context. Rehabilitation is requested to enlarge its field of intervention. The broad scope of the specialty makes it ever more needed to complement other clinical specialties as well as to interface with different professionals. Concerning accessibility to all environments, technological developments within the Information Society will certainly contribute to empower people,regardless their condition, in their everyday life activities. They are certainly a fundamental tool to enhance the rehabilitation field of intervention, to decrease dependency, to promote productivity of people with disabilities and to improve their self-esteem and quality of life. A new paradigm for rehabilitation is emerging reflecting a shift in concepts. Disability is no longer viewed as merely the result of impairment. The social model of disability has increased awareness that environmental barriers to participation are major causes of disability. This approach involves not just people with disabilities and their families' but the whole society. There is still a long way to move from concepts and models to attitudes and practices towards disability. This is a demanding, challenging and long process, requiring the participation of us all. Rehabilitation professionals' along with the disability community are specially requested to play an important role on transforming social understandings of disability. The shift on the perception of disability implies new approaches and new models of intervention in rehabilitation which are being shaped by the interaction of clinical, social and economical factors. To enhance a political investment in rehabilitation seems crucial, and is needed to demonstrate that it's less expensive to rehabilitate than to pay long term for dependency, considering that costs are not just economical but social and human as well.

KN051

JOINT AND BONE PAIN.
IS THERE A NEUROPATHIC PAIN COMPONENT?
IMPLICATION FOR REHABILITATION

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Salvatore Maugeri Foundation

In a recent European survey chronic pain related to degenerative bone and joint disease represented more than 34% of all the the most common causes of chronic pain. Bone and joint pain is commonly attributed to the presence of an inflammatory process even when there are no clinical as well as laboratory perceivable signs of inflammation. It is also usually recognized that a sensitization of nociceptors in inflamed periarticular soft tissues can concur to maintain pain in bones and joints. A neuropathic pain component in joint and bone pain is seldom taken into account scotomizing the potential contribution of intrinsic bone innervations. Long bones have a quite distinctive double sensory innervations with two different destinations: some fibres innervate the periosteum and synovial soft tissues while some others enter the medullary canal of the bone, travel in bundles within the marrow, and end within the Haversian canals of the bone matrix. When cartilage is eroded in osteoarthritis, mechanical force can acts directly on nociceptive nerve endings in the subchondral bone generating pain without the substantial presence of inflammatory processes. Niv and Devor recently put attention on the analogies in the structure and innervations of articular bone ends with that of teeth. In dental pain an important source of sensory nociceptive inputs derives from the intrinsic innervations of dentine and the root canal. In the same way, pain on weight bearing in osteoarthritis and in others degenerative conditions may be due to compressive forces applied to the innervations of subchondral bone when exposed by erosion of the overlying cartilage. The presence of an important neuropathic pain component in bone and joint pain can therefore differently address the choice of different class of drugs and it should be considered when planning a rehabilitation strategy especially if physical treatments are used.

KN052

TREATMENT STRATEGIES FOR BACK PAIN-WHERE DO WE STAND?

SCHNITZER, Thomas J.

Usually pain is the consequence of an acute injury and/or inflammatory process, and alleviation of the noxious stimulus or control of the disease process driving the inflammation eliminates the pain. However, the etiology of chronic pain is less clear, slowing the development of new therapeutic approaches. Well described peripheral and spinal cord alterations observed in chronic pain remain the primary targets of current interventions. However, recent studies have shown that the brain also is involved in chronic pain, reflected in cognitive as well as localized morphologic and metabolic changes unique to chronic pain (Apkarian, 2004). These developments provide an opportunity to evaluate effects of existing therapies as well as develop new approaches to pharmacologic intervention. Low back pain is a common public health problem affecting between 70-85% of adults at some time in their life (Frymoyer, 1989) and is the largest single

cause of absence from work (Frank, 1993; Maniadakis & Gray, 2000). The goal of treatment of chronic low back pain has been relief of pain, restoration of physical function and the successful maintenance and/or reintegration of the patient into the workplace and society. A broad range of management options have been advocated but what is notable is the lack of well-designed and appropriately conducted clinical trials to evaluate the efficacy of these treatments (Schnitzer, 2004). Recently defined safety issues concerning NSAIDs and coxibs have limited their use in all painful conditions, including back pain, particularly in the elderly with co-morbid conditions and when used on a long-term basis. Updated management guidelines that consider these new data have only begun to be published. The most recent evidence-based guidelines for the management of back pain recommend the use of weak opioids or combinations of weak opioids with simple analgesics in low back pain; NSAIDs, because of their side-effects, should only be used at the lowest necessary doses and for short-term periods. This is in line with the updated recommendations of the Working Group on Pain Management (2006) where paracetamol/weak opioid combinations (e. g. paracetamol/tramadol) are among first-line recommendations for moderate back pain, supported by a high level of evidence. The majority of low back pain can be considered to arise due to mechanical causes, with many people presenting with neuropathic components, classically classified as radiculopathy. Few if any studies have evaluated patients with a neuropathic component to their back pain, and newer drugs approved for the treatment of neuropathic pain have not been evaluated in rigorous studies of chronic back pain associated with a neuropathic component. Taken together, this has resulted in the widespread use of treatments of unproven benefit or the inappropriate use of treatments of proven benefit. The availability of an effective oral treatment that would have benefit with minimal risk, particularly in the relevant group of patients with mixed back pain, would be clinically meaningful. The fixed combination of weak opioids (e. g. tramadol) with other types of analgesics (e. g. paracetamol) is a rational approach, taking into account the fact that pain has multiple aetiologies and mechanisms to be targeted. By acting on multiple pain inhibitory pathways, combination analgesics can provide more effective pain relief, and may also lead to an improved side effect profile. Many of the currently used combination analgesics combine paracetamol due its excellent safety profile with a weak opioid (e. g. tramadol) to achieve multi-modal analgesia. Tramadol, which has been shown to be effective in neuropathic pain, offers potential advantages over traditional opioids in combination therapy because its unique mechanism contributes to its favourable chronic safety profile Overall, combinations of analgesics with different mechanisms of action based on rational pharmacokinetic and pharmacodynamic criteria are a useful addition to the armamentarium of managing challenging pain conditions such as low back pain.

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KN053

MESOTHERAPY IN SPINE PAIN

FOTI, Calogero

Mesotheraphy (MT) is a widely used therapeutic method suitable for painful disorders of muscle-skeletal system developed since 1952 by a French physician, Michel Pistor. MT consists on multiple injections of a variable mixture of drugs in the intradermal layer of the skin locoregionally to the affections, by a special needle, Lebel needle, 4-6 mm. The results are obtained by: pharmacological action of the drugs, reflexogenic action (gate control and role of endorphins) evoked by the same needle's puncture, activation of the neuromodulators of inflammation, immunologic action on SRE. MT has shown some clear advantages: injection of lower doses of drug; prolonged and quick therapeutic action; the reaching of the clinical target; lower amount of adverse effects. The efficacy of MT is potentiated by association with physical therapy; MT determines the improvement of the patient's compliance and his following adherence to the therapeutic exercise. In PRM Ambulatory of Policlinico Tor Vergata (Tor Vergata University, Rome, Italy) Physicians do 40 treatments per day; spine pain is the most relevant target. Treatments are made in tree local regions: neck, dorsal, back ones. The multiple injections are made by one single needle on the skin upon the paravertebral and spinal regions. We use three lines for every region. The nurse prepare the cocktail that the Physiatrist prescribe after the examination of the patient. Must keep great attention to the disinfection of the skin. we use mother mixture (Physiological Solution + anaesthetic); mother mixture + drugs (frequently only with one drug); without drugs (only Physiological Solution, in allergic or intolerant patients); dry (no agents inoculation, for acupuncture effects). In conclusion MT is a very simple medical (physiatrist) practice, useful in the control of spine pain. Its characteristics of cheap and easy applicability, and its good result and compliance made MT a very useful instrument in the Physiatrist clinical practice.

KN054

MULTIDISCIPLINARY PAIN CLINIC COST EFFECTIVENESS AND EFFICACY

GRABOIS, Martin

This presentation is an objective review of the literature on chronic pain and a review of published research reports to draw conclusions about the efficacy of various treatment modalities. While clinical judgment represents a significant contribution to the rationale for current clinical practices it does not replace scientific evidence of efficacy. Medical rehabilitation of patients with chronic pain is most often provided by an interdisciplinary team of qualified health professional. Pain is one of the most frequent symptoms that brings a patient into the health are system for evaluation and treatment. It ranks perhaps as the most frequent cause of suffering and disability. Many pain syndromes are self-limiting and thus resolve without formal diagnostic testing or treatment. However, because of the significant numbers involved, the unresolved pain syndromes are extensive, costly and lead to significant impairment and disability.

KN055

STRENGTH TRAINING IN A GERIATRIC REHABILITATION CENTER– PHYSICAL THERAPY IN THE FITNESS ROOM

BURSTIN, Arie; BROWN, Riki
Beit Rivka Geriatric Rehabilitation Center

Background: Ageing and non active life style cause decrease in muscle mass and force. This is one of the reasons of functional decline in the elderly population. The problem becomes crucial during hospitalization, even in a rehabilitation department. According to Fiatarone (1990), the strength loss in an inactive week can be between 5 to 10%. Sager, et al (1996) emphasize the connection between inactivity and functional loss (Deconditioning). Only 50% of the elderly discharged form acute wards regain their premorbid functional abilities 3 months later (Brown, el al 2004). Rational: Patients are referred for rehabilitation after different conditions and pathologies: fractures, joint replacements, acute neurological diseases, amputations, etc. Weakness is one of the most important limitating factors when planning the rehab process. During the conventional therapy, the volume of strength training is not sufficient to induce neurogenic or physiologic muscle adaptation (Patterson, et al 2005). It's known that following inactivity and immobilization, almost any vigorous activity will improve strength. However, the best effect is achieved with the implementation of a well planned fitness program, which combines aerobic and strength training. The presentation will deal with several issues regarding the treatment in the fitness room: • The scientific evidence of the benefits of strength training alongside conventional treatment • Choose of appropriate equipment • Selection of relevant exercises using adequate technique • Current and updated recommendations concerning the frequency, intensity, and duration of the rehabilitation treatment in the fitness room • Protocols regarding the speed, relevant range of motion and progress of the different exercises • Transfer to functional gains

KN056

CHRONIC PAIN MANAGEMENT IN THE ELDERLY

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Pain is very common in older people, and studies are increasingly focused on the subject (1-3). Prevalence estimates range from 25% to 50% of community-dwelling elderly people to 45% to 80% of nursing home residents. What is chronic geriatric pain? There is currently no consensus in the medical community as to a strict definition of the term geriatric with age limits. The US National Library of Medicine does offer the following definitions: Geriatrics: The branch of medicine concerned with the physiological and pathological aspects of the aged, including the clinical problems of senescence and senility. Young old: 65 to 74 years of age Old-old: 75 to 85years of age Oldest-old: 85 years of age or older Frail elderly: these groups include many of the ``so-called`` frail elderly, with a disproportionately high prevalence of disabilities and consumption of health services (4). The International Association for the Study of Pain (IASP) has defined pain as, ``an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage``. Similarly, chronic pain was described temporarily as pain that has persisted ``past the time of healing`` or for more than 3 months. Chronic geriatric pain is, therefore, an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage for persons who are either 65 years and older, or 75 to 85 years of age (old-old), or 85 years of age and older (oldest old) and who have had pain for greater than 3 months. Demographics The context for the increasing interest and concern about health-care needs of older adults is found in demographic projections of an expanding elderly population in the United States and other developed countries. The annual growth rate of the elderly population was 2,8% since 1994, whereas the average growth rate for total world population of all ages was 1,6%. (5) Current projections indicate that 80 million, or one of every five americans (21%) will be 65 years of age or older by 2030. The peak growth of older persons is predicted to occur between 2010 to 2030, when the majority of baby boomers will turn 65, creating ``the elder boom`` (6). Epidemiology Manton and colleagues performed multivariant analysis on a National Long-Term Care Survey (NLCTS) which resulted in extraction of six uni-

que disability profiles from 27 different measures of functional limitation. (7) Functional limitation refers to difficulty in performing personal care and home management tasks. Such limitations among the elderly are very important, as they measure the ability to live independently and are used as indicators in determining the level of health care resources and costs needed for this age group. In fact interventions designed to enhance both functional abilities and support caregivers have been shown to be cost-effective, leading to fewer hospitalizations and greater degrees of independence along with a lower mortality. (8) The scale used to measure the ability to perform physical tasks related to personal care is called activities of daily living (ADL) and refers to such activities as eating, bathing and toileting. Instrumental activities of daily living (IADL) measures more complex task, such as managing personal finances, shopping, cooking, and so forth. Six disability profiles have been classified by Manton`s group (7): Type I (unimpaired) persons with a few physical limitations Type II (healthy) persons with minimal physical limitations Type III (IADL and physically limited) Type IV (IADL and cognitively impaired) persons with 42,9% and 47,4%, respectively, of the total number (27) of limitations Type V (ADL limited) persons with more ADL limittions but fewer IADL limitations Type VI (frail) patients with the most number of limitations Causes Rheumatological diseases are by far the most common medical problem affecting the elderly and generating pain, even when broken down among the different disability profiles. An exception is the frail (Type VI), in whom the probability of occurrence matches that of circulatory problems. Many other studies have also verified that the predominant cause of pain in the elderly is, by far, musculoskeletal (i. e., rheumatoid arthritis, osteoarthritis); the second most common source of pain is due to cancer. Rheumatological diseases are, therefore, important to the pain practitioner because these diseases are usually amenable to various treatment modalities. Approximately 80% of all cancer patients suffer from pain, and cancer is the second leading cause of death in the elderly next to heart disease. It is apparent that the pain specialist can have an effect on the first and second causes of death which are diseases of heart and malignant neoplasms. With respect to cancer pain, the pain specialist can have a major impact on quality of life concerns, while diseases of the heart have been treated by sympathetic blocks and, more recently, by neuroaugmentation, both of which increase myocardial blood flow, increase exercise capacity, and reduce symptoms in intractable angina pectoris. Other types of pain found commonly in the elderly include herpes zoster, postherpetic neuralgia, temporal arteritis, polymyalgia rheumatica, atherosclerotic and diabetic peripheral vascular disease, cervical spondylosis, trigeminal neuralgia, sympathetic dystrophies and neuropathies from diabetes mellitus, alcohol abuse and malnutrition. Although much work has been published on both cancer pain and acute postoperative pain, much less attention has been given to chronic, nonmalignant geriatric pain. Musculoskeletal pain More than 80% of older Americans suffer from various forms of arthritis (e. g., osteoarthritis and rheumatoid arthritis) and most will have acute pain at some time. Musculoskeletal pain is the most common complaint among patients taking analgesics: a. 43% arthritis; b. 31%, other bone and joint conditions, such as upper back pain, pain caused by knee injuries, hip pain or fractures, and muscle pain or stiffness and neck pain, not including low back pain; c. 16% low back pain Pain assessment The elderly report that the VAS is more difficult to complete and is a poorer description of pain than scales made up of verbal descriptors (Herr & Mobily 1993). Research is needed to elucidate the reasons for these difficulties. Although these data are preliminary, taken together they raise important problems for the use of the VAS with the elderly. The assessment of pain in the elderly should include a verbal descriptor or numeric rating scale measure of pain intensity and the McGill Pain Questionnaire (MPQ) in either its original or short form. Larger studies are needed to assess the psychometric properties of these scales across the adult life span, especially the factors which hinder appropriate use of the VAS by the elderly. As with younger patients, comprehensive assessment of the elderly person with pain should also include physical disability interference of pain in the performance of daily and/or desired activities, and psychological distress. Self-report and objective measures of many of these constructs are in frequent use in both the research and clinical setting. However, more studies are needed to validate these measures for elderly pain patients. Affective dimension The affective dimension in elderly chronic pain assessment includes determining the degree of anxiety and depression present. Although studies vary, older people generally have lower anxiety levels than their younger counterparts whereas depresion shows no age difference. several scals can be used to assess depression: 1) Geriatric Depression Scale (GDS), 2) the Hamilton Rating Scale for Depression (HRS-D), and the Zung Self-rating Depression Scale (SDS). Pain asessmentalso includes determining the patient`s coping skills to relieve pain and how effective these skills have been. Treatment modalities for the elderly pain patients includes: Pharmacotherapy Interventional pain management Physical therapy Psychological modalities By far the most commonly employed modality for geriatric pain control is pharmacotherapy. In realizing the frequent overlap between chronic geriatric pain syndromes and cancer pain it is instructive to follow the World Health Organization (WHO) approach to drug therapy: by mouth, by the clock, for the individual, with attention to detail, by the ladder. The guiding principle of the ``analgesic ladder``is that analgesics are selected according to severity of pain. Therefore, the WHO recommends the following: 1. For mild pain, the relatively safe analgesic acetaminophen (i. e., with fewest

known side effects) is an appropriate first choice. 2. 2. For mild to moderate pain or pain uncontrolled with acetaminophen, the application of NSAIDS is appropriate. 3. For pain conditions refractory to NSAIDS treatment or rated as moderate at outset, a weaker opioid (e. g., codeine) is an appropriate first choice. Other weaker opioids include hydrocodone, propoxyphene, and oxycodone in combination with acetaminophen. 4. For pain refractory to these weaker opioids or for pain initially rated as severe at outset, a pure opioid agonist (e. g. morphine) is selected. Other drugs in this class include hydromorphone, fentanyl, levorphanol, and oxycodone. Consistent with both the WHO pain treatment continuum for geriatric pain and the first recommendation in the American Geriatric Society guideline is the proper diagnosis and etiology of the pain syndrome affecting the chronic geriatric ain patient Invasive pain treatment modalities offer the advantage of determining the precise cause of the pain process via the use of diagnostic nerve blocks. One the pain syndrome affecting the patient has been determined, the patient and practitioner can mutually decide on a treatment course, which may include systemic medications, cognitive-behavioral therapy, physical therapy, or additional invasive pain procedures. Often a combination of invasive procedures (nerve blocks, chemical neurolysis, radiofrequency lesioning, cryoneuroysis, neuroaugmentation, neuraxial drug-delivery systems) and systemic medications has the distinct advantage of reducing medication intake and its side effects. Diagnostic nerve blocks not only can help determine the origin of the pain process but also offer the patient a chance to experience what a longer lasting neurolytic or neurosurgical procedure would be like. Physical therapy and rehabilitation Is an important treatment modality for the older patient in pain. By decreasing pain and improving function, rehabilitation allows the patient to live a more independent life with enhanced dignity. This is in contrast to the rehabilitation goals of persons younger than 65 years of age in whom the primary emphasis is on obtaining gainful employment. Rehabilitation among chronic geriatric pain patients involves adapting, in an optimal way, to the loss of physical, psychological, or social skills they once possessed prior to complaints of chronic pain. The rehabilitation process of the chronic pain patient proceeds in an orderly fashion with the following objectives: stabilize the primary disorder whenever possible, prevent secondary disabilities whenever possible, decrease pain perception employing a multidisciplinary approach, treat functional deficits, promote adaptation between the person to the disability, the environment to the person, and the family to the person. Rehabilitation requires a multidisciplinary approach in both assessing and treating the geriatric chronic pain patient. The multidisciplinary team is composed of a pain specialist, psychologist, and (depending on the disability) a speech or language therapist, occupational therapist, physical therapist, or recreational therapist. Psychological modalities Cognitive-behavioral interventions utilize both cognitive therapy and behavioral therapy in treating geriatric pain patients. Patients are taught a variety of skills that include: relaxation training, activity pacing, distraction techniques, calming self-statements (cognitive restructuring), meditation. References: 1. Ferrel BA. Pain management in eldrrly people. J Am Geriatr Soc 1991; 39: 64-73 2. Ferrel BR, Ferrell BA, eds. Pain in the elderly: a report of the task force on pain in the elderly of the International Association for the study of pain. Seattle: IASP Press, 1996 3. AGS Panel on Chronic Pain in Older Patients. The management of chronic pain in older persons. J Am Geriatr Soc 1998; 46: 635-651 4. Schneider EL, Guralnik JM. The aging of America: impact of health care costs. JAMA1990; 263: 2335-2340 5. Hobbs FB, Damon BL: US Bureau of the census. Current Population reports, Special studies, P23-190, 65+ in the United States. Washington DC1996, 224-227 6. Hobbs FB, Damon BL: US Bureau of the census. Current Population reports, Special studies, P23-190, 65+ in the United States. Washington DC1996, 23-190 7. Manton KG: Chronic morbdity and disability in the US elderly populations. In Mostofsky DI, Lomranz J, eds: Handbook of Pain and aging. New York, Plenum Press, 1997, 37-67 8. Rubenstein LZ, Josephson KR, WeilandGD, et al: Effectiveness of a geriatric evaluation unit: A randomized clinical trial. N England J Med 31: 1664-1670, 1984

KN057

ASSESSING FAMILY INVOLVEMENT IN PHYSICAL RE-HABILITATION.

VIEIRA DA SILVA, Cristina

Escola Superior de Saúde do Alcoitão

The importance of the family involvement to the rehabilitation process of people with different pathologies will be analysed. It will be, also, presented the importance of this kind of assessment in the health professionals' practice. Our aim was to study/investigate the psychometric properties of the Family Involvement Assessment Scale – FIAS (McNeill, 1997). This scale measures the health professionals' perception about the families' involvement to the rehabilitation process. One hundred and eighty nine questionnaires were filled in by different professionals working in physical or psychiatric rehabilitation fields. The Portuguese version of FIAS showed considerable psychometric quality according to internal consistency (validity and reliability). The two-axis solution presented greater stability, being different from original version, which used the three-axis solution, perfectly adjusting to the theoretical construct. Results suggest that FIAS is an important assessment instrument that might contribute to diagnose the common complex problems on long term rehabilitation processes. FIAS can be also considered a powerful instrument if used qualitative because it can provide a better knowledge of family role and its influence on the rehabilitation process.

KN058

SOCIAL SUPPORT AND QUALITY OF LIFE IN STROKE PATIENTS.

AMARAL, Susana
ABPG

INTRODUCTION

The Stroke, being a pathology of a sudden origin, has a very strong impact in the psychological way of living, not only of the sick person but also of his/her relatives. It is a neurological pathology, in which the majority of the affected people survive with several degrees of incapacity, ones which can easily be recovered from and others which install themselves definitively with repercussions in various levels (physical, functional, psychological and social).

AIMS

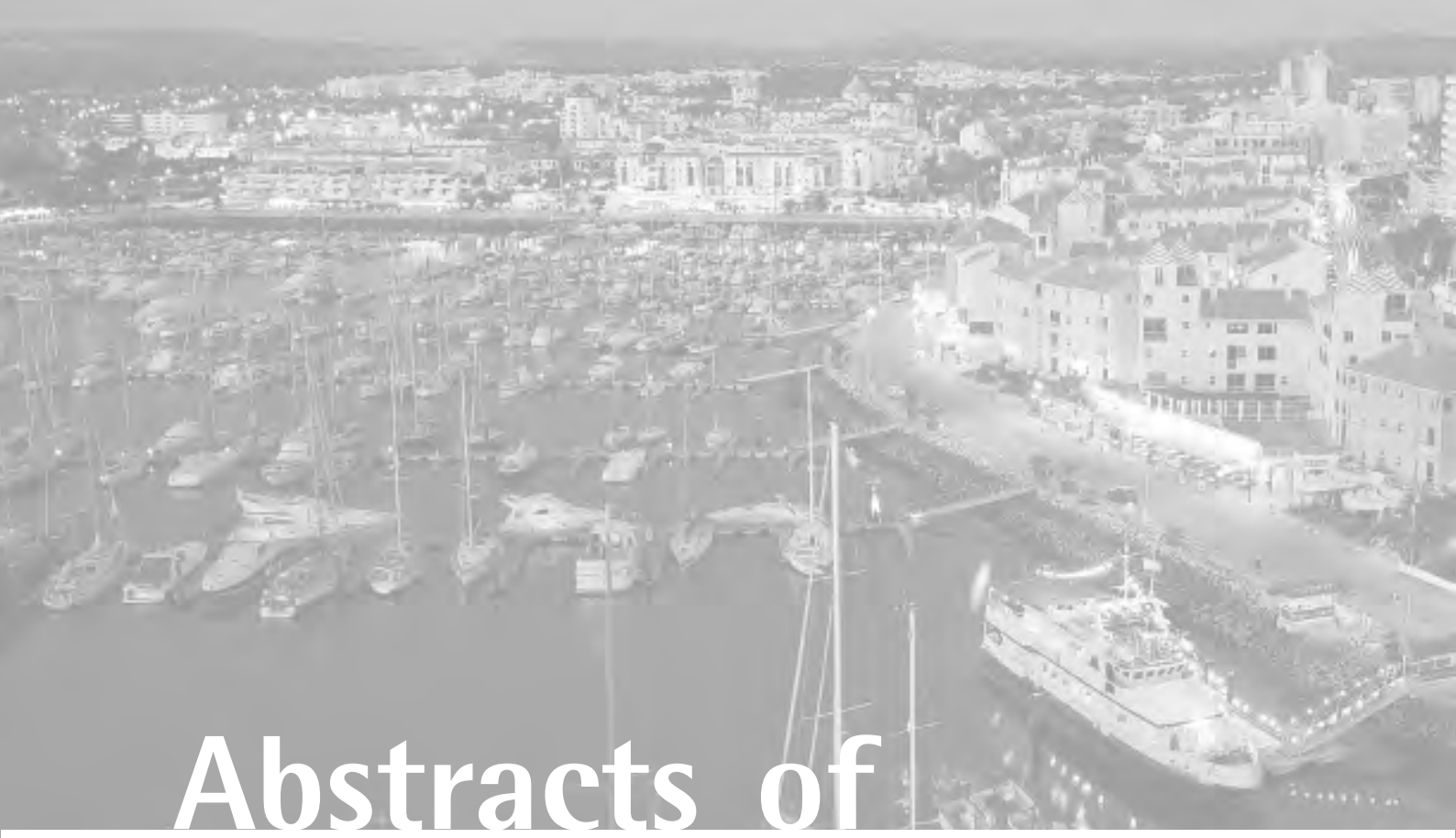
Being the Stroke the first cause of death in Portugal and presenting a high death-rate, it raises great questions to society, namely in terms of the mobilization of the economical resources and of health, as well as in the ways of intervention that lead to a minor rate of incidence and a better recovery in all the domains of the individual's well-being. In this manner, it becomes important to understand the repercussions of the Stroke in the individual, in what concerns the level of the perception of the social support, quality of life and functional independence. Methods: For this purpose, a descriptive study of exploratory nature was conducted, using several measure instruments such as a Sociodemographic Questionnaire and of Clinic Characterization, a Social Support Scale, a Quality of Life Scale and a Functional Independence Scale applied to 51 patients who have had a stroke, and carrying out rehabilitation treatments in Clínica de Medicina Física e Reabilitação of Associação de Beneficência Popular de Gouveia.

RESULTS

Of these, 70,6% are men and 29,4% are women. The age average is placed on the 65,5 years. It is a group of people with low school studies with a school attendance of 4,39 years, devoted essentially to unskilled jobs or agricultural activities. The majority, 64,7% live in a rural area. The data gathering took place in October, November and December 2004.

CONCLUSIONS

The results back up the idea that the perception of the social support, quality of life and functional independence are important and influential parts in the development of the patients with physical disabilities acquired after a stroke, showing direct and intercrossed relations. Thus, the social support and the quality of life seem to accomplish a positive effect in the individuals' functional independence, constituting important resources in the rehabilitation process.



Abstracts of Oral Presentations

OP001

RISK & INFLUENCING FACTORS FOR FALLS IN STROKE PATIENTS HOSPITALIZED FOR REHABILITATION: SURVEY OF 5 YEARS

TSUR, Atzmon
Rehabilitation Department

INTRODUCTION

Falls are one of the most frequent complications among stroke patients in rehabilitation. It therefore seems urgent to find ways to prevent falling, especially among individuals prone to repeated falls. Identifying high risk inpatients is a major task of prevention programs, and fall risk factors in different populations of stroke patients have already been studied to some. The cumulative effect of multiple risk factors would contribute more to the tendency of falls than would the potential effect of each factor alone.

AIMS

The purpose of the study was to assess the fall incidence and risk factors for patients hospitalized for rehabilitation as a result of an acute stroke.

METHODS

To provide the incidence, incidence reports of falls were reviewed at a rehabilitation department. We studied the cohort of 56 falls in 40 patients during the years 2000 – 2004. Twenty-nine patients felt once, 9 patients twice and 2 patients, 4 times. The data were abstracted from the medical and nursing records.

RESULTS

Most of the falls occurred in patients from male gender, who had a reduced muscular tone (70%), paralysis (54%) and hypoesthesia in the involved side of the body. 48% of the falls occurred during the first month after last stroke breakout, 70% during the morning or the afternoon, and 62% took place in the patient room. In 89% of falls the patients used hypoglycemics, anti-hypertensive, tranquillizers or neuroleptic drugs. Communication disorders (29%), hemianopia or blindness (21%) and visuo-spatial agnosia (18%) were incremental risk factors for falls. 50% of falls were caused by either intrinsic or extrinsic mechanism.

DISCUSSION/CONCLUSION

These data suggest that group of stroke patients who are at risk for falls within rehabilitation department, can be identified by using variety of impairment and functional assessment. The information may be potentially useful for designing interventions directed at reducing fall frequency among stroke survivors.

OP002

NEW PATHOPHYSIOLOGICAL HYPOTHESIS OF THE MOTOR PROBLEMS DISPLAYED BY CHRONIC STROKE PATIENTS.

VASA, Rajul
Mumbai

INTRODUCTION

Motor problems of stroke are assumed to be directly related to the lesion & motor recovery & motor dysfunctions are believed to be directly proportional to the size of lesion & size of the neuronal death.

AIM

To give new direction to the understanding & causes of motor dysfunction, motor recovery, reorganization of cns & plasticity.

METHOD

Chronic stroke patients video records are made to compare motor recovery & changes seen in spastic posture before & after the clinical application of the new motor concept based on patho physiology & reorganization & adaptation of cns.

RESULTS

All stroke patients showed following changes.

1) They became automatic & sub cortical in weight bearing & weight transferring on the affected leg in standing with carry over effect outside the clinical set up.
2) Step length & cadence dramatically improved.
3) In sit to stand & from stand to sit, patient no longer depended on the good arm & good leg, to take body weight
4) Spastic posture of upper limb flexion changed variedly from one patient to another, including achieving swing in the arm during walking.

CONCLUSION

This new motor concept can bring path breaking changes in the present rehabilitation strategies.

Advanced studies needed in

1) Neuro biology of spastic muscle to record increase in number of sarcomere of the chronic stroke patients treated with this concept
2) Neuro physiological & emg study of the flaccid turned active & spastic turned into normal tone treated with this concept
3) Biomechanical study & gait analysis to record the kinetics & kinematics & energy consumption study of patients treated with this concept
4) fmri study to record the brain circulation & cortical reorganization of patients treated with this concept will change the future of the stroke patient around the world in this 21st century.

OP003

EFFECT OF MIRROR THERAPY ON LOWER EXTREMITY MOTOR RECOVERY AND ACTIVITY LEVEL AFTER STROKE

SUTBEYAZ, Serap[1]; YAVUZER, Gunes[2]; SEZER, Nebahat[1]; KOSEOGLU, Füsun[1]

[1]IVth Physical Medicine & Rehabilitation Clinic, Ankara Physical Medicine and Rehabilitation Education and Research Hospital; [2]Ankara University Faculty of Medicine

INTRODUCTION

Mirror therapy creates an illusion in the brain that the involved arm or leg of the patient is moving normally by projecting the mirror image of the uninvolved limb over the involved limb.

AIM

This randomized controlled assessor-blinded trial was designed to evaluate the effects of mirror therapy using motor imagery training on lower extremity motor recovery of patients with sub-acute stroke.

METHODS

A total of 24 consecutive inpatients with stroke (mean age of 63.4 years, mean time since stroke 3.8 months), were studied. Both the mirror group (n=11) and the placebo group (n=13) participated in a conventional stroke rehabilitation program, 5 days a week for 4 weeks. The mirror group also received 30 minutes of motor imagery training program consisting of uninvolved side ankle dorsiflexion movements using a mirror, 5 days a week for 4 weeks. Main outcome measures were Brunnstrom's Motor Recovery Stages (BMRS) and Functional Independence Measure (FIM) motor score.

RESULTS

BMRS and FIM motor scores improved significantly in both groups ($p<0.05$). Between-group difference of percentage change was significant in the advantage of mirror group. Percentage of change was 58% in mirror group and 24% in placebo group for BMRS ($p=0.028$); 38% to 20% for FIM motor score ($p=0.002$).

CONCLUSIONS

In our patients with stroke, mirror therapy of the lower extremity in addition to a conventional rehabilitation program was superior to conventional rehabilitation program alone, in terms of lower extremity motor recovery and activity level.

OP004

MIRROR THERAPY FOR IMPROVING HAND FUNCTIONING IN SUBACUTE STROKE: A RANDOMIZED CLINICAL TRIAL

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[1]IVth PMR Clinic; [2]Erasmus University MC; [3]Ankara University Faculty of Medicine; [4]IVth PMR Clinic,

INTRODUCTION

In mirror therapy, the reflection of the non-paretic hand is visually superimposed on the paretic hand, creating an illusion of normal movement of the paretic hand. It has been suggested that observing the non-paretic hand at the position of the paretic hand changes the sensoriomotor input to the brain and promotes brain plasticity.

AIMS

This study compares the effect of mirror therapy in subacute stroke inpatients on hand functioning compared with a control group.

METHODS

A total of 28 consecutive inpatients with hemiparesis (mean age 62.2 years), all within 12 months post-stroke (mean time since stroke 181.9 days) were included. Both the mirror group (n=15) and the placebo group (n=13) participated in a conventional stroke rehabilitation program, 5 days a week for 4 weeks. For the same period, the mirror group received an additional 30 minutes of mirror therapy program consisting of non-paretic side wrist and finger extension movements using a mirror. The placebo group performed the same exercises, but using the non-reflecting side of the mirror. Main outcome measures were Brunnstrom's Motor Recovery Stage (BMRS), and the total self care score of Functional Independence Measure (FIM).

RESULTS

Groups were similar in terms of baseline clinical characteristics. BMRS (from 2.7 to 3.7) and the total FIM self care score (from 23.5 to 29.7) significantly improved only in mirror group ($p<0.001$). Between-group differences in change scores were significant ($p<0.01$) for both BMRS and total self care score in favor of mirror therapy. Similar results were found for all FIM self care sub-items, except the FIM hygiene sub-item ($p = 0.056$).

CONCLUSIONS

In our stroke patients, mirror therapy of the paretic arm in addition to a conventional rehabilitation program was more beneficial in terms of upper extremity motor recovery and self care activity level than a similar treatment without mirroring.

OP005

POSTACUTE STROKE CONSTIPATION TREATMENT BY AN ELECTRO-MECHANICAL NON-INVASIVE APPROACH FREE-LAX

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[1]Golden Tower Hospital; [2]ADM Ltd.

Chronic constipation, is a frequent complain in elderly (20-30%) and is a major problem in institutionalized

patients (>50%). Constipation may be secondary to dietary, metabolic or neurological causes and sometimes, primary idiophatic. Its standard treatment consists of high fiber diet, high fluid intake, regular bowel routine, enemas and laxatives. Free lax (ADM, Israel) is an electro-mechanical device which is approved for the treatment of constipation. This device applies kneading inward-outward external motion on the abdomen in a frequency range of 1.25-1.75 Hz.

OBJECTIVE

To compare a non-invasive Electro-mechanical treatment with a standard pharmaco-kinetic treatment. Study design: Combined prospective and retrospective study. Setting: The Geriatric Rehabilitation Department of the Golden Tower Hospital in Bat-Yam, Israel. Population: Thirty-tree elderly stroke patients, involved in an in-patient Rehabilitation Program, suffering from constipation. Measurements: 13 stroke patients suffering from constipation received 20 minutes of "Free-lax" therapy once daily during their hospitalization time. No laxatives were given. 20 patients were treated by standard pharmaco-kinetic drugs (Avilac 60ml/week). Patients received stable diet based on nutritionist prescribtion. Nurses filled in a daily bowel chart for every patient throughout the study. Major exclusion criteria were: abdominal surgery in last 6 months, untreated hernia, fractured vertebra.

RESULTS

Bowel movements/week were 2.3, 3, and 3.7 for Free-Lax and 2.1, 2.7 and 2.8 for control for the first three weeks of treatment. Statistical significance was 0.77, 0.35 and 0.01 accordingly.

CONCLUSIONS

External motion applied on the lower abdomen is an efficient approach in constipation treatment of stroke patients and reduces the need of pharmaco-kinetic drugs. In this preliminary study Free-Lax was found to be comparable and even better than standard medication usually prescribed No adverse effects have been observed. High level of patient and staff compliance was recorded.

OP006

CADASIL (CEREBRAL AUTOSOMAL DOMINANT ARTE-RIOPATHY, SUBCORTICAL INFARTS LEUKOENCEPHALOPHATY)

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CADASIL (Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarts and Leukoencephalophaty) is characterized by a history of migraine headaches with aura, mid-adulthood (before age 60 years) onset of cerebrovascular disease progressing to dementia, and diffuse white matter lesions and subcortical infarts on neuroimaging. This condition affects small blood vessels (granular osmiophilic material in media can often be identified by electron microscopic evaluation of skin biopsies). However these abnormalities are not always found or may only be detected after extensive analysis. CADASIL is associated with a mutation in the NOTCH3 gene. The NOTCH3 gene makes a protein, which plays a role in the development, function and maintenance of vascular smooth muscle cells. An alteration on this protein is thought to cause the degeneration of these muscle cells, leading to the loss of function of blood vessels. This condition is inherited in an autosomal dominant pattern; however a few cases of patients with new mutations in the NOTCH3 gene have been identified. Recently NOTCH3 immunostaining of tissue obtained from skin biopsy has been developed as a means of confirming the diagnosis. The prevalence of CADASIL is unknown. Worldwide, approximately 400 families have been described with this disorder (the majority has been of European origin). There are no preventive therapies, and supportive care in form of practical help, emotional support and genetic counselling alleviate the suffering of affected people and their families. T0. The authors present two clinical case reports: the first is a 58 year old female with a history of CADASIL, vascular dementia and epilepsy who had an ischaemic stroke; the second one is a 54 year old female with a clinical picture of cerebral multi-infarcts. The latter is still waiting for genetic diagnostic of CADASIL. Both patients are being submitted to rehabilitation treatment programs, in our Centre, the cognitive impairment, which characterizes this syndrome is an important limitant factor to the outcome of rehabilitation in these quite young patients.

OP007

EFFECT OF TREADMILL TRAINING ON AEROBIC FITNESS, LOWER EXTREMITY MOTOR FUNCTIONS AND AMBULATION IN STROKE

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INTRODUCTION

In recent years treadmill training was accepted as a treatment modality to improve walking in stroke patients. However, data are limited about its effects on functional outcome although encouraging results exist.

AIMS

To investigate the efficacy of treadmill training on peak oxygen consumption (VO2peak), lower extremity motor functions and ambulation in patients with stroke.

SUBJECTS AND METHODS

Patients admitted to the inpatient rehabilitation unit with firstever stroke were randomized either to a conventio-

nal physiotherapy with treadmill training group (I) or to an only conventional physiotherapy group (II). Patients were assessed by Motor Assessment Scale (MAS), Functional Independence Measure-motor subscale (FIM-m), ergospirometric exercise test, Berg Balance Scale (BBS) at baseline and at the end of study. Group I exercised on treadmill 5 days/week for 6 weeks without body weight support. Some of the patients walked by body weight support only at the beginning whenever needed.

RESULTS

21 patients in Group I and 18 patients in Group II completed the study. There were no differences between groups regarding demographic and clinical properties at baseline. There were significant improvements in all the parameters in both groups at the end of the study and there were no differences between groups regarding MAS, FIM-m, and BBS. Regarding the exercise test parameters; there were significant changes in VO2peak values and MET levels (p=0.003, p=0.001 respectively) after treatment only in Group I, but the difference between groups did not reach statistical significance for VO2peak.

CONCLUSION

Treadmill training did not lead to significant changes in functional motor assessment more than those of conventional treatment in this group of patients but an improvement was observed in the exercise capacity. These results may be due to small number of subjects with high variability in data, or treadmill training do not improve functional ambulation in the way assessed by these scales.

OP008

HEMISPHERAL ACTIVATION DURING SPEECH TASKS IN REHABILITATION OF POST-STROKE PATIENTS WITH APHASIA

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INTRODUCTION

Changes of blood flow velocity in the right and left middle cerebral artery (MCA) induced by speech tasks are detectable by means of transcranial Doppler sonography (TCD) monitoring. These measurements can indicate the patterns of hemispheric activation during speech tasks after stroke.

AIMS

To investigate the pattern of hemispheric activation, according to cerebral blood flow changes during speech tasks in stroke patients with aphasia. Methods – Bilateral continuous MCA monitoring with TCD was performed in 14 acute stroke patients with aphasia, while the subjects underwent speech tasks. The speech tasks included naming and recognition of 6 objects, 6 colors and 6 body parts. The correct answers were summarized from both tasks and were used as the measure of the patient's language ability. Patients were divided into 2 sub-groups according to their language ability in the second test: 7 patients with poor language ability and 7 patients with good ability after month of rehabilitation. Mean blood flow velocity (MFV) was measured during the task performance and the hemispheric blood flow velocity shift from one side of the brain to another (VS) was defined as a percent change of the velocity ratio during the test.

RESULTS

Negative statistical correlation was found between the improvement of language ability in the recognition task and the MFV in the left hemisphere during the second test. Additional negative correlation was shown between the one-month improvement of language ability in the naming task and Delta MFV in the left MCA during the naming task of first test. Aphasia patients with good language ability showed much higher MFV in the right MCA during the first test. Left hemispheric VS was shown to be much higher during speech tasks in the sub-group with pure language ability in both tests in comparison with the second sub-group patients.

Discussion/Conclusion

Our study suggests that the performance of speech tasks is associated in aphasia patients with low left hemisphere activation. High blood flow velocity in right MCA of aphasia patients was found to be good prognostic sign for better language ability. Arterial blood flow shift towards left hemisphere during speech tasks was associated with pure language ability.

OP009

COMMUNITY PARTICIPATION ONE-YEAR POST STROKE: FUNCTIONAL OUTCOMES, DEPRESSION AND LIFE SATISFACTION

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INTRODUCTION

Stroke survivors require extended rehabilitation services beyond those provided by the essential in-patient rehabilitation facilities. There is an abundance of research documenting the disabilities in the post acute phase. However there is not enough evidence documenting the participation level and its relation with satisfaction from life and depression in stroke survivors residing in the community one year after onset.

AIMS

To evaluate a. the long term consequences of stroke in terms of activity limitations, restricted participation and satisfaction from life, and b. the relationships between these variables and prediction of satisfaction from life as a whole, in stroke survivors living in the community one-year post onset.

METHOD

56 stroke patients (mean age: 57.7) that completed an in-patient rehabilitation program, were evaluated one-year post onset in their homes, using the following instruments: Functional Independence Measure (FIM), Instrumental Activities of Daily Living Questionnaire (IADLq), Activity Card Sort (ACS), Life-Satisfaction Questionnaire (Li-Sat 9) and the Geriatric Depression Scale (GDS). Results: The mean FIM motor score was 75.88 (max score: 91), yet more than 50% of the sample still required assistance (usually mild to moderate) in dressing, bathing and use of stairs. The majority of the sample required full assistance in some IADL domains, notably meal preparation (77%), housekeeping (70%) and laundry (82%). The mean activity level (ACS), representing the percentage of leisure and IADL activities retained from before stroke, was 42.8%. Satisfaction ratings were generally low but varied between domains. Only 39% were satisfied from 'life as a whole'. The lowest satisfaction rates were noted for 'vocational situation' (14%), whereas the satisfaction rate from family life was high (84%). Significant moderate correlations were found between overall life satisfaction scores and the overall FIM, IADLq, and ACS scores. Activity level was found to be a significant predictor of satisfaction beyond that accounted for by demographic variables and depression.

CONCLUSIONS

Stroke survivors dwelling in the community demonstrate long-standing dissatisfaction one-year post onset, correlating with activity limitation and restricted participation. The findings present a compelling need for rehabilitation services in the community with a focus on participation in order to improve the life satisfaction of this population.

OP010

FUNCTIONAL OUTCOME AFTER INPATIENT STROKE REHABILITATION: A PORTUGUESE COHORT

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INTRODUCTION

Stroke is a leading cause of disability among adults in developed countries. Rehabilitation is well recognized as an essential part of the recovery process, trying to achieve maximum level of functional independence, social reintegration and quality of life, whilst minimizing disability. Functional status of people undergoing rehabilitation is usually assessed with activity-of-daily-living scales, such as Barthel Index (BI) and Functional Independence Measure (FIM). These scales are used to establish goals and monitor progress in a Rehabilitation program.

METHODS

This is a retrospective study of all stroke patients that undertook inpatient rehabilitation at our center in 2005. Data were collected from the patients' discharge note.

AIMS

The objectives of this study were to examine the demographic characteristics of stroke patients admitted for inpatient rehabilitation, to document functional outcome and possible variables related to outcome.

RESULTS

The mean age of this cohort was 59 ± 14 years (22 females, 44 males) and the mean length of hospital stay was 41 ± 18 days. There was a significant improvement in BI and FIM scores from admission to discharge (BI: 39.45 vs 66.33; FIM: 61.29 vs 85.85), with a mean gain of 26.9 and 24.6, respectively. IB at admission was significantly correlated with FIM at admission ($rs=0.70$ $p<0.01$) and IB at discharge was significantly correlated with FIM at discharge ($rs=0.83$ $p<0.01$). The IB gain was also significantly correlated with FIM gain ($rs=0.81$ $p<0.01$). Onset-admission delay was significantly with IB ($rs=-0.3$ $p<0.05$) and FIM at discharge ($rs=-0.38$ $p<0.01$) and FIM efficiency ($rs=-0.34$ $p<0.01$). Patients with haemorrhagic stroke had significantly lower IB and FIM at admission, higher IB and FIM gain and a higher onset-admission delay.

CONCLUSION

Our results document significant improvement of both functional outcome measures following inpatient stroke rehabilitation. IB and FIM scores are highly correlated both at admission, discharge and gains.

OP011

A MODEL OF INTERVENTION IN THE REHABILITATION OF A STROKE PATIENT

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At the department of Physical Medicine and Rehabilitation of the Fernando Fonseca Hospital, a public Hospital under Private Management, the organisational model is centred/focused at the functional teams. The Neurological Rehabilitation team started its activities during the second semester of 1997 and since then until December 31st 2005 treated 3317 patients of which more than 90% with Stroke. The authors characterize their action between the physiatrist doctor, physiotherapist, occupational therapist and neuropsychologist. They characterize their intervention at the stroke unit (UAD), the neurological department and internal medicine department and later on giving importance to team and family members meeting and privilege the education, co-responsibility co-participation of the patient and the family/care givers.

OP012

THE URINARY INCONTINENCE IN STROKE REHABILITATION: A CLINICAL AUDIT PROJECT

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INTRODUCTION

Two thirds of stroke patients admitted in general ward present urinary incontinence and it persists on 25% of the cases discharged from hospital whereas 15% has urinary incontinence after 1 year.

AIMS

The audit clinical methodology is used to check the frequency of urinary incontinence in a first-time stroke patients in post-acute inpatient rehabilitation enrolled for six months. The study has set the rehabilitation program and followed the aids used.

METHODS

Urinary incontinence is defined using subscores of the modified Barthel Index. During rehabilitation process each patient was weekly evaluated on urinary incontinence, physical aids, the FIM-transfer item data, when the FIM-transfer item was over 3 the patient was initialized to the bladder training. On this observational study we performed a descriptive analysis.

RESULTS

27 patients with first-in-a-lifetime stroke were admitted to study within 4 weeks of stroke on set. Among all the patients 6 of them were excluded: 4 of them had premorbid incontinence and 2 had clinical complications. At admission 14 patients were incontinent (56%), 11 of them had an indwelling catheter and 7 were continent.After the first week in hospital the catheter was removed on 8 patients and among them 7 patients were still considered incontinent on the next week. At discharge time the continent group increased up to 4 patiens, the incontinent one decreased to 8 patients (42%), at the follow up just 5 patients were still incontinent (28%).At discharge time the continents did not use any pad, at follow-up only one continent patient used pad; in both continents and incontinents we evidenced a shift from the aids need to the wc autonomy or through the caregiver.

DISCUSSION

The audit results of incontinence prevalence are in agreement with literature. The rehabilitation process through the audit clinical methodology showed a precocious removal of the indwelling catheter and an adequate use of aids. The audit clinical methodology led to a functional integration among the rehabilitation team and it helped to control the rehabilitation program focusing on health improvements. The study results suggest to set a behaviour intervention of bladder training when FIM transfer item is over three.

OP013

RECOVERY OF UPPER LIMB MOTOR FUNCTION IN CHRONIC STROKE PATIENTS BY MEANS OF VISUAL STRATEGIES

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INTRODUCTION

Recent neurophysiological studies demonstrated the presence in the human premotor area of mirror neurons with the property to discharge during the observation of hand/arm actions. Therefore a motor observation task recruits the same cortical areas which are normally involved in the execution of the observed actions.

AIMS

To ascertain whether the observation of upper limb actions may constitute an alternative rehabilitation strategy in chronic stroke patients.

METHODS

20 patients with paralysis or paresis of the upper limb following first cerebral ischemic infarction in the territory of the middle cerebral artery participated in a multicentric study. Patients less than 75 years and with a stroke at least six months previous to the study were included. All subjects had already received a rehabilitation treatment during the acute phase. Patients with impaired state of consciousness, dementia, severe depression or visual impairment, neglect or fluent aphasia were excluded. Patients were asked to observe filmed sequences showing upper limb daily activities and then to imitate the observed action with the affected limb. Before and after treatment patients underwent the Frenchay Arm Test (FAT), the Wolf Motor Function Test (WMFT) and the Stroke Impairment Scale (SIS). Before treatment all subjects were assessed by means of the Barthel Index.

RESULTS

The median value of the Barthel Index before treatment was 95 (range 50-100). The mean FAT values before and after treatment were respectively: 2.6„b1.7 and 4.0„b1.3 ($p<0.001$). We found a significant increase in SIS ($p<0.01$), but not in WMFT after treatment. Only twelve out of 20 subjects were assessed by means of the WMFT.

DISCUSSION

A motor observation task of upper limb actions significantly improves FAT and SIS in chronic stroke patients with first cerebral ischemic infarction in the territory of the middle cerebral artery, thus it could be proposed as an alternative rehabilitation strategy. Nevertheless, these results may not be totally rela-

ted to the alternative treatment, since the recruited patients were chronic. To ascertain the direct effect of a motor observation task on functional recovery of upper limb, a prospective randomized controlled study involving patients in the acute phase should be performed.

OP014

DEEP rTMS USING H-COIL IN ALZHEIMER'S DISEASE: FIRST REPORT

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INTRODUCTION

Alzheimer's Disease (AD) is a major cause of severe cognitive decline in the aged, having no effective treatment at the present. The primary cognitive deficiencies are revealed in working memory, language, executive functions, attention, and long-term memory. Rationale: Given the known neuroplasticity potential of the brain in response to stimulation, we proposed that use of repetitive transcranial magnetic stimulation (rTMS), over brain regions playing a major role in the above dysfunctions, may exert a positive effect in AD. Given the penetrability limitation of current (figure of eight) coils, we thought to test the recently constructed H-coils, enabling stimulation of deep brain structures.

AIM

to evaluate the effect of rTMS using H-coils on the cognitive, affective, linguistic and motor dysfunctions of an AD patient.

METHOD

Based on SPECT demonstration of cortical hypoperfusion mainly over the left cortical mantle (being in accord with the specific pattern of cognitive deficits revealed by this patient), we placed the coil over the anterior left hemi-cranium where the calculated effect should arrive at the ipsilateral prefrontal cortex, Broca's language region, and the septal region with its major cholinergic nuclei. A wide variety of neuropsychological tests were applied before, during and after one month of daily treatment.

RESULTS

Clear improvements were demonstrated in orientation, visual memory, executive functions and confrontation naming. The effect on other cognitive domains was equivocal. The patient reported a significant improvement in her affective state which was confirmed by her family members.

CONCLUSION

Deep rTMS in AD is reported here for the first time. The results are encouraging and we plan to continue our research in this field.

OP015

CLINICAL ASSESSMENT OF DRIVING ABILITIES: NEWS PERSPECTIVES

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OBJECTIVES/AIMS

To review and qualify the clinical assessment of driving abilities according to the Portuguese Legal System. • To identify the role of the "Mobility Centre" in the clinical assessment of driving abilities • To identify the contributions of our regards according to the Portuguese legal system • To develop standard assessments in the "Mobility Centre" Methods: • We searched, reviewed and analysed the Portuguese road legislation published until December 2005. • We discussed our seven years experience in the "Mobility Centre", according to our evaluation system, reporting the clinical, legal and technological factors. • We analysed the reports and searched for the relative contribution between driving ability, legal restriction and technological resources

RESULTS AND DISCUSSION

• The periods of driving license revalidation are not adequate. • Lack of denunciation of clinical intercurrences in people with driving licenses • Lack of legislation about the relearning in the context of alternative driving situations with a previous license. • The evaluation of driving ability is made mostly based on clinical and legal aspects without physical performances and testing with assistive devices. • The assessment of driving abilities, namely in the people with special needs, requires a large knowledge in subjects like clinical aspects and physical evaluation. Such information turns more objectively with specifically proves and essays with assistive devices.

CONCLUSION

There is a need to review the Law in order to fulfil some gaps and consequently implement adequate legal directives. It's necessary to improve measures in order to make a better denunciation of clinical intercurrences in people with driving licenses. In the assessment for driving ability is necessary clinical, legal and technological knowledge. The assessment of driving abilities, namely in the people with special needs, should content clinical information, physical evaluation, objectivity proves, realisation of driving assessments and training with assistive devices.

OP016

SPINAL CORD LESION CAUSED BY TUMORS – CASE REVIEW BETWEEN 1990 AND 2005

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INTRODUCTION AND OBJECTIVES

Neoplasms of the spinal cord are rare cases of spinal cord injury, and represent infrequent causes of tumours. Both benign and malignant can produce neurologic impairment. The purpose of this study is to characterise the population of patients with spinal cord injury caused by neoplasms that underwent an inpatient rehabilitation program in our service in the last fifteen years.

MATERIAL AND METHODS

The authors present a retrospective study of 66 patients with spinal cord tumours, admitted to our Spinal Cord Service between 1990 and 2005. Data concerning epidemiological and clinical aspects and histological type of the tumour was evaluated. The functional status at admittance and discharge was assessed by the Modified Barthel Index (MBI).

RESULTS AND CONCLUSION

Sixty six patients (39 females and 27 males) were evaluated. Age at the time of the diagnosis ranged from 15 to 77 years. Fifty two were paraplegics (17 had complete lesions) and 14 had a tetraplegia (2 of them with a complete lesion). The histopathology of the neoplasm varied widely, being meningeoma (23%) and astrocitoma (21%) the most frequent. The level of dependence, according to MBI scores, improved in almost all patients (64 patients), forty one of them attained a minimum dependence or total independence in activities of daily living. Although it is impossible to lessen the neurologic deficits caused by spinal cord compression, rehabilitation can help the individual to maximize his remaining functional habilities, improving his quality of life.

OP017

FUNCTIONAL OUTCOMES AFTER BOTULINUM TOXIN IN SPINAL CORD INJURY

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Numerous studies have demonstrated the effectiveness of the Botulinum toxin type A in the focal treatment of spasticity secondary to different aetiologies. However, little research was made about the interest of Botulinum toxin on functional abilities in spinal cord injured patients. The aim of this study was to assess the effect of Botulinum toxin A in the management of spasticity resulting from incomplete Spinal Cord Injury (SCI), with emphasis on its influence over limb function. The participants, patients with SCI of several causes and injury levels, had Botulinum toxin type A injected into the muscles of the spastic limb. Assessments were made pre-injection, 1 month and 3 months post-injection, and included clinical evaluation for muscle tone according to the Modified Ashworth scale, joint range of motion (ROM), muscle strength AND gait parameters. Main outcomes and results: a clear clinical improvement, subjective and objective, was noted. Reduced spasticity values of the Modified Ashworth scale, changes of the ROM and improved functional outcomes were registered. Based on the results, the findings in this study suggest that Botulinum toxin may have a place in the management of spasticity following SCI, leading to important functional benefit.

OP018

QUALITY OF LIFE AND HANDICAP OF PATIENTS WITH SCI HAPPENED EITHER IN CHILDHOOD OR ADULTHOOD

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AIM

Spinal cord injury (SCI) causes serious physical and emotional trauma in patients. The quality of life of patients is affected in the long term. We aimed to evaluate the quality of life and the handicap state of patients with SCI happened either in childhood or adulthood and make a comparison between them.

MATERIAL AND METHOD

The patients older than 18 years old with paraplegia or paraparesia who had SCI diagnosis at least more than one year were included in our study. They were divided into two groups as 20 subjects in each; one group including patients who had SCI before 18 years old and the other who had SCI after 18 years old. Depression status was estimated by using Beck Depression Index (BDI), handicap by Craig Handicap Assessment and Reporting Technique-short form (CHART-sf) and quality of life by World Health Organisation Quality of Life-short form (WHOQOL-Bref).

RESULTS

Depression scores were similar to each other in the groups ($p > 0.05$).Also there was no difference between groups in CHART-sf subscales, along with WHOQOL-Bref physical health and psychological domains and in social relationships domain ($p>0.05$). Group 2 had higher scores than group 1 at the WHOQOL-Bref environmental domain ($p<0.05$). The patients' employment and the education status; were not related to each other, also the employment was not related to American Spinal Injury Association (ASIA) scale; the employment was not related to CHART-sf mean scores of physical independence, cognitive independence and total scores. CHART-sf total scores were not related to the educational status, the marital status and the duration of the disease as well.

CONCLUSIONS

According to our results we conclude that either handicap and quality of life measures were similar in

both of the groups. This result may be due to cultural, social and economical aspects. There is not any significant difference between the patients who had SCI before 18 years old and after 18 years old in terms of handicap, quality of life and phsycological situation.

OP019

POST-TRAUMATIC SYRINGOMYELIA – REGARDING A CLINICAL CASE

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INTRODUCTION AND OBJECTIVES

Syringomyelia is a relatively infrequent, but potentially disastrous complication of spinal cord injury. A high cervical syringomyelia can be life threatening due to its rapid progression and upward extension into the brainstem. Since Barnett's description in 1966, post-traumatic syringomyelia (PTS) is being increasingly recognised. The reported incidence of PTS is 1,3% to 3,2%. The time between spinal injury and syringomyelia is variable, occurring from 2 months to several years after the primary lesion. The present paper intends to aware physiatrist to this particular and severe event.

MATERIAL AND METHODS

The authors describe a clinical case of a patient with spinal cord injury in 2003, due to T5/T6 fracture with Paraplegia ASIA A, neurological level T6, first admitted in our Service in 2004 for a rehabilitation program. He was readmitted in 2006, after a diagnosis of syringomyelia and the placement of syringo-subarachnoid shunt. The motor level remained the same but the sensitive level is now C1 (right side). The authors review the epidemiologic, physiopathology, clinical and treatment aspects of this condition.

RESULTS AND CONCLUSION

The severe neuropathic pain, the alert sign for this diagnosis, improved after the placement of the shunt. However, the neurological deterioration could not be reversed. The development of the syringomyelia cavity could be one of the causes of neurological deterioration in patients with traumatic spinal cord injury.

OP020

BONE MASS AND MECHANICAL PROPERTIES OF TIBIA IN HIGH AND LOW LEVEL SPINAL CORD INJURED (SCI) MEN

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INTRODUCTION

The importance of the level of injury(LoI) in the decrease of mechanical strength in paralyzed legs is inadequately investigated.

AIMS

The study compares changes in bone mass and mechanical properties of tibia with neurological LoI.

METHODS

Fifty men were included : 39 had complete SCI in chronic stage(>1,5yr),separated as follows : Group A (n=18, high paraplegia :T4-T7 LoI, mean age : 32,8 yrs,duration of paralysis(DoP): 5,97 yrs) and group B(n=21, low paraplegia :T8-T12 LoI, mean age:39,47 yrs, DoP :5,65 yrs) in comparison with 11 healthy men (group C). None of the subjects was given bone acting drugs. Measurements were performed using peripheral quantitative computed tomography XCT 3000 scanner (Stratec Medizintechnik, Pforzheim,Germany). The distal end of the tibia was used as an anatomical marker. The bone parameters bone mass density (BMD) trabecular, BMD total and BMD cortical, cortical thickness have been measured at 4% and 38% respectively of the tibia length proximal to this point.We calculated stress strain index (SSI) a bone strength estimator at 14% (SSIPol2) and 38% (SSIPol3) of the tibia length proximal to the distal end of the tibia.

RESULTS

In paraplegics all bone mass parameters were statistically decreased in comparison with controls. We calculated the median äSSI 3-2 (SSIPol3 – SSIPol2). In group A median äSSI3-2 was found 174,7 in group B was increased to 236,5 and in group C was 189,5. Spearman correlation coefficient between duration of paralysis(DoP) and äSSI 3-2 was in group A: r = -0,178, p=N.S and group B : r = 0,534, p = 0,027 respectively.

DISCUSSION/CONCLUSION

Despite the similar paralytic effect on bone in paraplegics and because of the non significant DoP between groups (p=0,87) this was a unhomogenously result. According to DoP the two groups act different in mechanical properties of the tibia.In addition group A pts are susceptible to autonomic dysreflexia as a result of the disruption of the autonomic nervous system pathways. These results suggest that neurogenic factors are influencing geometric bone parameters

OP021

BODY COMPOSITION IN SPINAL CORD INJURED MEN

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INTRODUCTION

Spinal cord injured subjects lose lean tissue mass and bone but gain body fat. There is a need to quantify the magnitude of these changes in body composition because there are associated skeletal and cardiovascular health risks.

AIMS

The aim of the present study was to investigate body composition changes in spinal cord injury.

METHODS

Sixty four men were included in this study (mean age 32,3 years). 31 had complete traumatic spinal cord injury (ASIA A) in chronic stage (>1,5 years),Thoracic (T)4-T 12 neurological level of injury (group A), in comparison with 33 able bodied subjects as control group (C) of similar age, height, and weight. None of the subjects was given bone acting drugs. Whole body dual X-ray absorptiometry NORLAND was used to study subjects with SCI and controls for estimates of regional and total body BMC (g), lean and fat tissue mass (kg), and percent.In all measurements head is excluded.

RESULTS

In group A from the measured parameters BMC and Lean mass, were statistically decreased and Fat mass statistically increased in comparison with controls in lower limbs,abdomen and total body composition (p=0,0005 and p=0,05 respectively).We didnt found any diference between groups in upper limbs and trunk BMC (p=N.S.).

DISCUSSION/CONCLUSION

These results suggest the development of significant alterations in body composition of chronic paraplegic men. The lower limbs and regions below the level of injury were more affected. Whole body DXA gives to the clinician valuable informations for the assesssment of body composition changes in paraplegia.

OP022

SURGICAL TREATMENT OF PRESSURE ULCERS IN SPINAL CORD INJURY – CASE REVIEW: OCTOBER 2004 – MAY 2006

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INTRODUCTION

Patients with spinal cord injury have a high vulnerability of developing pressure ulcers, leading to long periods of bedridden. In an acute phase, it delays the beginning of the rehabilitation programme and, throughout the patient's life it will have serious repercussions in family, social and professional reintegration. The surgical treatment is advised in patients with pressure ulcer grade III or IV (Broden scale).

MATERIAL AND METHODS

The authors present a revision of thirty patients with spinal cord injury that were submitted to plastic surgery. Patients were admitted to Spinal Cord Injury Service of the Centro de Medicina de Reabilitação de Alcoitão between October of 2004 and May 2006. The authors analysed data referring epidemiological, physiopathological and clinical aspects, as well as the number of days in admittance and further complications.

RESULTS AND CONCLUSION

Pressure ulcers in spinal cord patients imply high emotional, social and economical costs. They interfere with every day life aspect, since the rehabilitation program to social and familiar integration, and can worst the functional prognosis of these patients. It's important to classify the potential risk for developing a pressure ulcer in these patients in order to enhance preventive measures. The management of this complication implies a multidisciplinary approach. The main treatment is prevention, which must be started since the time of lesion, being the patient's education the most important aspect.

OP023

LONG-TERM COMPLICATIONS IN PATIENTS FROM A SPINAL CORD INJURY

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The Department of Physical and Rehabilitation Medicine in General Hospital Santo António has a large experience assisting patients with Spinal Cord Injuries (SCI). To investigate the long-terms complications in the victims of SCI, the authors retrospectively reviewed the patients who have been admitted in our department between 1990 and 2000, for their complications at 1 year, 5 years and over 5 years after discharge. We have also recorded their personal data, aetiology and type of injury, neurological level, bladder management method and cardiovascular risk factors. The preliminary results demonstrate the importance of long-term close surveillance and follow-up of all the spinal cord injured patients.

OP024

EPIDURAL ABSCESS AFTER SPINAL CORD STIMULATOR IMPLANTATION: A CASE REPORT

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HOSPITAL CENTRAL DO FUNCHAL

INTRODUCTION

Spinal cord stimulation (SCS) is an evidence-based therapy for the management of persisting pain. The indications for SCS include syndromes causing neuropathic pain in the extremities, axial pain related to mechanical factors, mixed pain conditions, intractable angina pecto-

ris and peripheral vascular disease. Major complications of SCS are rare. Even so infection of implanted neurostimulators is a potentially serious problem. Infection of the entire system is rare but can result in epidural abscess formation with probable disastrous neurological consequences. Explantation in this circumstance is mandatory. Two-thirds of epidural infections result from haematogenous spread from the skin, soft tissue or deep viscera. One-third results from the direct extension of a local infection to the subdural space. Most cases are due to S.aureus. The therapeutic method of choice is urgent surgical decompression combined with antibiotics.

CASE REPORT

A 53-year-old man was submitted to a spinal cord stimulator implantation for peripheral vascular disease. Five months later, he developed fever, progressive leg weakness and sphincters incontinence. The magnetic resonance imaging revealed an epidural abscess. Urgent decompressive laminectomy was performed. A progressive neurological recovery occurred. He was submitted to a rehabilitation program.

CONCLUSIONS

Although epidural abscess comprises only 0,2 to 2 cases per 10.000 hospital admissions and is also rare as a complication of SCS, it must never be ignored for the potentially serious neurological deficits. Complications after SCS are more frequent in the immediate postoperative period. Less frequently occurs several months later as the case reported. Neurological recovery is unlikely if surgery is performed more than 24 hours after the onset of paralysis. Key words: Epidural abscess, spinal cord stimulation, spinal cord injury.

OP025

SPINAL CORD INJURY WITHOUT RADIOLOGIC ABNORMALITY (SCIWORA): UNKNOWN IN THE EMERGENCY DEPARTMENT

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INTRODUCTION

SCIWORA usually appears in children after severe trauma, although cases have been reported in adults or after minor trauma. The spinal cord injury (SCI), usually cervical, occurs through extreme flexion, hyperextension, distraction or ischemic damage of the spine, although no alteration may be seen in the X-ray, as the pediatric spine is more flexible than the adult and therefore the image of the vertebrae is not altered. It may occur in children up to 14 years, though it is most usual in under 10 years. Clinical signs may be delayed from 6-48 hours since the traumatism. Initial diagnosis depends on NMR. Correct initial management may alter the course of the injury and prevent complications.

AIMS

To assess the knowledge on spinal cord injury in doctors working both in pediatric and traumatologic emergency departments. METHODS We developed an oral questionnaire for doctors in the emergency departments of pediatrics and traumatology, with open and multiple choice items on their training (general and on SCI), knowledge on SCIWORA, and a clinical proposed case of a child in risk for SCIWORA asking for their initial and secondary management, and suspicion of this pathology.

RESULTS

The sample consisted of 40 doctors, both specialists and residents, of the specialities of orthopaedic surgery, pediatrics, rehabilitation, and family medicine. Most doctors had studied in Spain, and more specifically in Madrid. Very few had received specific training on SCI (all of them in rehabilitation), and most of them had never heard of SCIWORA. When confronting the proposed clinical case, all would ask for an X-ray, and many for a CT, but few would ask for a NMR if those were normal. Most of the doctors would leave the child in observation, but most would make that observation period 24 hours long. If clinical signs of spinal cord injury appearde, most would call the neurosurgeon or the orthopaedist, and immobilise the neck.

DISCUSSION/CONCLUSION

SCIWORA is a severe, though infrequent pathology in children who suffer severe trauma, and should therefore be suspected even without initial neurological signs. The observation period should cover at least the first 48 hours after trauma. Most doctors who might receive such patients do not know about this entity, with the subsequent posible wrong management, leading to worsening of the injury or occurrence of complications. Some training on this subject should be highly desirable.

OP026

TREATMENT OF DETRUSOR-EXTERNAL SPHINCTER DYSSYNERGY WITH BOTULIUM TOXINE - CASE REPORT

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The authors present a case of a male patient with Paraplegia ASIA-E. This patient presented detrusor-external sphincter dyssynergy with elevated pos-mictional volume and multiple urinary infections. He had visited several physicians who proposed the intermittent self-catheterization. The patient declined this solution and abandoned these consultants. The authors proposed de infiltrations with 100U of botulinum toxine. The patient accepted and improved his conditions. Actually he present with low pos-mictional volume and no urinary infections. Spite the treatment of detrusor-external sphincter dyssynergy

with botulinum toxine is experimental it could be a good choice for the treatment of same patients.

OP027

DYNAMIC APPROACH TO THE AUTONOMOUS SPINAL CORD OF QUADRIPLEGICS & PARAPLEGICS TO GET RID OFF ALL UNPREDICTABLE SPASMS INCLUDING FLEXOR WITHDRAWL PERMANENTLY WITH CLINICAL THERAPEUTICS

VASA, Rajul
Mumbai

INTRODUCTION

Paraplegics & Quadriplegics are unable to balance on their own, How much external support must be given to enable them to stand needs to be investigated thoroughly & scientifically for simple facts that too much passive support renders the postural mechanisms go silent as the need to defend COM is taken care of by external support & little short fall in the essential critical support leads to falls & panic & psychological distrust!

The result is a great loss in terms of mandatory afferent input crucial for control of COM leading to chain of events

1) Load is born on external support & not on the limbs
2) Inflow from mechano receptors arising from soles of feet from weight bearing on the limbs, & Proprioceptive afferent inflow is deprived resulting into inability to modulate the out flow of autonomous cord.

AIM

To give inexpensive but most effective solution to major problems of spinal injured patients.

METHOD

Inflow to the autonomous cord is clinically guided to guide the outflow. Video records of these patients to show functional walking in partial injured & completely injured patients.

RESULTS

Complete injured & partial injured patients could achieve functional walking inside the house. This led to:

1) Control on bladder & bowel.
2) Patient could keep dry for more than 3 hours & evacuate bladder with pressure on lower abdomen manually with negligible residual
3) Repeated urine infection, lung infection causing high temperature got prevented completely.
4) Risk of osteoporosis got reduced with safe walking in close door.
5) Spasticity & Rigidity got replaced with flaccid limbs.
6) Un predictable Spasms disappeared completely.
7) No dangers of pressure sore as patient got mobile.
8) All complications known to spinal injury became history for these patients.

CONCLUSION

There can be silver line in the dark cloud for spinal injured patients with dynamic clinical approach that can give new direction to basic research.

OP028

DANCE THERAPHY IN HUNTINGTON`S DISEASE: DANCE TO TREAT A DANCE-LIKE ILLNESS? A PILOT STUDY

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INTRODUCTION

Huntington`s disease is a genetic illness caused by trinucleotide secuential repetition (CAG). It causes: movement disorders causing gait dysfunction, falls, dysphagia, dysartria, etc.; cognitive alterations; and psychiatric disorders. The symptoms appear usually between 30 and 40 years (though there are some juvenile cases), and the disease usually leads to death in 10-20 years after the onset (most commonly through respiratory infections). We thought that dancing might be the perfect kind of excercise for patients with Huntington`s Disease who, though symptomatic, are still capable of walking.

AIMS

To assess the efficacy of a ballroom-dancing program in lessening the symptoms, improving gait and balance funtion, reducing risk of falls, and improving life-quality in patients with initial to moderate Huntington`s Disease.

METHODS

Ballroom-dancing one hour lessons were given for about 6 months on a weekly schedule to four patients. They consisted on general stretching excercises, dancing to music (mostly pasodoble, although also merengue), and simple proprioceptive training excercises on a mat. We also taught them fall-preventing strategies to use in their daily life. Visual analysis of their gait and balance was performed, and life quality was measured using Nottongham Health Questionnaire and Life Quality Questionnaire for Parkinson`s Disease (PDQ-39) in their Spanish adapted versions.

RESULTS

One of the patients left the programme halfway through, and another entered the program late. However, during the time when they attended the program, patients were quite regular, not missing many lessons. Gait quality seemed to improve slightly, although no objective measurement was possible, and it depended on the day and animic state of the patients. Balance did not improve significantly, although the patients reported feeling more secure in their walking both during the lessons and their daily life. Life qua-

lity marks did, on the other hand, improve. Apart from this, patients declared being very happy with the programme, and one of them said it had even affected him positively in his job and social intercourse.

DISCUSSION/CONCLUSIONS

This is certainly a very limited study due to small sample, non-objective assessment of gait dysfunction, and use of a scale meant for a different disease. Desirably, if larger groups were possible, better studies and cost-effectiveness would be possible. Meanwhile this study shows promising results, with a very low cost.

OP029

REHABILITATION TREATMENTIN HUNTINGTON`S DISEASE: A SYSTEMATIC REVIEW

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INTRODUCTION

Huntington`s disease is a genetic illness caused by trinucleotide secuential repetition (CAG). It causes: movement disorders including choreic movements, rigidity, weakness, balance disorders, dyschinesia, bradycinesia, dysphagia, dysartria, etc.; cognitive alterations with bradypsychia, difficulty in learning abilities, mental inflexibility, loss of memory, etc; psychiatric disorders such as depression (both reactive and endogenous), irritability, agressiveness, lack of empathy, and sometimes even hallucinations and psychotic problems. The symptoms appear usually between 30 and 40 years (though there are some juvenile cases), and the disease usually leads to death in 10-20 years after the onset (most commonly through respiratory infections). There is no effective pharmacological treatment, but some rehabilitation techniques might be able to increase gait, balance, and life quality, as well as prevent complications such as respiratory infections, falls, contractures, etc.

AIMS

To assess the existing evidence in the rehabilitation of Huntington`s Disease in all its aspects, including logopaedic treatment, psychological treatment, excercise therapy, occupational therapy and home and care-facility prevention measures.

METHODS

An informatic bibliographical search was performed in some of the most important medical databases: pubmed, embase, cochrane, and PEDro. Articles in English or Spanish were revised when possible, if not, we revised the available abstracts. The official web sites of the national and international associations of ´patients with Huntington`s Disease were also visited and searched for information when possible in English or Spanish.

RESULTS

Very little litterature exists on this matter. Most of it is of low methodologic quality, as most do not compare different groups of patients, treatments, etc. In the few cases where results of groups of patients are explained, the sample was very small. Most articles, however converge in their proposal of specific care facilities for these patients, ineffectiveness and danger of using contention measures, the importance of treating dysphagia and preventing choking and aspiration, effectiveness of fall-preventing strategies, usefulness of treating depression, and importance of taking in account the desires of the patients regarding to their final care.

DISCUSSION/CONCLUSIONS

More investigation on this subject is necessary, and studies of high methodological quality are desirable.

OP030

REHABILITATION WITH BREATHING PACEMAKER: CASE REPORT

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INTRODUCTION

Polimyelitis is a disease of ambiguity that usually affects the children. Rapidly developed quadriplegia with progressive respiratory difficulties are often encountered in this situations. Such a quadriplegic case with respiratiory drive failure is resuscitated in intensive care unit for positive pressure ventilation. Rehab team took over the case for breathing pacemaker. Rehabilitation with breathing pacemaker system is an acceptable way of weanning the ventilator and advantage of breathing pacemaker system over the ventilator are numerous.

METHODOLOGY

A 1oyrs old school boy was admitted in the university hospital with one week history of fever and weakness in the both lowerlimbs. He developed frank quadriplegia and respiratory drive failure following 3days of admission and tranferred to ICU for positive pressure ventilation. Rehab team took over the case and the pacemaker system was made available. With a thoracotomy the electrodes were implanted to the corresponding phrenic nerves that interact with the internally placed tranmitters and the hemidiaphragm then made to contract, producing inhalation of air. The train of pulses then stops, allowing the diaphragm to relax and exhalation to occur in a passive process.

RESULT

Retraining and reconditioning programs are being carriedout to have the full functioning of system. The patient is responding and improving slowly.

DISCUSSION

Although the system is costly its maintance is simpler than the ventilator and advantage of breathing pacemaker over the ventilator is numerous.

CONCLUSION

This case represents the first case of poliomyelitis with breathing pacemaker so far. For full functioning of the system we have wait further.

OP031

OUR EXPERIENCE WITH MENTALLY RETARDED PEOPLE WHO SUSTAINED NEW INJURIES

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REUTH MEDICAL CENTER

Usually, mentally retarded people are treated by special educational and nursing settings. Those who lives in the community or in sheltered institutions, are exposed to various trauma and injuries. During the last few years, in our general rehabilitation section, we have accumulated some experience in the special rehabilitation processes that these people underwent after sustaining various injuries.

OP032

THE RELATION BETWEEN SEXUAL FUNCTION AND QUALITY OF LIFE AMONG SPINAL CORD INJURED INDIVIDUALS

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INTRODUCTION

Spinal Cord Injury (SCI) is a devastating complex injury that significantly impacts the quality of life (QoL). Sexuality is an important component of QoL. The data regarding sexual practice and QoL among SCI patients is limited.

AIM

The purpose of this study was to characterize the sexual practice and quality of life for individuals with SCI, and to investigate the relations between sexuality, QoL and emotional distress among these subjects.

METHODS

55 male subjects with traumatic SCI filled questionnaires regarding QoL, sexuality, emotional distress and social skills. We used LSQ, SCI QL-23, IIEF, Sexual performance and health questionnaire and SCL 90. Statistical analysis was performed using SAS.

RESULTS

78.1% of participants reported of high QoL and 80% do not suffer from depression. 30% had decreased erectile function while 72.72% reported of prominent decrease in orgasmic ability, but in spite of that subjects reported of high libido and good overall satisfaction of sexual performance. The decrease in sexual activity is a major cause for QoL decline. There was high positive correlation between sexual performance, satisfaction and QoL parameters ($p<0.05$), and negative correlations between physical and social activity, emotional distress and depression ($p<0.01$). No correlation was found between the level of injury and sexual performance measures.

CONCLUSIONS

QoL, emotional distress, and satisfaction from sexual activity and performance are significantly correlated among individuals with SCI. The relationship is even more pronounced in light of the lack of interaction with the level and severity of injury. It is imperative that the multidisciplinary team will be fully educated and aware on the importance of sexuality in SCI individuals to help direct patients to the appropriate care needed.

OP033

MARBURG DISEASE, A PSEUDOTUMORAL FORM OF MULTIPLE SCLEROSIS – CASE REPORT

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INTRODUCTION

Multiple Sclerosis is a disease with a great clinical pleomorfism. Diagnosis is more difficult in a patient with recent onset of neurological complaints or in a patient with a primary progressive course, especially in the face of a space-occupying lesion, which may suggest tumoral pathology. The pseudotumoral form of Multiple Sclerosis constitutes the Marburg disease.

CASE REPORT

We present the case of a patient with the pseudotumoral form of Multiple Sclerosis followed in our department, focusing the clinical onset, imaging findings, anatomopathological studies, rehabilitation program and posterior clinical course.

DISCUSSION

The presence of space-occupying lesions in myelinating disorders can difficult the differential diagnosis from other conditions such as neoplasias. This may led to an erroneous initial diagnosis and even to the use of unsuitable, aggressive treatment.

CONCLUSIONS

In young patients in whom imaging studies suggests space-occupying lesions one should consider the possibility of a primary demyelinating disease of the central nervous system with the appearance of a pseudotumour. In certain cases stereotaxic biopsy should be considered if the diagnosis remains in doubt, rather than begin unsuitable treatment. The fundamental

reason for the presentation of our case is to emphasize that these pseudo-tumoral forms of demyelinatig diseases should be considered in diagnosis.

OP034

CONTROLLING NON-INVASIVE VENTILATION IN AMIOTROPHYC LATERAL SCLEROSIS – "AT DISTANCE AND ON REAL TIME": A CASE STUDY

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INTRODUCTION

amiotrophyc lateral sclerosis (ALS) is a progressive degenerative neuromuscular disease in adults, the mean age of onset of symptoms being 56 years with a mean survival time of 3 years. It compromises the quality of life generating great levels of disability and extreme dependence on carers. First symptoms of respiratory insufficiency (RI) usually occur during sleep and nocturnal hypoventilation negatively influences the quality of life (QoL) in ALS patients, even before achieving the state of global RI. Non-invasive ventilation (NIV) is considered as a therapeutic option for the treatment of nocturnal hypoventilation, already established as associated with survival improvements and QoL measures. In an era of cost containment in terms of health care, in which serious considerations are made regarding cost/benefit issues, we bring to discussion the case report of a male ALS bulbar patient, 60 years of age, with a previous evolution of 6 years (from symptoms onset), residing in countryside far from an ALS centre, being treated with NIV for the past 3 months, based on respiratory function testing and nocturnal pulse oximetry criteria.

AIMS

it is our intention to draw attention on the role of different ways of controlling compliance and efficacy of NIV and their possible contribute in terms of quality of life, function and cost-benefit regarding reductions in office visits, transportations, and familial absenteeism from work.

METHODS

we made use of new communication technologies, trying to bring closer to normal the ventilatory mechanics, via modem, which made possible to adjust the ventilation parameters "at distance" and "on real time", and small changes in ventilator parameters effects were investigated. For this purpose we used validated QoL and functional scales such as the EQ-5D (Portuguese version), Functional Independent Measure and ALS specific Functional Rating Scale.

RESULTS

We found significant changes in terms of QoL and functional measures as this case study shows. The largest improvement was observed on the Visual Analogic Scale (VAS) of EQ-5D of 20% but also in functional measures. Regarding cost benefits there were reductions in all the parameters evaluated. however we cannot attribute the positive results to the faster communications, they can instead be due to the simultaneous correction of oxymetric changes. We conclude that further controlled and well designed studies should be planed for the near future.

OP035

TRANSIENT OSTEOPOROSIS OF THE HIP: 2 CASE REPORT AND REVIEW OF THE LITERATURE

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Hospital Pedro Hispano

Transient Osteoporosis of the hip is an uncommon, self-limited entity of unknown cause, characterized by hip pain without an obvious cause and functional disability that resolve spontaneously in 6-24 months. It occurs in middle-aged men or in women in the third trimester of pregnancy. Magnetic resonance imaging, with a bone marrow oedema pattern, remains the gold standard exam for the diagnosis. The authors present two case report, of a 47 year old man with unilateral affection and a 31 year old woman, with bilateral compromise at the third trimester of pregnancy. Both situations were characterized by a sudden onset of hip pain, with no prior trauma, aggravated by weight-bearing and becoming severe enough to produce a limp. Nuclear magnetic resonance imaging revealed a bone marrow oedema pattern, with decreased signal intensity in the femoral heads on T1-weighted images and increased signal intensity of the same areas on T2-weighted images. Blood and urine laboratory investigations were normal. Both patients were submitted to conservative treatment with analgesic drugs and restricted weight bearing.

OP036

LOW-DOSE INTRAVENOUS PAMIDRONATE THERAPY FOR CHILDHOOD OSTEOPOROSIS

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INTRODUCTION

Congenital and acquired forms of osteoporosis in childhood and adolescence can result in morbidity from fractures and pain and place an individual at significant risk for problems in adult life. Despite the proven efficacy of low-dose pamidronate in adults with osteoporosis, the experience in treating the various disorders associated with osteoporosis in childhood is limited at present. Controlled, prospective studies to evaluate the results of prevention and therapy in children are still lacking and the concept of treatment in the young patient is still largely undecided.

AIM

The aim of our study was to review our experience in the treatment of children with osteoporosis with special emphasis on the effectiveness and secondary effects and we will discuss the available literature data.

MATERIAL AND METHODS

We studied 5 patients aged between 4 and 17 with symptomatic osteoporosis with multiple pathological fractures treated with the biphosphonate. Pamidronate (1mg/Kg) was administered intravenously once every 4 months for periods between 2 and 5 years continuously. We review the clinical files of these patients to determine the underlying cause of osteoporosis, laboratorial and bone mineral density values, effectiveness and the secondary effects of the treatment.

RESULTS

Treatment was well tolerated and clinical improvement was remarkable associated with reduced fractures rates and increased bone mineral density. Common adverse effects including fever, muscle aches, nausea were self-limited and occurred after the first infusion in only one patient.

DISCUSSION/ CONCLUSION

Our study, supported by literature data, suggest that cyclic biphosphonate therapy can be beneficial to children with osteoporosis for whom no other treatment options are currently available.

OP037

EFFECTS OF PEMF AND SULPHUROUS MINERAL WATER ON TREATMENT OF EXPERIMENTAL OSTEOPOROSIS

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INTRODUCTION

Electric and magnetic fields could modify the behavior of bone cells.Sulphurous mineral water is used widely in the treatment of skeletal disorders.

Aim of our study was to evaluate the influence of PEMF and sulphurous mineral water "Mljecanica" on bone in model of estrogen-deficient osteoporosis.

MATERIAL AND METHODS

14-weeks-old female Wistar rats(n=21) were divided in three groups:OVX PEMF+SW (n=7) and OVW (n=7) and control INT (n=7). Bilaterally ovariectomy is useful model for experimental osteoporosis.The accommodation condition (temperature 22º-24ºC) and feeding were the same for all groups.After six weeks the OVX PEMF+SW rats were supplied with sulphurous mineral water ad libitum and exposed to PEMF Kosmag 60 (40 Hz, 10 mT, 45 minutes) during four weeks, 5 days per week.OVX and INT were drinking taped water. After four weeks animals were sacrificed.Biochemical parameters :osteocalcin (OC), alkaline phosphatase (AP), calcium (Ca) and phosphorus (P) were evaluated. The histological analises of left tibia were studied by routine light microscope. Biomechanical properties were studied on TOMI 2001.

RESULTS

Statistically significant increase of OC($p<0.05$), statistically significant decrease Ca and AP ($p<0.01$)was obtained in OVX- PEMF+SW compared to OVX-control group.The increase statistical significant of OC ($p<0.01$),decrease of Ca and AP ($p<0.01$) compared with INT-control group. Histological observation showed growth of young chondrocytes in the central zone and cartilage on peripheral parts.The trabecules were thicker, still disconnected, with bone marrow in between.Biomechanical analyses of left femur on flexion determined change quality of bone.

CONCLUSION

Our study shows that PEMF and sulphurous mineral water, used in experimental osteoporosis induced the repairing mechanism of osteoporotic bone. Key words: PEMF, sulpurous mineral water,experimental osteoporosis, bone Acknowledgements : This study is supported by Grant Nº 06/06-020/961-49/05 Ministry of Science and Technology Republic of Srpska.

OP038

POSTURAL EFFECTS OF A FLEXIBLE ORTHOTIC DEVICE FOR ADJUVANT OSTEOPOROSIS TREATMENT

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INTRODUCTION

Supporting an upright posture is an outstanding therapeutic goal in the treatment of osteoporosis. Available orthotic devices are often used after acute vertebral fractures, however these devices are not applicable for the long term use.

AIM

The current study focused on the 1. immediate and 2. long term postural effects of a novel osteoporosis orthosis. The decive was equipped with air chamber pads placed over the thoracic and lumbar spine area but manufactured without any rigid elements.

MATERIALS AND METHODS

The immediate effects were tested in 30 and the long term effect in 54 osteoporosis patients before and after

a 12 months time interval. The effects of the orthosis in the "immediate" study section were tested versus two control groups: in the first control group, the air-chamber pads were removed, in the second control-group, a placebo-orthosis was used. The effects in the "long term" section were tested versus a control group on a waiting list. The participants in the test group of the "long term" section were asked to wear the orthosis throughout the one year test period. Patients of the control group carried no specific device. In both study sections, first and second measurements evaluated the thoracic kyphosis as well as the spinal curvature during upright standing (ultrasound topometry).

RESULTS

1. The immediate effects, obtained during the first study section, demonstrated a substantial and significant amount of spine straightening, facilitated by orthosis wearing. During the orthosis condition the subjects accomplished at least 45% of their maximum active thoracic erection. This effect was less in the control-group with air-chamber pads removed and not obtained in the placebo-group. 2. In the long-term section, these results could be confirmed. Almost 80% to 90% of all participants experienced an increase in spinal erection. Subjects were able to maintain the straightened position over extended time periods. The straightening effect could be obtained after a 12-month period of wearing the orthosis, so this effect was not running out.

CONCLUSIONS

The results point to a direct use of the examined orthosis. Facilitating sensomotor effects are achieved with air-chamber pads and without any rigid elements. This novel idea of constructing an orthosis for adjuvant osteoporosis treatment promises a positive effect on posture combinded with a high level of compliance in the long term use.

OP039

THE CORRELATION BETWEEN LIFE STYLE FACTOR AND BMD IN WOMEN

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INTRODUCTION

Up to now there has no been statistical data about the risk factors for the osteoporosis in the female population of Republic of Srpska.

PURPOSE

to find out the relationships between life style factors (caffeine, calcium intake, physical activity, smoking, and alcohol) and bone mineral density (BMD) in women of this region. Material and Method: The study included 582 Caucasian women (age 33 – 81; mean age 57,6), free of medications affecting bones. BMD was measured at lumbar spine and left hip by DXA (Hologic QDR 4500). According to the WHO definition for osteoporosis (BMD results), the participants were divided into three (3) groups: normal BMD (N): 72 (12,37%); osteopenia (Opn): 178 (30,58%) and osteoporosis (Opz): 332 (57,04%). Data about lifestyle factors were collected by standardized numerical questionnaires. The accepted level of significance was sat at $p<0,05$.

RESULTS

In total sample correlation analyses indicated significant association between low BMD and: increased caffeine intake ($x2gr=9,210$; $p<0,01$), low calcium intake ($x2gr=5,991$; $p<0,05$), inadequate physical activity ($x2gr=9,210$; $p<0,01$). In comparison between N and Opz groups, the significant association was found with the same risk factors, but at the greater significance.

CONCLUSION

The results show the specifics of our population regarding the life style factors causing the changes in BMD. Low BMD was not significantly associated with smoking and alcohol consumption (only 6 women in the Opz group consumed alcohol regularly). Key words: osteoporosis, bone mineral density, caffeine, alcohol, smoking, calcium, physical activity

OP040

THE INFLUENCE OF SULPHUROUS MINERAL WATER ON EXPERIMENTAL OSTEOPOROSIS

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INTRODUCTION

Sulphurous mineral water is used widely in the treatment of skeletal disorder. The most common type of osteoporosis is associated with ovarian hormone deficiency at menopause.

Aim of the study was to evaluate the influence of sulphurous mineral water «Mljecanica» on bone in ovariectomized rats.

MATERIAL AND METHODS

14-weeks-old female Wistar rats (n=21) were randomized in three groups: OVXsw (n=7) and OVX (n=7) bilaterally ovariectomized, and INT (control inact, (n=7). The accommodation conditions and feeding, were the same for all groups, temperature 22-24° C. After six weeks the OVXsw rats were supplied with sulphurous mineral water ad libitum, during four weeks, 5 days per week, while the OVX and INT were drinking taped water. At the end of four-weeks period biochemical analyzes: osteocalcin (OC), alkaline phosphatase (AP), calcium (Ca) and phosphorus (P) were evaluated. The histo-

logical analyzes of left tibia were studied by routine microscopy. Biomechanical properties were studied on TOMI 2001. Results: Statistically significant increase of OC, AP and P was obtained in OVXsw compared to INT-group (p<0,05). The increase of same parameters was not significant in comparison with OVX group. Histological analyses showed the growth of young chondrocytes in the central zone of bone and their migration to peripheral parts. The trabecules were enlarged, still nonconected, with bone marrow in between. Biomechanical properties are also better in OVXsw group.

CONCLUSION

This study shows that sulphurous mineral water, used in experimental osteoporosis, induces the repairing mechanism of osteoporotic bone. Clinical research should follow our experimental study. Acknowledgements: This study is supported by Grant No 06/06-020/961-49/05 Ministry of Science and Technology, Republic of Srpske. Key wards: sulphurous mineral water, experimental osteoporosis, bone, cartilage

OP041

DIETARY CALCIUM INTAKE AND OSTEOPOROSIS IN POST-MENOPAUSAL WOMEN: OBSERVATIONAL STUDY

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INTRODUCTION

The rule of nutritional calcium intake in osteoporosis pathogenesis is not yet clear.

The aim of our study has been to quantify nutritional calcium intake in a population of post-menopausal women in Campania.

METHODS AND MATERIALS

we examined 331 post-menopausal women with prevalent vertebral fractures, their mean age was 64.5 year (40-86).Nutritional daily calcium intake was quantified by specific questionnaire.We measured calcanear bone stiffness by ultrasonography(Achilles Express,Lunar) and vertebral body deformity by computerized morphometric examination on dorsal and lumbar spine radiographic images. We calculated correlation between nutritional calcium intake and calcanear bone stiffness in all patients and in a group of females with a history of femoral fracture.

RESULTS

the mean weekly calcium food frequency was: 0.7 l of milk 3,7 l of mineral water 128 g of soft cheese 90 g of hard cheese Mean daily calcium intake was 482 mg/day. We found no statistical correlation between mean daily calcium intake and bone calcanear stiffness in our population, but there is significant correlation(r= 0,59, p<0,001) in females with a history of hip fracture.

CONCLUSION

in our post-menopausal women the daily calcium intake is lower than 800-1000 mg/day (considered the minimum required by Italian and international guide lines). We have not found significant correlation between daily calcium intake and calcanear bone stiffness. In the sub-group of females with a history of osteoporotic hip fracture, there is a significant correlation between bone stiffness and dietary calcium intake.

OP042

FUNCTIONAL RESULTS AFTER TRANSTIBIAL AMPUTATION WITH SACRAL PLEXUS INJURY: A CASE REPORT

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INTRODUCTION

Major amputation of the lower limb, as a consequence of trauma injury, is in many circumstances considered the last resort when limb salvage is impossible. The majority of the patients with transtibial amputation recover independence in mobility when a properly fitted and designed prosthesis is applied. However functional outcome may be limited due to other trauma complications like peripheral nerve injury. The authors report a case of a 21 year old female patient who had a traffic accident. She suffered left transtibial amputation and ipsilateral sacral plexus lesion. After postoperatory care she performed a rehabilitation program with prosthetic prescription.

AIMS

Discuss the prosthetic management and the rehabilitation program adopted.

RESULTS

Improvement of patient mobility and lifestyle.

CONCLUSION

Lower extremity amputees complicated with peripheral nerve injury require accurate prosthetic interventions and rehabilitation measures to achieve functional mobility.

OP043

SIX YEARS OF AMPUTEES CONSULTATION IN A GENERAL HOSPITAL

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HOSPITAL SAO TEOTONIO E.P.E., VISEU

INTRODUCTION

The main gold of prosthesis is to improve quality of patient's life. Amputation interferes with basic activities, employment and leisure. Rehabilitation and prosthesis must improve patient functionality and integration in society.

OBJECTIVES

Characterization of amputees and prosthesis effectiveness in a general hospital.

METHODS

Retrospective study of the amputees followed in the PMR Service between 2000 and 2005. We have collected data from 183 patients and the characterization of the population focused on age at amputation, gender, aetiology, level of amputation, profession before and after amputation, prosthesis prescription and effectiveness use of prosthesis.

RESULTS

Most of the patients were male (78,7%), 55% of the patients were between 61-75 years old and 20% were between 40-60 years. Most of our patients were lower limb amputees (88,0%). The most frequent level was the upper knee level. Concerning aetiology the most important one was vascular (51,9%) but in patients under 45 years old traumatic aetiology was more frequent. Also in upper limb traumatic aetiology was the most frequent. 70,5% of the amputees presented physiological and psychological conditions for prosthetization and, after a period of physical therapy, 90% of them were able to effective prosthesis use at least for 6 hours a day. At amputation, 7% of patients were students, 19% of patients were primary sector workers and 55% were retired. After two years of amputation 70% of the previously active patients were no active. All the students stayed at school or started a work in tertiary sector. Under 40 years always a qualification work program was attempted in articulation with a professional rehabilitation centre. However the exit of the program was minimum because lack of opportunities for employees.

CONCLUSION

In our patients vascular pathology was the main cause of amputation. We had a good result in prosthetization. The effectiveness use of the prosthesis in ADL and ambulation was important to justify the prescription. We must sensitize labour authorities to a program that provide young amputees opportunities concerning a total integration in society.

OP044

PROSTHETIC FOOT PRESCRIPTION – A PRACTICAL APPROACH

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INTRODUCTION

The availability of advanced prosthetic components may be beneficial to the amputee, but the great variety of available options may also cause confusion in selecting the proper prosthetic prescription. Ideally, the selection of components in a prosthetic prescription would be derived from published scientific outcomes and supported by successful clinical experience. However, clinical prescription is more often a result of positive subjective feedback because objective amputee gait studies often fail to demonstrate significant differences among devices based on scientific measures. This is particularly true to prosthetic feet. Scientific evidence does not significantly favor one prosthetic foot to another.

OBJECTIVES

To provide objective and summarized information about the main characteristics of some most prescribed prosthetic feet and others recent ones, in order to facilitate the clinician prescription option.

METHODS

Describe principal material characteristics, profits, disadvantages and indications of each foot. A board resume compares main characteristics such as prosthesis type, foot type, maximal weight body, activity, foot weight and costs.

DISCUSSION/CONCLUSION

Consistent trials and validated, reliable research must still be presented to convince clinicians that one type of prosthetic foot is superior to another. In absence of strong scientific evidence, the clinician must then be informed about the main characteristics of each prosthetic foot and make an option.

OP045

CARACTERIZATION OF THE AMPUTEES CONSULTANT OF HUC'S S. PRM – EVALUATION OF PROFESSIONAL REINTEGRATION

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INTRODUCTION

An amputation is a destructive surgery that can be considered a constructive one when it diminishes the disability and the ilness and restores functional ability and quality of life to the patient. After the amputation, the amputee begins a new, complex and, sometimes, problematic phase of his life.

AIMS

Caracterization of the patients followed at the Amputees Consultant of the Physical and Rehabilitation Medicine (PRM) Service of Hospitais da Universidade de Coimbra (HUC) and evaluation of their professional reintegration.

METHODS

This clinical study was conducted at HUC's PRM Service, by collecting the data from the file of the Ampu-

tee Consultation, until July/2005, and it includes 1117 patients. The caracterization of the population focused on current age, age at the date of amputation, sex, etiology, level of amputation and professional reintegration, based on their activity after the amputation.

RESULTS AND DISCUSSION

Most of the patients were male (77%). 64,64% of the amputees had ages between 61 and 90 years old. 61,84% of the amputations were performed when the patient had between 51 and 80 years old. The most frequent etiology was the vascular one (52,65%). The amputated limb was the lower one in 92,32% of the cases. 55,06% of the patients were active before the amputation, but only 39,67% of them kept active afterwards. We noticed that kept active: 26,21% of the women and 20,60% of the men; 88,98% of the amputees with ages at the amputation date under 20 years old; 18,49% of the patients between 41 and 60 years old; 91,67% of the patients with an agenesy; 46,79% of the amputees with a traumatic etiology; only 4,48% of amputees from a vascular cause; upper limb amputees more frequently than lower limb ones.

CONCLUSIONS

The majority of the amputees became inactive after the surgery. It's urgent the sensitization of the society and of the medical teams that follow these patients towards this problem.

OP046

MEASURES OF HEALTH STATUS IN MUSCULOSKELETAL DISORDERS

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INTRODUCTION

Measures of health status including health-related quality of life, physical function, pain and satisfaction scales are receiving growing attention of the orthopaedic community, thereby expanding its importance to evaluate the impact of a disease on the patient point of view. Much progress has been made in this area, and appropriate and specific instruments currently exist for each joint.

AIMS

To overview the types of outcome measures used by the orthopaedic community during the last AAOS (American Academy of Orthopaedic Surgeons) annual meeting (March, 2006).

METHODS

The contents of the papers and posters presented were reviewed on the Proceeding Book and CD-ROM by one reviewer (Step one). The abstracts that include patient-based measures and/or clinical scoring systems were reviewed once more by the same reviewer (Step two) to identify the type of outcomes used and the most common measures used in each sub area (Hip, Knee, Ankle/Foot, Spine, Shoulder/Elbow, Hand/Wrist, and Tumors). RESULTS: 1068 papers and posters were presented during the Annual Meeting, of which 353 (33%) included measures of health status. The most common measures (joint or disease-specific) used in each sub area were: The Harris Hip Score, the Knee Society Score, the American Orthopaedic Foot and Ankle Society Score, the Oswestry Disability Index, the American Shoulder and Elbow Surgeons Questionnaire, the Disability of the Arm, Shoulder and Hand Questionnaire and the Musculoskeletal Tumor Society Score for Hip, Knee, Ankle/Foot, Spine, Shoulder/Elbow, Hand/Wrist and Tumors, respectively. The Short Form-36 (SF-36) was the most common generic measure used to evaluate health-related quality of life in these sub areas, except hand/wrist and tumors.

DISCUSSION/CONCLUSION

The measures reported with greater frequency in this annual meeting seem to be the most commonly used in the orthopaedic literature, in accordance with other reviews. Most of these measures showed psychometric value (reliability, validity and responsiveness) in musculoskeletal disorders studies. This review indicated the outcomes measures in use and their increasing variety. Much more attention has been given to their properties and is likely to continue to progress.

OP047

ASSESSING THE RELIABILITY OF THE WESTERN ONTARIO ROTATOR CUFF INDEX

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INTRODUCTION

The Western Ontario Rotator Cuff Index (WORC) is a disease-specific quality of life measurement tool for patients with rotator cuff disease. It is a self-report questionnaire, which has 21 items in the 5 domains of Life and Health (Physical Symptoms, Sports/Recreation, Work, Lifestyle, Emotions). Its Brazilian version has been translated and culturally adapted.

AIMS

To evaluate the reliability (reproducibility and internal consistency) of the Brazilian version of the WORC.

METHODS

The questionnaire was applied three times to 50 patients (Mean age:56, SD: 11; 58% female) who were receiving treatment at the Outpatient Clinic, Department of Orthopaedic and Traumatology, UNIFESP, for a rotator cuff disorder. The first two applications were

performed the same day by two investigators (inter-observer evaluation) and the third by one of the investigators at 2 weeks maximum (intra-observer evaluation). Two weeks was chosen as there was unlikely to be much change in the patients' condition during that time interval. An intraclass correlation coefficient (ICC) was calculated for reproducibility and Cronbach's alpha was calculated for internal consistency of the WORC total score and of each domain. For statistical analysis, the level of significance was set at 5%.

RESULTS

The mean interval from the first to the third administration was 7.08 days (range 2-14). The ICC ranged from 0.951 to 0.985 during the intra and inter-observer evaluation. The Cronbach's alpha ranged from 0.973 to 0.978 during the applications.

DISCUSSION/CONCLUSION

The WORC ICC was excellent for the total score and for each domain. A positive rating for internal consistency was achieved. The Brazilian version of the WORC has been shown to be a reliable tool to evaluate quality of life in patients with rotator cuff disease. Studies to evaluate its validity and responsiveness are now underway.

OP048

HEALTH PROMOTION AND EDUCATIONAL ACTIONS: POSSIBILITIES BY ANALYZE OF THE HEALTH DETERMINANTS AND LIFE QUALITY ON OCCUPATIONAL ENVIRONMENT.

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Health education on occupational environment is a new form of intervention for the occupational diseases and to improve work life quality, because it´s a process able to produce new individual positive perceptions of health. Current research aimed at analyzing the health determinants that interfere in the awareness of life quality and in health conditions and at identifying opportunities for executing educational practices to the benefit of the health of the staff of the Department of Computer Science in Health (UNIFESP/EPM). PRECEDE model has been deployed for research. The four initial phases of PRECEDE-PROCEED model comprising social, epidemic, behavioral/environmental and ecological/educational evaluation constituted the methodological apparatus. DIS staff participating in the research (n = 44) filled a questionnaire on personal data, life quality, health characteristics, features on personal and work environment, habits, stressing life events, stress analysis and strategies for coping with occupational environment. Final sample was composed of 39 employees and results revealed the population's characteristics and the correlation between variables and life quality given in the SF-36 questionnaire. Social variables correlated with quality of life comprised gender, age bracket, marriage status, number of children, number of jobs, personal income and monthly family income. Behavioral and environmental variables correlated with the quality of life comprised ergonomic condition of work, personal events related to job and stress.

OP049

THE IMPACT OF THE CHRONIC PAIN IN LIFE QUALITY OF PATIENTS WITH DEGENERATIVE LESIONS OF ROTATOR CUFF

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Chronic pain can be understood as an unpleasant and continuous experience that persists throughout a month more than any normal acute illness or lesion-healing time is longer. It can cause damage to patients in their physical, financial and social aspects, among others. It is frequently noticed in patients with degenerative rotador cuff tears, because it is characterized by a painful syndrome that provokes change in the local mobility (especially in rising movements above the head), weakness and shoulder pain. The chronic pain by degenerative rotador cuff tears may alter patients' quality of life. It might be necessary to investigate which domains are more likely to be altered so that patients can be guided to an expert who is able to give them a more effective treatment. The goal of this study is to analyze the impact of chronic pain caused by degenerative rotador cuff tears in patients' quality of life. In a transversal study taken place in a segment of Lar Escola São Francisco (LESF) there were selected 20 individuals with degenerative rotador cuff tears and characteristics of chronic pain as part of group A and 20 health individuals for controlled group. Every patient was submitted to a questionnaire about their quality of life: Medical Outcome Study Short Form – 36 Health Survey (SF-36). All of SF-36 questionnaire domains were significantly minor to group A than to group B, especially in physical and affective aspects, as well as in vitality, pain and general physical and mental health. It was possible to conclude that chronic pain provokes a negative impact in the quality of life of patients with degenerative rotador cuff tears.

OP050

GAIT LABORATORY: EVALUATION IN NEURO-ORTHOPEDIC TREATMENT OF EQUINUS FOOT DEFORMITY

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The equino-varus foot deformity is very prevalent amongst hemiplegic post-stroke and post- traumatic brain

injury patients. In the majority of cases the deformity arises in the context of an upper motor neuron syndrome, with hyperactivity of the plantar flexor muscles around the ankle and foot. Such deformity is established along time after the onset of lesions to the brain, and it's severity results from the incapacity to control muscle hyperactivity and posture of the ankle and foot, by means of a conservative therapeutic approach (systemic or intra-muscular medication, physical agents, kinesiology, orthosis). The benefits of a directed customized surgical approach has shown to be very useful, improving comfort, gait pattern, and safety during gait. The authors present two case studies o equinus foot, in which the conservative multimodal approaches did not solve the problem, and neuro-orthopedic surgery was decided. Both cases were evaluated in the gait laboratory before and after surgery. The cases are of two young adults, one female post-stroke and one male post traumatic brain injury. The results are evident concerning, spaciotemporal parameters, kinematics, kinetics and electromyography of gait. In conclusion, the treatment method was effective and the measurement instrument used was adequate to evaluate the indication and the results of the therapeutic intervention.

OP051

INSTRUMENTAL EVALUATION IN GAIT PATTERN AFTER THERAPEUTIC INTERVENTION, WITH THE MCCONNELL METHOD

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Assuming that reducing anterior knee pain increases functional capacity and changes in gait pattern, the authors intended to measure the results of a therapeutic intervention, according to the McConnell method, in a case study, by means of the classical clinical evaluation methods and the instrumental gait analysis using the gait laboratory. The subject of the study was a 35 year old obese female, suffering from ostheoartrosis of the right knee, presenting with a status post-arthroscopy for ligamentoplasty of the anterior cruciate ligament and meniscal shaving, complicated with rupture of the ligament graft. The patient complained of pain, which affected her gait and made it necessary for her to use a crutch. In this case study, the subject was evaluated before the intervention, at 1 month of treatment and at 12 months after concluding treatment. The measurament instruments used were: a visual analogue scale for pain; the functional scale of Lequesne and the gait analysis laboratory (spacio-temporal, kinematics, kinetics and electromiography). The comparative analysis of the results showed clear improvement of symptoms and functionality (daily activities, gait pattern, no need for crutch) after the intervention according to the McConnell method, as well as a persistence of the therapeutic effect after 12 months.

OP052

A CLINICAL CASE: COMPLEX REGIONAL PAIN TYPE I SYNDROME ASSOCIETED WITH HISTERICAL PARALYSIS

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CLINICAL CASE

We're going to introduce the case of a 10 years old girl, living in a disfunctional familiar environment, who in 2005, after a minor fall, started complaining about severe pain in her right calcaneum, revealing inability in plantar support (having to walk with crutches). She was observed in Peadiatric Orthopedic Department, where she was diagnosed with plantar fasceitis. A rehab programme was initiated in a private clinic. A month later, and after several rehab sessions, she developed calcaneum hiperstisia and foot hipersudoresis. The X-Ray was normal and she was diagnosed with complex regional pain type I syndrome, for which she was treated. Three months later, no clinical improvement was witnessed and the patient had to go on using crutches. She showed a right knee flexum and hip flexors retraction, on the same side. She was admitted to Outão Orthopedic Hospital, where she was under rehab treatments, without any clinical improvement. The patient was sent to the Neuropaediatric department, where she made several exams, namely a conventional electromiogram which was normal. On January the fifth 2006, she showed a hysterical profile, with emotional and affective indiference, a 100º knee flexum, mild sweating of the foot, leg muscle atrophy without pain. After psyquiatric evaluation, she was sent to the Peadiatric Rehabilitation Department in the same hospital – Garcia de Orta, with the hypotetical diagnose of hysterical paralysis. During the rehab process, therapeutic strategy included a multidisciplinary reunion with patient's parents. The first series of treatments was performed by a peadiatric rehab therapist, in a room suited for that purpose (including other children). After eleven months of persistent symptoms due to therapeutic failure, a change for an adult phisiotherapist in a more private environment was decided. A month later, the knee and flexum and a normal walking pattern were achived. Therefore, the diagnostic hypotesis set beforehand was confirmed.

OP053

REFLEX SYMPATHETIC DYSTROPHY: TWO UNCOMMON CASE REPORTS

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Reflex Sympathetic Dystrophy (RSD), also called Complex Regional Pain Syndrome type 1, is a well-recogni-

zed entity characterized by severe pain and hyperalgesia disproportionate to the inciting event, swelling, autonomic vasomotor dysfunction and impaired mobility of affected joint areas. Typical signs and symptoms are usually unilateral, but may occasionally become bilateral. The epidemiology is not well documented. Because of the variety of clinical signs, in particular in its incomplete or atypical presentations, it can be confused with a large variety of diseases with the danger of over or under diagnosis. The natural history is unclear and resolution may occur during any stage, the severity can be highly variable. It has been described in relation to various insults including trauma (sometimes minor), medical conditions (stroke, myocardial infarction, surgery, malignancies, among others), but also occurs without any obvious precipitating factor. The pathogenesis of RSD is unclear and numerous theories have been suggested. The diagnosis requires both clinical and radiological findings. A variety of medical treatments have been described, although none is uniformly successful. Rehabilitation remains the cornerstone of treatment. The authors present two clinical case reports of uncommon forms of RSD. The first is a female, who developed a RSD in the upper limb, without obvious aetiology. The second is a male who manifested bilateral upper limb (hand) RSD after stroke. Both patients are being submitted to rehabilitation treatment programs, in our Centre, with good results.

OP054

PELVIC FLOOR REHABILITATION

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INTRODUCTION

Urinary incontinence is a frequent problem among middle aged women. Pelvic rehabilitation techniques have demonstrated some efficacy in controling of incontinence and improvement quality of life (QoL). AIMS: Evaluate the effect of pelvic floor rehabilitation techniques on muscular contraction improvement and QoL in women with urinary incontinence.

METHODS

Retrospectively, we evaluated 48 women's records from patients observed in our consultation, with stress, urge and mixed urinary incontinence. The ages were between 19 and 71 year olds (average age: 52 years old) and Body Mass Index (BMI) between 19 and 36 (average: 26). These women were submitted to pelvic floor electrical stimulation and biofeedback, for 2 sessions a week, between 30-45 minutes duration, completing 10 sessions. The maximum follow-up period was 6 months after last treatment. A QoL scale was used (Ditrovie Scale 1 to 5: 1 is the better result and 5 is the worse) and testing scale for evaluation of muscular force.

RESULTS

All women referred subjective improvement of incontinence after treatment. By using Ditrovie Scale we obtained an average score improvement from 3,1 in previous treatment to 1,9 in post treatment, although without statistic significance. In the objective muscular strength evaluation, the results indicated a previous and posterior testing average value of 2 and 3,6 respectively. This improvement proved to be statistically significant ($p<0,05$).

CONCLUSIONS

In this women population we observed, in fact, an incontinence improvement, demonstrated by a more efficiency muscular force contraction and by a tendency to a better QoL.

OP055

THE REHABILITATION OF SEXUALITY FOLLOWING A SPINAL CORD INJURY

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The World Health Organization refers sexuality as an extremely important aspect of human being and consider that all persons have the right of having pleasurable and safe sexual experiences. When referring handicapped people, WHO mention the need of a special attention. The goal of this communication is transmitting the importance on the living of sexuality and sexual health in the spinal cord injured people's quality of life, emphasize the psychological aspects. It gathers obstacles of a diversified nature that health care professionals encounter when debating this issue with patients and suggests effective implementation of the PLISSIT Model as first approach to the problem and as a natural process in the follow-up of these patients and their holistic rehabilitation. After PLISSIT implementation, propose a sexual rehabilitation programme, which is right in development for an empiric investigation. Spinal cord injured people find in these tools great sexual satisfaction, as well as an improve on quality of their marriages.

OP056

COMPUTERIZED DINAMIC POSTUROGRAPHY: BALANCE ASSESMENT AND CLINICAL APLICATION IN VESTIBULAR REHABILITATION

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The position of the body in relation to gravity and the surround is sensed by combining visual, vestibular and somatosensory inputs. CDP, described by Nashner in 1982, is an objectively quantitative method for assessing postural control under of variety of task that simulate the conditions in daily life. Varying visual and support surface conditions to isolate the functional contribu-

tions of the principle sensory, motor and biomechanical components contributing to balance, permits to analyze the patient's ability to effectively use them to maintain balance. In vestibular patients, CDP is not a site-of-lesion diagnostic test itself, but add value to another vestibular test (videonystagmography, caloric testing and rotatory chair) making possible to know the patient's functional condition through the use of different inputs (sensory organization test), movement strategies analysis (ankle or hip), stability limits and voluntary control capacity in shifting gravity centre between others. It contributes to knowledge specific integration deficit (visual, somatosensorial or vestibular dysfunction, vision preference pattern) to design physical therapy program. Another applications are disease evolution monitoring, or to document the outcome of treatment. The use in legal medical level (malingering or symptom exaggeration) is not well established, but it can be helpful in physiologically inconsistent test results.CDP Rehabilitation uses visual-biofeedback techniques to promote vestibular compensation and increased stability limits using changes in the environmental context to reduce unsteadiness and disability in activity daily living.

OP057

THE SELECTIVE DEVELOPMENT OF MUSCULAR FORCE IN REHABILITATION.

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INTRODUCTION

The mechanical vibrations, applied to the muscle, the tendon structure or to the whole body provokes the stimulus of the "tonic glare vibration" with consequent increase of the contracted force of the hastened muscles and of those adjacent ones. The adaptations regard particularly the neuromuscular system to the level of the advanced motor center and to a better rendering of the nervous commandos replaced to the muscular recruitment.

MATERIALS AND METHODS

The cluster has been constituted from 20 subjects of feminine sex with age comprised between 18 and 55 years affected from marked hypotrophy of the quadriceps clinically found by means of centimetres measurement at 20 cm from the advanced pole of the rotula in every subject. They have been created two groups random (Group A and B) constituted from 10 subjects and of these subjects it has been only dealt the quadriceps muscle, always the right. The group A has been subordinate to one series of 10 rehabilitative sessions, 5 at week, with the use of the instrumentation of the mechano-sonorous vibration to defined intensity (100 Hz) while the group B has been subordinate to a treatment of 10 sitting to alternate days studied, for subject, with the aim of the increasement with the isokinetic instrument Cybex to 90 °/sec.

RESULTS

The isokinetic test to 180°/sec indicates for the Peak of force (Pf) an increase of the ability of expression of the quadriceps muscle of the skilful leg both in the Group A ($p<0,001$) and in the Group B ($p<0,05$). The group A shows an increase of Pf until to 97%. The same important results can be found again in the total job (Tj), respectively the improvements are in average of 104% for the Group A ($p<0,001$) and of 84% for the Group B ($p< 0.01$). Isokinetic test to 60°/sec. the improvements find are online with the exposed test data: Group A improvement of Pf of 64% ($p<0,05$) and Tj of 77%($p<0,01$); Group B improvement Pf of 65.5%($p<0,05$) and Tj of 68%.

DISCUSSION

The local vibratory stimulation bring to a significative increase of the tone and the muscular force. For high speed of contraction, the improvements induced from the vibratory method seem more effective. The methodical of the vibratory stimuli can be used with profit in the rehabilitative therapies.

OP058

VIRTUAL REALITY (VR) FOR ENHANCING REHABILITATON

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Virtual reality systems enable performance of complex motor skills in a controlled environment while manipulating the different components (constraints) of the environment: visual, perceptual, auditory, base of support, movement initiation. The CAREN™ virtual reality system, operating in real-time mode, enables the creation of a variety of experiences in a controlled and repeatable environment via dedicated hardware, software, a 3-dimensional (3D) environment, sound, and proprioceptive stimuli. The real- time motion capture creates a feedback loop, in which the subject acts like a 'human joystick' controlling the movement of the platform by his own body movements. The interactive and immersive qualities of VR suggest a potential for the use of this technology in rehabilitation of patients with balance and motor- perceptual impairments. The versatility and adaptability of the CAREN™ system enables customizing the virtual environment to each patient's specific needs. Thus, the patients can perform a specific movement component while at the same time gaining from all the other advantages of training using VR technology. In this presentation two examples of task specific problem solving will be discussed: 1. A patient with ataxia, balance, motor perceptual and cognitive impairments. 2. A patient with Rt. Trans-Tibial amputation and Lt. lower extremity crush injury with soft tissue and peripheral nerve lesions. In both examples, the basic virtual environments and the different components of the VR system were manipulated to suit each patient's specific needs.

OP059

COMPUTER-CONTROLLED CONTINUOUS PASSIVE MOTION IMPROVES FUNCTION IN FLEXED WRIST IN POST-STROKE SPASTICITY – preliminary report

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INTRODUCTION

In a pilot study of patients with hemiparesis, we sought to determine whether treatment of the spastic flexed wrist with continuous passive motion (CPM) using computer-controlled machine would improve functional impairment.

AIMS

To investigate the efficacy and safety of own computer-controlled continuous passive motion machine in the treatment of post-stroke spasticity of the wrist on range of motion and functional impairment.

MATERIAL AND METHODS

20 randomised post-stroke patients were assigned to receive daily computer-controlled CPM treatments of the spastic flexed wrist. All patients received standard daily post-stroke rehabilitation. The traditional self-range of motion exercise has been continued. In control group (another 20 patients) the motion exercise has not been supported by CPM machine. Patients were evaluated using standardized measures for functional impairment: Ashworth Scale, Frenchay Arm Test and Functional Index Repty (modification of FIM).

RESULTS

Computer-controlled CPM-treated patients demonstrated positive trends towards improved wrist joint range of motion, hand function and Activities in Daily Living. The intensity of spasticity has been also always decreased.

CONCLUSIONS

Computer-controlled continuous passive motion may offer an enhanced benefit for improving function of the spastic hemiplegic hand and could support the traditional self-range of motion exercise. L i t e r a t u r e: Lynch D, Ferraro M, Krol J, Trudell CM, Christos P, Volpe BT. Continuous passive motion improves shoulder joint integrity following stroke. Clin Rehabil. 2005, Sep; 19(6): 594-9.

OP060

GAIT REHABILITATION: A NEW BIOFEEDBACK DEVICE FOR MONITORING AND ENHANCING WEIGHT BEARING

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INTRODUCTION

Gait rehabilitation programs often require either partial weight bearing or encourage full weight bearing on an affected limb. Until recently, there was no objective and practical way to measure correct body weight bearing during ambulation.

AIMS

The present study evaluates a new in-shoe device (SmartStep, Andante Medical Devices Ltd.) for measuring amount of weight on the affected limb and for biofeedback gait training. Methods The first part of the study aimed to establish the validity of the SmartStep by comparing the results obtained from this device with the results obtained from a force plate. The second part aimed to evaluate the effectiveness of the SmartStep as a biofeedback method in patients referred for full weight bearing gait rehabilitation. Analysis was based on independent samples T-test and Chi-Square test for evaluating statistically significant differences between the two gait rehabilitation modes.

RESULTS

The SmartStep could repeat the same results with 0.53 kg error of mean. Statistically significant correlation was found between results obtained from the SmartStep and from the force plate (R2=0.9067 and p=0.004). The use of the SmartStep auditory biofeedback, significantly improved subjects (p=0.00031) weight bearing over the affected limb (7.9 kg ±5.28) as compared to the control group (0.7 kg ±2.41).

CONCLUSIONS

The SmartStep proved to be very reliable since it generated significant repeatable results which correlated significantly with those obtained from a force plate. Patients recommended for FWB gait can significantly improve body weight loading over the affected limb by the use of the SmartStep auditory biofeedback.

OP061

CLOSED LOOP ELECTICAL MUSCLE STIMULATION IN SPINAL CORD INJURIED REHABILITATION

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Functional electrical stimulation (FES) mimics muscle action and afferent proprioceptive input of natural movements much better than passive exercise. Whereas muscle force is continuously adapted to the requirements during unimpaired voluntary motor action, this is not the case for conventional FES. The Closed Loop Electrical Muscle Stimulation technology (CLEMS™) allows to adjust FES in real time to the force output required. The ability of CLEMS to control the quadriceps torque during FES induced knee extension has been shown previously in healthy and paraplegic

persons. The aim of this study was to test the ability of the CLEMS technology to control a more complex movement in paraplegic persons using a newly developed rehabilitation robot (MotionMaker™). A CLEMS induced leg press movement with a constant force output was investigated during a 2 months exercise trial with 5 spinal cord injured (SCI) patients. The CLEMS algorithms were feed by the position and force sensors integrated into the two motorised hip-knee-ankle-foot orthoses of the MotionMaker™. A specially developed mathematical model of the movement allowed to calculate continuously the torque set points for hip, knee and ankle joints needed to produce the desired total force output during the leg press movement. FES of the extensor (gluteus maximus, quadriceps and gastrocnemius) and flexor (hamstrings and tibialis anterior) muscles was continually adjusted through the CLEMS algorithms taking into account torque set points and muscle length. The CLEMS program tested was able to produce a smooth leg press movement with constant force output. The CLEMS algorithms were capable to adjust the muscle stimulation currents to reach the target torques at hip, knee and ankle joints and limit their intensity to the minimum needed for the preset movement, preventing unnecessary fatigue and muscle spasms. All participants of the trial felt secure during CLEMS induced motor training. At the end of the trial, the electrically induced force was found increased by mean 400% (n=5), with neither spasms nor excessive fatigue were observed. The CLEMS technology is able to control complex FES induced leg movements in paraplegic patients and opens new perspectives for motor rehabilitation. CLEMS induced movements are closer to voluntary muscle action than those produced by conventional FES or passive mobilisation and might allow better motor relearning.

OP062

USE OF SMARTSTEP BIOFEEDBACK SYSTEM FOR GAIT TRAINING in STROKE PATIENTS AND AMPUTEES

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INTRODUCTION

The majority of patients admitted for rehabilitation have some gait problems. Stroke patients and amputees usually do not put enough weight on the impaired lower limb or on the prosthesis. The physiotherapist tries to teach them full weight bearing with different physiotherapeutic methods and approaches.

AIM

The aim of the present study was to find whether weight bearing and gait could be improved by using SmartStep biofeedback system which gave the patients a sound signal when they put enough weight on the impaired limb.

SUBJECTS AND METHODS

Ten stroke patients and six lower limb amputees were included into the study. They were randomly divided into the control and the training group. Nine out of sixteen patients were in the control and seven in the training group. Both groups used the SmartStep system during their physiotherapy sessions, but the system was switched off in the control group. Before the start and at the end of the therapy, the weight bearing and timed walking parameters were measured by the SmartStep system. Gait velocity was measured and a 10m walking test performed.

RESULTS

Patients have been 55 to 77 years old. At the beginning of the therapy, there were no significant differences between both groups in age, weight, height, gender, diagnosis, need of walking aids, total FIM score, weight bearing of the impaired lower limb or the prosthesis on the whole sole, hind and fore part, stance and swing phase, cadence, gait velocity and the 10m walking tests. At the end of the study, the patients in the training group put 12.88 percent more of body weight on the impaired side, whereas the patients in the control group put only 2.43 percent more, but this difference was not statistically significant. However, if the weight bearing is standardized with the beginning value then the patients in the training group put significantly more weight on the hind foot and the whole foot ($p < .05$). In all other measure parameters there were no differences between the groups.

DISCUSSION AND CONCLUSION

Despite the small number of included patients and the short duration of the therapy, it was found that by using the biofeedback system the weight bearing of the hind foot and the whole foot increased. Those are the two main aims of the physiotherapy. The study did not succeed to demonstrate that using the biofeedback system improved functional walking (gait velocity, 10m test), however, the quality of gait was highe

OP063

EEG BIOFEEDBACK CAN ESTABLISH FUNCTIONAL RECOVERY IN NEGLECT PATIENTS

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Eleven patients with unilateral neglect of left half of space received one session of EEG biofeedback each. The training electrode was at C4 and the training protocol rewarded a reduction in power in the Theta (4-7Hz) range and an increase in power in the low Beta (12-15 Hz) range. Each session lasted 30 minutes.. Four patients' EEG were also recorded before and after the training. The EEG biofeedback training and 19- channel EEG recordings were implemented using the Deymed Truscan system. Attention to the two visual hemifields was measured before and after training using specially designed and

standardized computerized tests of visual search, using both pop out and feature conjunction. Three patients showed selective improvement on attention tasks in their left visual hemi-fields, two improved in the right visual hemi-fields, and two improved in both. EEG recordings showed selectively reduced power in the low frequency bands over the left hemisphere. EEG biofeedback promises to be an effective procedure for recovery from neglect as well as from other cognitive deficits following hemispheric lesions. The optimal training sites, training bands and length of training remain to be explored.

OP064

PATIENTS' SATISFACTION SURVEY IN A REHABILITATION MEDICINE STETTING

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Reuth Medical Center

In any clinical setting, there are three dimensions: Parameters(people, infrastructure, material, drugs, information, technology), Progress/process (what /how it is done) & Product (health service delivered, change in health status, behavior and health, clinical satisfaction) [the 3 "Ps"). During the period April-October 2005, every patient who was discharged from our three rehabilitation medicine wards, was given a form to fill: out of 617 patients, only 216 (35%) responded. The anonymous form contained subjective information on: demographic parameters, benefits and expectations from the rehab hospitalization. 86% of the forms well filled by the patients and 14% -by members of the family.The three wards differed in patients ' age: A. average age of 40, length of stay 66.7 days. B. 66.4 and LOS 50.3, C. 81.6, LOS-42. We concluded that the clinical and functional outcome, and the stuff's attitude, had an enormous influence on patients' satisfaction. These and other conclusions, led us to a substantial new guidelines for improvements of our service in terms of time efficiency, stuff empowerment, and better environmental conditions.

OP065

OUR EXPERIENCE WITH THE HOMELESS-DISABLED PEOPLE

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During the last two years, eight homeless-disabled people were treated at our rehabilitation ward. All of them were Jewish men, four were new immigrants from Russia, their age ranged between 34 to 60, most of them had finished at least high school, all of them had managed to have a "normal" social-working life until the crisis which led them to the street. Five became alcohol addicts, none were drug users. No one suffered from malnutrition, and after the rehabilitation process was over, and they became independent performing the activities of daily living, most of them decided to return to their previous street –living place despite their disabilities. This new combination of relatively young disabled-homeless people at our rehabilitation facility, demand some novel and different rehabilitation – approach.

OP066

ASSESSMENT OF SPATIAL NEGLECT USING COMPUTERIZED FEATURE AND CONJUNCTION VISUAL SEARCH TASKS

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INTRODUCTION

Unilateral Spatial Neglect (USN) is a complex neurological disorder characterized by impairment in the ability to perceive or respond adequately to significant stimuli in the contralesional space. In neurobehavioral testing upon request to search for target stimuli presented in extrapersonal space, patients usually detect mainly the ipsilesional stimuli. Likewise, when asked to copy a figure presented in front of them, or draw a schematic figure from memory, details in the side contralateral to the lesion side are likely to be omitted or distorted. The newly developed computerized visual search test and training program VISSTA (Visual Spatial Search Task) applies both 'feature' and 'conjunction' search principles to assess detection rate and reaction time (RT) in ipsi- and contra-lesional space.

AIMS

To assess the diagnostic sensitivity of tasks employing feature and conjunction visual search with the VISSTA in stroke patients with unilateral spatial neglect (USN), and to discuss the advantages of using these computerized search tasks.

METHOD

Hit rate and reaction time measures of feature and conjunction search were tested using a newly developed computerized program for the assessment of visual spatial attention (VISSTA), in 25 right-hemisphere damaged stroke patients with USN, 27 right-hemisphere damaged patients without USN, 20 left-hemisphere damaged patients and 39 healthy individuals. In addition, subjects received a set of diagnostic paper-and-pencil tests employing target cancellation, copying, line bisection and representational drawing tasks. Patients were assessed also for the impact of USN on activities of daily living using the ADL Checklist and the Functional Independence Measure.

RESULTS

The VISSTA program clearly differentiated between stroke patients and healthy controls, and between the different patient groups. USN patients showed significant contralesional disadvantage in both feature and conjunction visual search tasks.

CONCLUSIONS

The VISSTA is a simple, easy to operate, sensitive and valid computerized tool for the assessment of spatial attention pathology in brain damaged patients. It is useful not only for diagnostic purposes but also for longitudinal studies where induced or natural recovery from USN has to be monitored by repeated testing. In these conditions re-application of standard paper-and pencil tests is very problematic, due to learning effects and lack of time constraints on patients' performance.

OP067

THE TUNISIAN GOVERNMENT IMPLICATION TO TAKE PART IN THE DECREASE OF DISABILITY BY ACTING ON ENVIRONMENTAL FACTORS

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Tunisia is a developping country which contributes in the undertaking of preventive, medical and rehabilitating care for individuals with specific needs. Trying to consider the role of the environment in WHO'S International Classification Of Functionning, Disability And Health (ICF), we are going to examine through this work the different Tunisian texts of law and decrees concerning the help provided by the Tunisian government for the individuals with reduced mobility by taking action on the environmental facors such as: 1- Fitting-up of the environment and moving facilities for the handicapped by the decree Nº2006- 1467 of May 30th 2006 which sets the technical norms of accessibility facilitating the moving of the handicapped: inside public buildings, in public places, on the pavement, in stations, in collective amenities, housing and private buildings open to the public. 2-Transport accessibility. 3-Need for help at home. 4- Availibility of health care. To objecitvize the application of these recent texts, we illustrate our intervention by objective and effective actions of our government. The ICF is a classification that allows a comprehensive and detailed description of a person's experience of disability, including the environmental factors and facilitators that have an impact on a person's functioning. Disability is nolonger understood as a feature of the individual, but rather as the outcome of an interaction of the person with the health condition and the environmental factors. Key words: Tunisia, Disability, ICF, Environmental factors.

OP068

PATIENTS AND THEIR RELATIVES BEHAVIOR DURING HOSPITALIZATION

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INTRODUCTION

The organization of Rehabilitation services must be focused on the patients needs, demands and satisfaction, in order to ameliorate the offered services.

AIM

To study the compliance and behavior of patient and his relatives while being inpatient in the PRM unit according to the Physiatrist.

MATERIAL-METHODS

142 patients who were inpatients in the PRM department of KAT Hospital were studied through a period of 3 years (12th 1999 to 10th 2002). The mean time of hospitalization was 77.8 ±56.8 days. 102 were men and 40 were women with a mean of age 42.1±17.8 years old. Diagnosis was various, like: SCI=45, TBI=42, CVA=37, neurological disease=13 and other diseases=5. The physiatrist in charge recorded his opinion in a special structured questionnaire regarding patient's and his relatives' compliance and behavior, which could influence the outcome.

RESULTS

The 96.5% of patients followed our instructions comparing to the 91.5% of the relatives. 13.4% interfered with the instructions while the 7% with the rehabilitation program. The initial reliance of the relatives was 96.5% and was maintained to the 90.1%. Complaints about medical issues expressed the 17%, about nursing care 20%, about physical therapy treatment 29.6% and about the overall rehabilitation program 19.7%. Decent relationships with other patients maintained the 90.8%, with the medical staff 95.8% and with the nursing staff 92.3%. Negative opinions expressed the 10.6% while the 92.3% thanked the rehabilitation team at discharge. Initial information at the admittance received the 91.5%, the severity of the situation was analyzed in the 97.9% and the rehabilitation goals in the 100%. The 97.9% of patients were informed about the capabilities of the department and the 99.3% about its lacks. Regular information was made in the 93%. Nonetheless concerns were expressed from the 43% and the 14.1% seek for another opinion. Inappropriate behavior during hospitalization expressed the 14.1% while the 12.7% of them had extreme demands.

CONCLUSIONS

The majority of patients and their relatives showed good behavior and cooperation, seeking regular information about the course of their health.

OP069

PATIENT'S RELATIVES' SATISFACTION FROM THE REHABILITATION SERVICES

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INTRODUCTION

The organization of Rehabilitation services must be focused on the patients needs, demands and satisfaction, in order to ameliorate the offered services.

AIM

To evaluate the satisfaction of patient's direct relatives, who were the main care givers, with severe motor deficit and long term hospitalization, from the rehabilitation services and the functional outcome. Material-

METHODS

142 patients who were inpatients in the PRM department of KAT Hospital were studied through a period of 3 years (12th 1999 to 10th 2002). The mean time of hospitalization was 77.8 ±56.8 days. 102 were men and 40 were women with a mean of age 42.1±17.8 years old. Diagnosis was various, like: SCI=45, TBI=42, CVA=37, neurological disease=13 and other diseases=5. A special structured protocol was completed in which, beside patient's clinical parameters, 10 questions related to patient's relatives' satisfaction were included. The questionnaire was completed the day before patient's discharge and for scoring a fifth graded scale was used. Data's statistical analysis was made with the use of the SPSS package and the statistical significance was controlled with the chi-square test (level of significance p<0,05).

RESULTS

Percentages (%) of patient's relatives' satisfaction are (TABLE): Question: Satisfaction from: Min Over Min Moderate Over Moderate Maxim Missing Clinical care 1.4 – 10.6 33.8 50.0 4.2 From medical team 0.7 – 8.5 23.2 63.4 4.2 From nursing team 0.7 4.2 16.9 26.1 48.6 3.5 From PT team 7.0 8.5 16.2 25.4 39.5 3.5 Personal care giver 4.2 5.6 15.5 31.0 40.1 2.5 Wards–nursing area 19.0 12.7 25.4 21.8 17.6 3.5 PT area 17.6 6.3 28.2 26.1 18.3 3.5 Rehab program 2.8 8.5 14.8 34.5 35.2 4.2 Relationship with other patients 0.7 2.1 13.4 26.8 52.1 4.9 Medical insurance's facilities 13.4 6.3 18.3 23.2 26.8 12.0 The mean satisfaction was 3.820±0,71. Satisfaction had statistically significant correlation to the diagnosis (p=0.033) but not when correlated to the age (p=0.568).

CONCLUSIONS

Patient's relatives expressed more satisfaction to the medical team than the rest members of rehabilitation team and dissatisfaction to the PRM department pile, its corporeal and technical infrastructure and the medical insurance's facilities.

OP070

DYNAMIC FATHER'S GROUP

REGEV, Rachel

This dynamic father's group was conducted at the Nitzan – Onim institute for the rehabilitation of young adults with sever learning disabilities and co morbidity of other physical and mental diseases. The trainees consisted of young adults with a wide spectrum of disabilities especially dyslexia, dyscalculia, ADD, and motoric dysfunctions. It is important to note that due to the relatively adult age of the trainees the clinical picture today is complex in nature. The institute which was founded by the Nitzan organization and the National Social Security is located in Kfar Saba, Israel. It was clear to all the Staff that in spite of the fact that two thirds of the attendants in the program were males' in general fathers were less involved and less available in the therapeutic process of these children. According to the literature (ie: Todd & Shearn 1993, Turner and Holiday 1992, Baily and Blasco 1992, Cummings 1976, and others) it is stressed that there is a significant difference between mothers and fathers relatedness to the disabled child in the family. They are less involved in the daily care of the disabled child, and as a result they experience the situation as more traumatic, and they tend to harbor more guilt feelings. Furthermore most of the community supportive activities were directed mainly to the mother's participation, neglecting the issue of the father's active participation. On this basis a Father's group was formed at Nitzan Onim. Father's of eight learning disabled young adults. who were trainees at the time in the rehabilitation program, participated in a dynamic group which met four hours monthly over a period of a year and a half. The aim of the group was to allow the fathers to become aware of their own emotions and psychological needs. This in itself allowed them to develop an emotional atmosphere which made possible the creation of a support group, to become more involved in the therapeutic and rehabilitative process of their disabled children, as well as being able to listen both to themselves and their children more attentively without being critical and/or felling guilty. In general the fathers welcomed the opportunity to share the difficulties and frustrations in raising such children over the years 4 fathers of the group continued to meet after the formal group was ended. They initiated special accommodation project for the graduates of the program.

OP071

"NITZAN ONIM" A HOLISTIC REHABILITATIONAL PROJECT FOR ADULTS WITH LD

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Nitzan Onim

"Nitzan Onim" is a holistic transition program in Israel, for young adults with learning disability (LD) and co morbidity of physical and mental diseases (like Epilepsy, CP & Turret). This program was initiated by professionals in the field who were often confronted by persons with severe LD unable to find their place in adult society. As has been found in other countries (Schalock et al; 1986, white, 1992) many school

graduates with LD in Israel are generally unprepared to meet the demands of adult life. Many of them are unable to exploit their full potential because of poor vocational, social & personal skills. The present project was founded by "Nitzan", a voluntary parent organization in conjunction with national insurance institution. The specific goals of the program were: 1. To supplement basic educational skills required for successful vocational adjustment and independent living. 2. To teach and develop independent every day skills. 3. To provide individual and group counseling for enhancing mental health and strengthening coping behaviors. 4. To improve vocational skills and behaviors. 5. The final goal is active employment of the trainee in the job market so as to enable him independent life in the community (both financial & social). The project was set up within the framework of a residential post high school campus. The trainees live in small cottages which are situated within a private residential neighborhood in the center of the city Kfar-Saba. The major therapeutic and rehabilitational means employed by the program involves group activities such as sex educational group, vocational preparatory groups, groups where every day financial budgeting is studied and dynamic groups. Parallel to this, each trainee is provided with an individual program in accordance with his personality, his talent, and his specific disabilities. The program extends over a two years period at the end of which the trainees move on to independent living accommodations within the public community, while continuing work in their jobs which they were required during the project. Follow up of ten years reveal that 90% of the trainees still work in the open market.

OP072

CORRELATION OF THE AGE AND QUALITY OF LIFE IN PATIENTS WITH COXARTHROSIS AND HIP ARTHROPLASTY

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INTRODUCTION

Functional deficit of the patients in the end stage of coxarthrosis may have influence on the quality of life in these patients. It is known that this disease is often manifested in the severe form in the older age. Little is known on how age correlates with quality of life of these patients in the period of operative management of disease with implantation of the endoprosthesis.
The aim of this study is to estimate correlation between the age of patiens with total hip arthroplasty because of the coxarthrosis and quality of life in the early period of the follow up after total hip arthroplasty.

PATIENTS AND METHODS

Prospective research includes 54 patients of both sexes (19 male and 35 female), average age 60.38 years (range from 36 to 77 years) that had indication for total hip arthroplasty because of severe stage of coxarthrosis. Instrument used for assessment of quality of life is modified version of Womac Index. Quality of life assessment was done before the surgery (at admission), 2 weeks after the surgery (at discharge) and at the first health check (4 weeks after discharge), for all patients.

RESULTS

Average value of WOMAC index preoperatively was 51.54 (satisfying), at discharge 22.74 (good), and at the first health check 19.4 (good). Ages of the patients with hip arthroplasty because of coxarthrosis and WOMAC index preoperativelly were statistically significantly correlated (r=0.521361), but there was no corellation at discharge (r=0.140447) and one month after discharge(r=0.072351) from surgical department.

CONCLUSION

Results of our research show that preoperative rehabilitation, accurate total hip arthroplasty and postoperative rehabilitation improve quality of life of patients with total hip arthroplasty. Quality of life of patients with severe stage of coxarthrosis significantly correlates with age, but after implantation of hip endoprosthesis, already in the early postoperative follow up, it does not have significant correlation with patient`s age. Change of quality of life of the patient with coxarthrosis after total hip arthroplasty does not correlate with age of these patients.

KEY WORDS

Total hip arthroplasty, quality of life, Womac Index Score

OP073

MEASURING HEALTH RELATED QUALITY OF LIFE IN MYOFASCIAL PAIN SYNDROME

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Pain has a profound effect on patient's lives, restricting daily living and leisure activities. In addition, chronic pain has also a negative effect on patient's mental health. Purpose: To compare the quality of life scores of myofascial pain patients with healthy people. Method: One hundred fifty patients with myofascial pain and one hundred fifty healthy controls completed Beck depression Inventory and Short Form-36 questionnaires. Results: Compared with healthy people, myofascial pain syndrome patients reported significantly higher level of depression ($p<0.001$). When compared with pain duration and pain intensity, correlations were significant ($p<0.01$). Patients with myofascial pain syndrome had significantly poorer health related quality of life than the healthy people. Spearman's correlation showed that level of depression negatively correlated with the scores on quality of life ($r=-0,57$; $p<0.001$).

Conclusion: Patients with myofascial pain syndrome had higher scores of depression than healthy people. Myofascial pain syndrome impacted mostly on mental health than physical health. The multidisciplinary and integrated team approach is important in managing the symptoms of MPS.

OP074

A REHABILITATION PROGRAM FOR PEOPLE WITH FIBROMYALGIA

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INTRODUCTION

Fibromyalgia is a syndrome characterised by chronic widespread musculoskeletal pain, palpable tender points, muscle stiffness, fatigue, and sleep disturbances. It affects 2-3% of adult population.

OBJECTIVE

To present a multidisciplinary rehabilitation program for people with fibromyalgia based on self-management, using pool exercises, low-impact exercises, relaxing exercises, education;and discuss the first results.

METHODS

Twenty-seven women with fibromyalgia participated in groups of eight people, twice a week during seven weeks in sessions with a multidisciplinary group- a physiatrist, two physical therapists, two occupational therapists, a psychologist and a social worker. The assessment was with F.I.Q.-P (Fibromyalgia Impact Questionnaire-Portuguese version), H.A.Q.-P (Health Assessment Questionnaire-Portuguese version), Inventory of Clinical Evaluation of the Depression, patient satisfaction questionnaire, before and after the program. Six months later, we applied FIQ-P and HAQ-P.

RESULTS

These women enjoy and thought useful to them to participate.

CONCLUSION

the first results show that this program is beneficial for Portuguese people with fibromyalgia.

OP075

CLINICAL EFFECTS OF LOW LEVEL LASER THERAPY IN ACUTE LOW BACK PAIN

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INTRODUCTION

Acute low back pain (LBP) with sciatica caused by lumbar disc syndrome is one of most common medical problems. The main pathological factors is infflamation. Some investigation has shown analgesic and anti-inflammatory effects of low level laser therapy (LLLT).

AIMS

Aim of the study was to investigate clinical effects of LLLT proposed as extension of conventional therapy in comparison with conventional therapy in acute LBP.

METHODS

The prospective study concluded 62 patients suffering from acute LBP. The patients were selected by a single blind controlled trial and classified at two groups: A group (n=30) were treated with following parameters of LLLT: wavelength 904nm, intensity 40mW/cm2, frequency 5000Hz, at dose 2J per point; at accumulated dose of 120J and B group (n=32) were treated only with NSAIDs inhibit COX-2 (meloxicam 15mg daily). The laser was locally applied to 4 sites around the lumbar spine. Patients were treated 5 times weekly, for a total of 15 treatments. Evaluation of effects was performed with: pain measured with visual analogue scale (VAS), lumbar mobility measured with Schober measurement and quality of life measured with Oswestry disability questeionarre and 12-item short form health survey (SF-12). Subjects were evaluated before and in three following days after the last treatment. Data were analyzed for differences between mean values in the groups using Student,s t test and with analytic statistical methods.

RESULTS

Mean values of Oswestry score before and after therapy for group A have reduced from 26±2 to 16±3, with statistical significance (t= 9,84 p<0,001) and in group B from 24±2,5 to 22±2,5 (t=2,56 p<0,05). Mean values of SF-12 before and after therapy were 22,33±4,66 and 36,33±3,66 (t=9,12 p<0.001) in group A and 23,66±3,66; 30,33±4,66 (t=3,15 p <0,001) in group B. Mean values of intensity of pain in group A were 82±6,50 and 52±5,50, (t=5,85, p<0,001) and 80±5,50; 67±6,50 in group B (t=2,65; p<0,05). No statistically significance changing has been recorded in Schober measurement.

DISSCUSION/CONCLUSION

This study has shown better analgesic and better functional recovery in patients which were treated with LLLT in comparison with group of patients treated pharmacologically only. We were concluded that the higher therapy efficiency might be obtained with simultaneous use of and NSAIDs inhibit COX-2 therapy and LLLT as non-pharmacollogical antinfflamatory medical treatment.

OP076

FES OF TRUNK MUSCLES IN SUBACUTE AND CHRONIC LOW BACK PAIN
Feasibility study

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One of major goals after acute stage of low back pain is to strengthen the trunk stabilizing (back and abdominal) musculature by specially designed exercise programs. Our goal was to try to develop a multi-channel FES system for strengthening the trunk stabilizing musculature. Subjects 8 subjects were included in our study. Sex: M=6, F=2. Age from 32–47. They were all inpatients (6) or outpatients (2) of our Clinic, with verified lumbar disc herniation and with subacute or chronic low back pain, on regular physical therapy. Two of them dropped out of the study: one because she did not like the feeling of being stimulated and the other had a new attack of acute low back pain (not due to our stimulation program). Method Stimulation For stimulation we used a "Una FET" 4-channel stimulator and special electrodes attached to a lumbar belt. Stimulation parameters: 50 Hz, 500 us, 5 s STIM + 5 s REST. The intensity was adjusted individually for each channel. Stimulated muscle groups: Lumbosacral paravertebral bil., m. obliques abdominis bil. and m. rectus abdominis (lower portions). All muscle groups were stimulated simultaneously. Subjects were stimulated 30 min. daily for tree weeks in addition to their Therapy. Assessment and evaluation After evaluation of medical documentation, muscle test and lumbosacral angle measurement all subjects were classified according to the Oswestry Low Back Pain Disability (LBP) Questionnaire in disability groups. They also were tested about the quantity and quality of pain by a Visual analogue scale and aVerbal scale. After tree weeks of stimulation al this measurements and tests were repeated. At the and of FES therapy the subjects were asked for comments. Results and discussion According to the Ostwestry LBP Disability Questionnaire all our subjects (except one-severe disability) were classified in the group of moderate disability. After FES therapy the improvement was in the range of 20 to 75% of the initial disability score. The results of the Visual analog pain scale and Verbal pain scale showed improvement in all subjects. In the discussion after the tree weeks of therapy they pointed out that: after FES they feel better and that they benefited from this program; they are interested to continue with FES if possible; they prefer the fixation of electrodes by a belt, they would rather have an automatic program for exercise. When asked: 1. Exercise, 2.FES or 3. Both – they all selected 3.

OP077

TRANSMURAL OCCUPATIONAL CARE FOR LOW BACK PAIN QUALITATIVE STUDY OF THE PROTOCOL IMPLEMENTATION

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INTRODUCTION

Low back pain (LBP) is the most common and expensive musculoskeletal disorder in Western countries. Many patients with chronic LBP visiting outpatient clinics have problems with their working capacity. Usual clinical medical care however is not at all aimed at return-to-work and co-operation with occupational physicians (OPs) is poor. Work(place) interventions have proven to be effective for return-to-work after LBP in a primary care setting. To improve return-to-work of patients with LBP in a secondary care setting, a protocol for transmural occupational care for LBP has been developed, including work(place) adaptations and a graded activity training program. A transmural OP is the case manager with an intermediate role between primary and secondary care. The ultimate goal is to prevent malfunctioning at work and disablement when suffering from LBP through coordinated care by OP, occupational therapist and physiotherapist.

AIMS

This study aims for shedding more light on the caregivers' and patients' experiences with the protocol for transmural occupational care concerning applicability, compliance, barriers to implementation, perceived effectiveness and communication between patients and caregivers, and communication between caregivers from the various disciplines.

METHOD

Patients are recruited through four hospitals in the area of Amsterdam. In total 75 patients will engage in the protocol for transmural occupational care. The total duration of the protocol is three months. The involved OP's, occupational therapists and physiotherapists all received special training before the onset of the study. In order to answer the various research questions, data are collected by doing in-depth interviews with patients and focus groups with the caregivers. We aim to do 15 to 20 in-depth interviews with participants in the experimental group and 2 focus groups with 6 to 8 professionals at a time.

RESULTS

The preliminary results for the first patients that have finished the protocol are very positive. At the conference we will present the patients' and caregivers' perspectives on the protocol.

CONCLUSIONS

Not yet available. This research is carried out by TNO Work & Employment and Free University Acade-

mic Hospital (Vumc) within the framework of Body@ Work, a TNO and Free University cooperation. CORRESPONDING AUTHOR: Marije S. Evers, Msc, TNO Work & Employment, PO Box 718, NL 2130 AS Hoofddorp, The Netherlands. E-mail M.Evers@arbeid.tno.nl

OP078

A PROSPECTIVE STUDY OF ROTATOR'S CUFF REPAIR: COMPARISON OF 2 QUESTIONNAIRES OF SHOULDER FUNCTIONING

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INTRODUCTION

Problems of the shoulder are not without influences other than joint specifcs that is, do not exist in isolation but rather in the context of the overall health of the individual. Patients with rotator cuff tear may have weakness, limited active motion and pain. The shoulder is essential for many activities of daily living. Several shoulder function measurement are used in trials, but no gold standand.A currently attention has been focused on the impact of a disorder on the ability to function in daily life and on the measure of health-related quality of live.

AIMS

to compare results of rotator's cuff repair with tow questionnaires of shoulder functioning.Methods: a prospective study with 23 women and 7 men with an average age of 59,2 years (range, 44 to 77) and the average duration of follow-up after the procedure was 10,5 months. The outcome instruments used included the University of California at Los Angeles (UCLA) and Constant-Murley Score. At the present study do not worry about the best surgery for shoulder condition or the best physical therapy treatment, but a reliability and which are the best scoring system to use in our Service.

RESULTS

the two socring scales provide remarkably different results. In the same patient study group, assessment using UCLA had 16 (53%) excellent-good results and the Constant-Murley 7 (23%). Pearson coefficient analysis between UCLA x Constant was 0,864.The average of Constant-Murley score is 65,2(13 to 95) and UCLA score is 74,0 (20 to 100).

DISCUSSION

comparison between scoring systems is difficult because of the lack of a gold standard. The two questionnaires provided very different results: a poor, fair, good or excellent result may be observed for the same shoulder, depending on which scoring system is used.

CONCLUSION

the UCLA score showed best performance in the assessment of rotator's cuff repair because is simple, easy to use and has a patient's perception. Constant-Murley instrument weighted heavily on range of motion (40 points) and strength (25 points), consequently, there were a reduction on the raw score because most of our patients are women and showed muscular weakness.

OP079

THE INFLUENCE OF THE ANKLE POSITION AT THE QUADRICEPS' PEAK TORQUE

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INTRODUCTION

The existence of muscular synergies contributes to the efficient intra and inter joint coordination. This can be observed, for example, during locomotion. Several studies have been carried out attempting to explain a possible synergy between the muscles acting simultaneously on ankle and on knee joint. However, the results obtained up to this moment are not consensual.

AIMS

The purpose of this study was to describe the influence of the ankle position at the peak torque of the quadriceps muscle and in this way check the existence of a possible synergy in the lower extremity.

METHODS

A quasi-experimental study was carried out. Twenty seven female individuals performed isometric knee extension at 70 degrees with the hip at 80 degrees under three different ankle positions: dorsiflexion, plantarflexion (both carried out actively by the subject during the test) and rest position. The electronic dynamometer Ergometer was used to measure the quadriceps' peak torque. For analysis and treatment of data the software Social Statistic Package Science (SPSS) version 13.0 was used, with execution of the Friedman and Wilcoxon tests, Ð=0.05.

RESULTS

Data suggest that (1) a significant difference exists between the quadriceps' peak torque obtained with the ankle in dorsiflexion position and with the ankle in plantarflexion position and between the quadriceps' peak torque obtained with the ankle in dorsiflexion and with the ankle in rest position; (2) the quadriceps' peak torque obtained with the ankle in plantarflexion did not significantly differ from the one obtained with the ankle in rest position.

CONCLUSION

These results suggest that ankle position affects the quadriceps' peak torque, being the dorsiflexion the ankle position in which the quadriceps is able to produce more elevated strength.

OP080

STUDY ON THE INFLUENCE OF THE RESISTED CONTRACTION OF TIBIAL MEDIAL ROTATORS IN THE ELECTROMYOGRAPHIC ACTIVITY OF THE VASTUS MEDIALIS OBLIQUUS AND VASTUS LATERALIS

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The vastus medialis obliquus (VMO) importance in the stabilisation, pathology and rehabilitation of the knee has been used as a base to several studies attempting to optimise the VMO activity. The ability to manipulate muscular recruitment would be beneficial to athletic trainers and therapists when treating knee pathologies such patellofemoral pain syndrome. Some variables have been mentioned to change the standard activation of VMO and VL. Tibial rotation is believed to selectively activate the VMO muscle, but there is not a consensual opinion on this subject. This study was designed to verify if the resisted contraction of internal tibial rotators (RCTIR) increases the ratio between the activity of the VMO and vastus lateralis (VL) muscles during maximum isometric contractions (MIC) of the quadriceps muscle at 90º of knee flexion. Twenty four subjects were chosen from a population of students from Escola Superior de Tecnologias da Saúde do Porto (ESTSP). Each subject was submitted to a series of four MIC of the quadriceps muscle – one without RCTIR and three with RCTIR, being these last performed with the tibia in maximum medial, neutral and lateral rotated positions. During each contraction the value of the quadriceps force and the electromyographic signal (EMGs) of VMO and VL muscles was registered, being the root mean square (rms) of the EMGs used to access the activity level of these muscles. The General Linear Model (GLM) shows that, as =0,05 there was aÐfar as concerns an isolated quadriceps' MIC (mean=0,918), for significant increase in the VMO/VL ratio with RCTIR with the tibia in medial (mean=1,172 [p=0,000]), neutral (mean=1,166 [p=0,000]) and lateral (mean=1,107 [p=0,001]) rotations. The same test shows that during the MIC of the quadriceps muscle associated to RCTIR there were no significative differences in the VMO/VL ratio in the three tibial rotation positions used (p=0,866 [medial-neutral]; p=0,106 [medial-lateral]; p=0,068[neutral-lateral]).

CONCLUSION

These findings show that the RCTIR increases the VMO/VL ratio during the MIC of the quadriceps muscle and that the tibial rotation positions does not influence the VMO/VL ratio during MIC associated to RCTIR).

OP081

CORRELATION BETWEEN COMORBIDITY, HIP FRACTURES AND FUNCTIONAL OUTCOME IN THE GERIATRIC POPULATION

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BACKGROUND

The number of hip fractures occurring worldwide was estimated in 1990 at 1.7 million and is predicted to rise to 6.3 million by 2050. Falls are one of the most common geriatric syndromes threatening the independence of older persons. Falls are associated with increased morbidity, mortality and nursing home placement. The vast majority occur as a result of simple falls.

AIMS

1) To evaluate the correlation between hip fractures and co-morbidities. 2) To evaluate the correlation between co-morbidities and functional recovery after hip fractures.

METHODS

Study design: Retrospective study. Setting: The Geriatric Rehabilitation Department of the Golden Tower Hospital, Bat-Yam. Population: All consecutive hip fracture patients admitted for rehabilitation after surgery were involved in the study. Measurements: 1) Evaluation of co-morbidities by a cumulative illness scale. 2) Rehabilitation length of stay. 3) Functional status at discharge.

RESULTS

Preliminary results show that age, previous functional status, co-morbidities, nutritional status and polypharmacy influence functional outcome after rehabilitation.

CONCLUSIONS

Early and intensive rehabilitation interventions increase the potential of functional improvement and reduce the risk of complications. Early rehabilitation intervention improves quality of life, increases the chance to return home and minimizes health care costs by reducing the prevalence of nursing home placement.

OP082

TOTAL KNEE PROTHESES AND HOME REHABILITATION

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INTRODUCTION AND OBJECTIVES

we present a retrospective study of 553 patients after total knee arthroplasty, that followed a specific program of home rehabilitation between years 2000 and 2005. The patients came from the Ramon y Cajal Hospital of Madrid.

OBJECTIVE

to present a program of domiciliary rehabiltation in patients after total replacement of knee and to value the functional results to the discharge.

MATERIAL AND METHODS

We review data of clinical histories of 553 patients whose main diagnosis was total knee arthroplasty, and treated with a specific program of domiciliary rehabilitation, during period 1 of January from 2000 to 31 of December of 2005. Descriptive analysis becomes, with centralization and dispersion measures of data, and values the final result to the discharge by the index of Barthel.

RESULTS

we evidenciated a clear functional improvement in patients after total knee arthroplasty who have followed a home rehabilitation process. We present a specific program of domiciliary rehabilitation for this type of patients.

CONCLUSIONS

Domiciliary rehabilitation contributes to the improvement of the functionality after total knee arthroplasty.

OP083

"PRELIMINARY STUDY ON THE EFFECT OF THE VIBRATORY THERAPEUTIC EXERCISE OF NON-UNION FRACTURE"

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INTRODUCTION

Nowadays the modern PRM uses techniques which operate by vibrations with a healing and preventative aim. The vibration effects in improving the performance of the athletes are well known. The first studies on the use of vibrations for diagnosis and therapy of fractures date from the mid-70s. In our clinic we speak about "Vibration Therapeutical Exercise" (VTE).

AIM

This study aims to highlight the efficacity of the vibratory therapeutic exercise to fix bones, particularly in non-union bones.

METHODS

For this study we used whole body vibration technique (Nemes LS-B Bosco System, Italy); and local vibration technique (Nemes Arms Bosco System, Italy). The study was carried out between march 2003 and december 2004, at Department of Rehabilitation Medicine in Tor Vergata University, from a sample survey of 4 male patients aged between 35 and 48 years; two of these subjects were suffering from distal fibula fracture, one from tibia and fibula fracture and one from distal femur fracture. All patients had a non-union fracture; three of them were treated by local vibration technique; the fourth patient by whole body vibration technique. Main outcome measures VAS and APECS before and after the treatment.

RESULTS

After the treatment, all the patients have marked signs of clinical improvement. In fact, they have shown a reduction of their pain and an improvement in the functionality of the limb. In addition, radiographs have shown a fit fracture consolidation. The test t-student has been the method used to collect data VAS at the beginning and at the end of the treatment. This test has shown a significant statistical difference (p=0,02) the interval of confidence of difference is 95%: from 1.032 to 6.468, t=4.392 with degrees of freedom p=0,02. The test t-student, using the figures of the APECS's scale taken at the beginning and at the end of the treatment, has shown a significant statistical difference p=0,014. We underline the low number of our sample.

DISCUSSION

This study should be read like a preliminary study to future's one, that foresee the increase of samples and the method of standardization. These results suggested that VTE may represent a strategic tool therapy for fracture healing, in non-union fracture too.

OP084

CLINICAL AND BIOMECANICS ASSIMETRY ON UNILATERAL HEEL PAIN

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INTRODUCTION

Unilateral heel pain is a common and debilitating complain but frequently misdiagnosed. The biomechanics' approach achieves an important role in the diagnosis and management of this condition.

OBJECTIVE

To evaluate the magnitude of clinical and biomechanics asymmetry between asymptomatic and symptomatic foot on patients with unilateral heel pain.

METHODS

On a single observational study we observed a sample of 36 patients with unilateral heel pain; on all patients we performed an evaluation protocol with clinical and baropodometric data using a force plate platform; on all patients were compared through these data the symptomatic and asymptomatic feet; we calculated the average values for all the parameters – Clinical data (Age, BMI, Rear foot angle, Retraction angle and Dorsiflexion angle) and Baropodometric data (Static GRF, Dynamic GRF, Maximal pressure point and Time of maximal pressure on the heel), and identified the most significant differences (p value) – Paired T test, between both feet.

RESULTS

We use Paired T test to detect which were the parameters with significant differences between both feet($p<0.05$),

rear foot angle (p<0.03); retraction angle (p<0.04) dorsiflexion angle (p<0.02), dynamic GRF (p<0.03) and time of maximal pressure (p<0.03). We verified that the time of maximal GRF on the heel presents positive correlation with rear foot angle and dorsiflexion angle and negative correlation with dynamic GRF and retraction angle.

CONCLUSIONS

In our sample of patients, we found significant differences in the following parameters; rear foot angle, retraction angle, dynamic GRF and time of maximal pressure on the heel. The latter, showed positive correlation with rear foot angle and dorsiflexion angle, and negative correlation with dynamic GFR and retraction angle. None of this correlations presents a great magnitude; we believe that the reason lies on the small sample size; however, we think that we can conclude that the time of maximal pressure on the heel and the degree of retraction of the uniarticular ankle plantar flexion muscles are related, which may be used as a therapeutic goal.

OP085

ACTUALITY IN THE MANAGEMENT OF TENDINOPATHY

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INTRODUTION

Tendinopathy is a common diagnosis and constitute an important proportion of referrals to physiatrists. This overuse tendon condition classically, but inappropriately, named tendinitis has a non-inflammatory pathology. Certain tendons are particularly vulnerable to this condition; these include the elements of the rotator cuff, forearm extensors, biceps brachi, Achilles and patella tendons. Histopathological and imagiologic data have placed heavy emphasis on degenerative nature of these conditions. Additionally the presence of neovascularisation is now well-recognized in long-standing tendinopathy. This knowledge imposes the abandon of the anti-inflammatory dogma and leads to the adoption of a new therapeutic strategy.

OBJECTIVE

To analyze the effectiveness of evidence based rehabilitation treatments in tendinopathy by a review and critical evaluation of published clinical trials.

MATERIAL AND METHOD

An exhaustive search was done from several databases: Cochrane Library, PubMed, Embase, PEDro from the last 6 years. The strength of evidence was graded according Philadelphia Panel evidence scale.

RESULTS

Eccentric strengthening is an effective treatment of tendinopathy and may reverse degenerative changes. NSAIDs are useful for short-term pain relief but have no effect on long-term outcomes. Injected corticosteroids may be more effective than oral NSAIDs in acute-phase pain relief but do not alter long-term evolution. Extracorporeal shock wave therapy although expensive is effective on calcific tendinopathy. Laser and ultrasound have proved efficiency but the dosage accepted like optimum is still not clear among authors. Topical nitric oxide application improves early pain and late outcomes. Sclerosis of neovessels is a promising therapy in Achilles tendinopathy. There was a lack of evidence regarding efficacy for several indications (e.g., thermotherapy, massage, electrical stimulation, mechanical traction).

CONCLUSION

Although there are significant advances in the practical management of tendinopathy further well-designed RCTs are needed regarding the use of several interventions where evidence was insufficient to make recommendations.

OP086

REHABILITATION PROGRAM IN SUPRASPINATUS TENDINOPATHY

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INTRODUCTION

Supraspinatus tendinopathy is a common presentation to physiatrists. Current pathophysiological concepts give an emphasis to degenerative nature of this condition and impose a new therapeutic strategy.

OBJECTIVE

The aim of this study was to investigate the short term effectiveness of a experimental rehabilitation program including LASER, topical glyceryl trinitrate and exercise.

MATERIAL AND METHOD

This was a prospective randomised controlled trial of 24 patients. Eligibility criteria were age > 40 years, insidious onset of shoulder pain and an US examination that exclude tendon tear. Exclusion criteria were supraspinatus tendinopathy of < 3 month's duration, a previous shoulder surgery, distal neurological signs, a local corticosteroid injection in the previous 3 months. Patients were randomly assigned to two groups: a) group A (n=12) received laser using a 820 nm, 40 mW probe operating at 5000 Hz to produce a dose of 30 J/cm2 3 times a week, continuous topical glyceryl trinitrate treatment (1.25 mg/24h) and home exercises; b) group B (n=12) undertook massage, US, with NSAIDs iontoforesis and exercises under physiotherapist supervision. All interventions were undertaken for 3 weeks. Subjects were evaluated at baseline, immediately on completion of treatment, and at 4 weeks

after the end of the intervention using Constant Score. Evolution analysis of both groups was done using the Wilcoxon Matched-Pairs Signed-Ranks Test. To compare results of both groups was used Mann-Whitney Non–Parametric Test.

RESULTS

In both groups was observed a significant improvement of constant score values between 1st and 2nd evaluations – P<0.05; at 2nd evaluation differences between both groups were not significant – P<0.05. The 3rd evaluation – at 4 weeks – is still in progress.

CONCLUSION

Although this study is still unconcluded, available results appear confirm that both programs improve significatively pain and disability related to supraspinatus tendinopathy. The lack of differences between groups indicates that group A appears to have a better cost-benefit ratio than group B– higher effectiveness due to less resources required.

OP087

HYALURONIC ACID INJECTION FOR SHOULDER JOINT

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INTRODUCTION AND OBJECTIVES

Hyaluronan therapy has numerous medical applications, including the treatment of joint arthropathies; hyaluronans are polysaccharide molecules that occur naturally in synovial fluid; intra-articular injection of hyaluronans is an alternative for the symptomatic treatment of pain and functional impairment associated with osteoarthritis of the shoulder. We have made this treatment to three patients with clinical and imagiological diagnosis of shoulder osteoarthritis with the propose to confirm the impact on the pain and functional status;

MATERIAL AND METHODS

A prospective study of three patients was conducted – a small case serie, all of them males, with the diagnosis of unilateral osteoarthritis of the shoulder, with age between 42 and 58 years; three moments of evaluation were made – before injections – 20 mg of hyaluronic acid, once week 4 weeks by anterior approach, 1 and two months after last injection; were used the Constant score on these three moments; all the patients continue them physiotherapy program – they were on treatment for more then six weeks, and were trained on simple daily exercise program between the second and third evaluation.

RESULTS

All three cases have improved the score of Constant in spite of have stopped improvement before the program with hyaluran; the improve obtained at the second evaluation were kept at the third – ten weeks after the last injection, with minimal changes in all cases;

CONCLUSIONS

On the literature there is growing evidence that hyaluronans are effective on the treatment of osteoarthritis in general; its use is common on the knee with advantage; our results could be a reason for future clinical trial to prove the effectiveness of the hyaluronans on the treatment of the osteoarthritis of the shoulder.

OP088

SONOGRAPHY FOLLOWING OF MESUREMENTS OF POSTERIOR CRUCIAT LIGAMENT BEFORE AND AFTER TRAINING BY KNEE INSTABILITY

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We used sonography with clinical and radiological examination to determinate pathology condition before rehabilitation, by professional solders and other patients. We had used some measurements too.

The aim of this study is to evaluate measurements of posterior cruciata ligament before and after treatment with training and to compare it with clinical knee stability.

MATERIAL AND METHOD

We had followed 20 patients in period of 6 months, with clinical knee posterior instability and with continuo of cruciata posterior ligament. The patients with partial and complete rupture were not evaluated. The sonography examination was made with probe 7,5 MHz, and posterior knee area. It was measured the longer and upper and low appendix. It was compare before training, after one and six months. The measurements were compare with healthy knee too.

RESULTS

The data base was showing correlation between knee stability and longer of posterior ligament. by 85% of patients. The over longer of pathological ligaments were 54 mm (for normal longer is taking a healthy knee).The control group was the other healthy knee. The patients with bad clinical stability, no full training had still changes in measurements compare with other knee.

CONCLUSION

the measurement of posterior cruciate knee ligament is practically useable and we can repute it many times during rehabilitation fast and easy. We can use it to prove or to refuse the effect of training, who is controlling with force of muscle contraction too.

OP089

THE SONOGRAPHY DIAGNOSTIC METHOD IN REHABILITATION OF KNEE PATHOLOGY

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The sonography method is cheap, easy and fast for examination of knee. It is significant for perry articular soft tissue structures, but not so significant like MRI in internal knee examination.

The aim of our study is to represent our expiries with sonography of knee to determinate the knee condition before rehabilitation by patho morphological changes. Material and method: During one year we had examination 72 knees, unilateral 62 and 10 bilateral with over age of 52 years. The patients had subjective pain by motion, swelling and feeling of instability. The patients were examination in chronic condition after treatment conservative 70 and 2 after arthroscopy. The patients after clinical and sonography examination were divided in two groups: A-with patho morphological changes (electro therapy, low level laser, exercises) and B-with functional changes (only exercises).

RESULTS

The data was showing 20 (28%) were with degenerative changes, 40(55%) with soft tissue trauma, and 12 (17%) with functional changes. After rehabilitation and follow period of 6 months the symptoms were persisting by 6 (8.3%) of patients and they were send to MRI.

DISCUSSION

The MRI is expensive method, and not useable for all patients in my country because we had only one machine. The easy and cheap sonography method could use people for diagnosis and follow the treatment and to repute many times.

CONCLUSION

we had applied the rehabilitation program successfully by patho morphological changes using sonography and we keep time and many. Key words: knee pathology, sonography, rehabilitation.

OP090

REHABILITATION ON SHOULDER PAIN: RETROSSPECTIVE STUDY

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The aim of this paper is to assess the persistence of the results obtained in the partial lesion and tendinitis calcific of rotator cuff with a rehabilitative treatment. The rehabilitative program consists of complex administration of physic energies like hyperthermia and shock waves to combine with manual therapies.

MATERIALS AND METHODS

In the period from May '01 to May '04, 370 subjects, 220 women 150 men affected by partial lesion of 1 or 2 degree of rotator cuff or shoulder tendinitis calcific, have been observed for 360 days after the treatment. Two groups of 100 subjects, homogeneous for age and sex, have been randomly selected from the list. The groups have been submitted to different rehabilitation protocols: Group A protocol consists of 10 hyperthermia sessions and passive and active kinesis therapies treatment 2 session for week for 60 days. The Group B treatment consists of 3 session of high energy shock waves every 15 days followed by passive and active kinesis therapies treatment 2 session for week for 60 days.

RESULTS

Group A shows VAS at 1 month (t1) a significant decrease 78% of case, a decrease in 18% and 4% not significant; at 6 month (t2) significant in 50% of case and in 50% not significant, at 10 months (t3) in 100% of cases not significant decrease. Group B shows a VAS a t1 significant decrease for 81% of case, in 15% a decrease and in 4% not significant, at t2 a significant decrease 68% of cases, in 26% of case a lower decrease,and in 6% of case a decrease not significant, at 10 months (t3) in 65% of case a significant, decrease in 28% of case, not significant in 7%, at 12 months (t4) a significant decrease in 65% of case, in 27% of case a lower decrease, and in 8% of case a not significant decrease.

CONCLUSION

In literature the natural history of lesios of rotator cuff shows a positive solution about 50% of case without a rehabilitative treatment. Our study indicates a long terms benefit in patient treated with high energy electro hydraulic shock waves therapies just as 86,67%. in subjects with lesion of I and II Neer degree and the tendon calcifications.

OP091

CRYOULTRASOUND THERAPY: AN ADJUNCT TREATMENT FOR TENDONITIS OF THE SHOULDER

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PURPOSE

Tendonitis of the shoulder is often associated with chronic pain and impairment of function. The purpose of this study was to determine the pain response after cryoultrasound therapy.

METHODS

Twenty one patients with symptomatic tendonitis of the shoulder for more than six months were included

in the study. Shoulder X-rays and Magnetic Resonance were performed at the first visit. The group underwent a treatment of 10 cryoultrasound therapy sessions. Every patient was assigned to receive 20 minute sessions of continuous ultrasound (intensity 2,0-2,4 W per square centimeter; temperature -2,-4ºC). All the treatments were given daily (five times per week). Each patient was registered according to the pain before (initial V.A.S.) and after treatment (final V.A.S.) using the analogic visual range from 0 (lack of pain) to 10 (unbearable pain) and the indicator of efficacy (difference between initial V.A.S. and final V.A.S./initial V.A.S. x 100). The obtained V.A.S. score was submitted to statistic evaluation by analysis of variance through repeated measures, taking into consideration a value of $p<0.05$.

RESULTS

Analyzing the initial and final V.A.S. values statistically significant variations emerged ($p<0.05$).

CONCLUSION

As applied, cryoultrasound therapy led to a significant reduction in shoulder pain.

OP092

PHYSICALTHERAPY WITH FUNCTIONAL ELECTRIC STIMULATION (FES) IN BONE SARCOMAS – CASE RELATE

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INTRODUCTION

In the past, the only surgical option for treatment of bone sarcomas and soft tissue tumors was amputation. Due to more effective chemotherapy and limb-sparings surgery, patients are now surviving these illness and living quality live. The resection of tumor can compromix the freedom of movement and the functional result. Therefore, it has a great concern of the surgeon how much to hte functional aspects, not only in the limb-sparings surgery as of the supervened one of the patient. The functional electric stimulation have been demonstrated an efficient method in the increase of the muscle strength and range of motion.

AIM

our objective was to describe the effect of FES in patients underwent a bone sarcomas surgery, and to know the real value as a tool in the oncology rehabilitation.

METHODS

3 patients (2F,1M), aged between 16-49 years were studied. They received functional stimulation via surface electrodes on the motor points of the affected lower extremity, delivered with 500 ms pulses at 20 Hz and 50 Hz, during 40 minutes of muscular conditionning with progressive weight, 2 days a week, for 20 sessions. At the beginning and at the end of treatment we assessed parameters for pain(VAS), goniometric measurement(active movement of flexion, extension), quadriceps circumference and muscular strength (manual test).

RESULTS

all patients (3) showed improvement in pain parameters (9 to 2; 7-1; 8-5); ROM (flexion 30 grade to 110); quadriceps circumference (2-3cms) and force (grade 2-4; 4-5; 3-5).

CONCLUSION

the use of FES plays a significant role in restore ROM, muscular strength in patients underwent sarcomas surgeries, improving their the quality of life.

OP093

EFFECTS OF IMMERSION OF THE HAND IN COLD WATER ON THE HABITUATION OF PAIN THRESHOLDS

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INTRODUCTION

It is well known that repeated immersion of the hand in cold water lead to changes in reactions of autonomous functýons.This is called habituation has been shown to be dependent on the interval of the applications. However,the effect of habituatýon on pain perception and the influence of intervals on the pain thresholds have not been evaluated.

MATERIAL-METHODS

In a cross- over design 17 healthy subjects received repeated immersions of one hand in cold water in 1-min-intervals(10 repetitions).As controls isothermal water was used.Before and after the series of thermal and pressure pain thresholds were measured.In a second series the interval of the immersions was modified:1 min,5 min,15min.

RESULTS

Thermal and pressure pain thresholds increased after the series of cold water immersions of the hand.The changes were significantly different to the controls($p<0.01$). With longer interval the changes of the pain thresholds were not different from the 1-min intervals.

CONCLUSION

Serial immersions of one hand in cold water lead to a significant reduction of pain sensitivity in healthy subjects. This effect is independent from the interval in a range from 1-min to 15-min intervals.The underlying mechanism is the well known physiological phenomenon of habituation,triggered on the level of the medulla oblangata.The independence of the effects from the intervals

suggests that peripheral mechanisms are involved,too. The results is of clinical significance for the treatment of pain with cryotherapy and hydrotherapy.

OP094

PRELIMINARY STUDY ON THE EFFECT OF TECAR'S THERAPY ON "HEMIPLEGIC PAIN SHOULDER

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INTRODUCTION

The "hemiplegic pain shoulder" is a frequent difficulty about the stroke's evolution.In literature results that 70% 84% of hemiplegics patients have "painful shoulder". During the first year post-ictus, ¾ of hemiplegics patients suffer of highlight and invalidating pain at shoulder Wanklyn, Forster et al 1996. The pathogenetic conditions who can cause the shoulder pain post stroke, are distinguished in not local causes (spine cervical pathology, thalamic pain) and local causes (Adhesive capsulitis neuropathy from traction or jam bursitises, tendinitis of the bicipitis brachialis ones and the sovraspinosus. Recent studies recognize as HPS's (hemiplegic pain shoulder) first cause the Adhesive capsulitis ought, in absence of sub-luxation of shoulder, to the loss of extensibility of the around articular structures of shoulder and to the strict immobility in first it is made post-stroke Aim In this study we resolve to do to confront two different therapeutic protocols, of which one it includes therapeutic exercise and TENS, the other one therapeutic exercise and TECAR. This preliminary study, is placed as objective to support with scientific evidences which of the methodical ones of treatment before cited turn out to be mainly effective in the treatment of the pain of the H.P.S.

METHODS

40 patients with painful shoulder will be recruited post stroke, subdivided in way random in two groups of 20 subjects. At the moment of the recruitment they will receive the informed consent, Rx examination interested shoulder, evaluation scale (Shoulder Pain Score) and Clinical examinations (passive range of motion –PROM- of the shoulder joint). All it will come repeated to before and after the treatment. Criteria of inclusion: 1) hemiplegics Patients of both series with HPS Criteria of exclusion: 1) Patients who introduce contraindications to the physical means employment; 2) Patients cognitive do not adapt – MMSE<15. 3) hemiplegics patients with shoulder's subluxation 4) patients with farmacological unpainful treatment, 5) patients with P.O.A.

OP095

POSTUROGRAPHIC TESTINGAND MOTOR LEARNING PREDICTABILITY IN GYMNASTS

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Gymnastics training is designed to develop strength, flexibility, concentration, balance, grace, and speed in young athletes and may be associated with severe risks of injury to the neuromusculoskeletal system. The gymnast may progress from a debutante level to an advanced level based upon his/her ability to learn new "tricks" and incorporate these into routines. The time of progression of skills is individual as kinesthetic learning occurs at different speeds in different individuals and some gymnasts may be injured when attempting to perform a new motor skill that is beyond their kinesthetic learning capabilities.

The aim of this study was to determine the relationship between kinesthetic learning in gymnasts and their limits of stability observed during the dynamic phases of computerized Posturographic testing. The fatigue and adaptation ratios obtained with dynamic computerized posturography were compared with the learning time for new gymnastic motor skills as measured by blinded gymnastics coaches. We obtained dynamic Posturographic measurements on 170 gymnasts with skill levels identified as debutante to world class and classified the stability scores in relationship to changes in the degree of sway/fatigue and adaptation in the limits of stability portion of the test. We compared the limits of stability data with the ability to learn new gymnastic tricks and found a significant relationship between these variables. Changes in the limits of stability during a dynamic computerized Posturographic examination can represent both fatigue and motor learning. Individuals with a faster adaptation ratio demonstrated a decreased degree of sway over time as measured by posturography on a perturbed surface with eyes closed. They also have been observed to learn motor skills quicker than those with increased fatigue in the limits of stability test as well as those with a slower adaptation of their least degree of sway. This testing will allow coaches and others to identify individuals with superior abilities in learning new routines with a lesser probability of injury when other experiences and performances appear equal. Individuals of similar levels whose motor learning skills are slower can also be identified. Physical Medicine applications specific to increasing the adaptation ratio and decreasing fatigue before motor skill training in gymnastics may be a valuable adjunct to the reduction of injuries, some of which can be catastrophic.

OP096

BALANCE IMPAIRMENT AND MUSIC THERAPY

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Introduction

Balance impairment is a primary risk factor in the occurrence of falls. Posturography is used by clinicians to identify individuals having a high risk of falls, because it is predictive of the risk of falling and may provide

better prediction overall of the different classes of falls than other neurological tests. When individuals listen to music there is activity in the motor-related structures of the brain, specifically in lateral premotor areas, supplementary motor areas, and somatomotor areas.

AIMS

The aim of this study was to ascertain whether music therapy might cause changes in human stability and be useful in fall prevention and rehabilitation. The aim was also to find what percentage of subjects without neurological signs or symptoms associated with falling had abnormal stability.

METHODS

266 adult volunteers without a history of falling or dizziness were randomized into 10 blinded music listening groups and one control group. A dynamic posturography test (DPT) in the eyes closed perturbed stance was obtained on all subjects. Subjects listened to a group specific song daily for one month and the control group listened to white noise. Serial Posttest DPT scores were collected for the ten treatment conditions weekly. Subjects with abnormal balance and a increased probability of falling were identified. Treatment success rates were calculated by changes in stability measurements from below normal to a normal range.

RESULTS

Dynamic Posturography can identify subjects at risk of falling and listening to music can change postural stability and were greatest for the vocalist Nolwenn Leroy treatment conditions at 71.8% ± 10.7%. Discussion DPT testing can identify subjects at risk of falling. Different types of music have different effects on postural stability and listening to certain types of music has the potential to change human stability and promote change in health care.

CONCLUSIONS

73% of 266 normal subjects without neurological symptoms were found to have balance abnormalities associated with an increased probability of falling. The effect of music listening and postural changes is specific to music type with different music having different effects. Music listening has been found to increase human postural stability with Mozart and Nolwenn Leroy significantly superior to other music tested. The effects of music listening on postural stability are dynamic and immediate and are stable even up to one month.

OP097

AMNIOTIC BAND SYNDROME – A CASE REPORT

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Amniotic band syndrome comprises a variable group of congenital fetal malformations existing due to an extrinsic interference with an originally normal intrauterine development. the incidence ranges from 1:1200 to 1:15000 live births, representing 1 to 2% of newborns with malformations. The most accepted pathogenic mechanism is early amnion rupture, leading to fibrous band formation which entrap fetal parts. The presentation, severity and outcome of the disease are directly related to the gestational age at which amnion rupture occurs. The most frequent presenting anomalies are ring constrictions, digit or limb amputations and pseudo-syndactily. Clubfoot is seen in up to 25% of cases. Cranio-facial, toraco-abdominal and internal organ malformations have also been described. Although some familial cases have been reported, amniotic band syndrome is mainly sporadic, with a very low recurrence risk. Differential diagnosis with genetically determined syndromes, with similar fenotypes, is very important. The purpose of the present article is to document the case of a three-year-old boy, from São Tomé e Príncipe, with typical amniotic band syndrome features. Born to a healthy mother, after a normal, term pregnancy, he was immediately diagnosed to have a lower third right leg congenital transverse amputation, and a left congenital clubbed foot. At the age of two years and a half he was submitted to regularization of the amputation stump, presenting at that time no autonomous gait despite all other psico-motor skills being normal. Presently, one month after right leg prothetisation, he has developed fully autonomous and independent gait, thus achieving all the developmental milestones expected for his age.

KEYWORDS

Amniotic band, amniotic adhesion, pediatric limb amputation, pediatric amputation and developmen.

OP098

MEDICAL REHABILITATION OF PATIENTS WITH OSTEOGENESIS IMPERFECTA AND NEWLY ACQUIRED DISABILITIES

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Adults with OI are rarely referred to facilities of general rehabilitation medicine. Recently, two OI patients were admitted to our department because of additional neurological disabilities: stroke and spinal cord injury. In these circumstances, the hospitalization course has different characteristics.

OP099

EFFECTS OF HOME-BASED TREATMENT IN ACQUIRED BRAIN INJURY CHILDREN USING A TASK-ORIENTED EXERCISE PROGRAM

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OBJECTIVE

The objective of this study is to assess the feasibility and potential efficacy of a task-specific home-based training protocol for children with Acquired Brain Injury, one or more years post trauma.

SUBJECTS AND DESIGN

Nineteen children participated in the study (mean age 12±3.5). Parents and children were instructed about the protocol to be followed at home during a period of 4 weeks (1 daily session with 3 series of sit-to-stand and step-up exercises for each leg). A within-subjects design (repeated measures in all factors) was used. The dependent measures were: 10-m walking-time, walking endurance and balance performance.

RESULTS

Nine subjects (47%) completed the program while 10 subjects withdrew prematurely. No significant differences were found between these two groups, although children that withdrew prematurely walked significantly faster at entry time.

RESULTS

No significant changes were observed at the end of a control period (first month). Only at the end of the training period (second month) significant improvements were observed in walking speed (mean improvement =0.3 m/s), walking endurance (mean improvement =28.0 m) and in balance performance ($p<0.01$).

CONCLUSIONS

Home-based training using task-specific exercises for children with ABI is feasible for less then 50% of participants. If individuals are challenged by the protocol, such training may enhance walking and balance performance.

OP100

BOTULINIC TOXIN AND DROOLING

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INTRODUCTION

Salivary hypersecretion is a frequent problem in the children with deficiency and mainly in those with cerebral palsy associated with a serious motor disease. Several problems, mainly social ones, affect the parents of these children. Botulinic toxin is a therapeutic solution in these situations.

AIMS

Describe the Pediatric Rehabilitation Department experience relative to the use of botulinic toxin in the salivary glands. Evaluate the botulinic toxin effects after administration in the salivary glands in children with salivary hypersecretion, using a life quality scale, filled by the parents/ care givers.

METHODS

Seventeen children were treated. Patient average age was eleven years (from 5 to 29 years). Seventy percent were males. Ten of them were referenced to our consultation by the Cerebral Palsy Center of Lisbon. The diagnoses of cerebral palsy was the most frequent (n=13). Type A botulinic toxin (Botox®) was administered in the parotid and submandibular glands in fourteen children and in the parotid glands only in three children. This administration was made under sedation with midazolam and with ultra sounds control. The dose administered was 2 U/ Kg of weight (max: 70 U). The "Drooling Rate Scale" was used to evaluated toxin therapeutic effects. This Scale was given to parents or care givers and/ or patients before and after toxin administration. RESULTS: An improvement from the average score of 35,1 to the average score of 28,3 was observed in 13 patients, in "Drooling Rate Scale" application. This difference didn't prove to be statistically significant. In four cases the evaluation before and after treatment was similar. No side effects were observed beside transitory sleep disturbance, in three patients.

CONCLUSIONS

In the population subjected to our study there was a decrease of salivary hypersecretion after the injection of botulinic toxin. An ensuing improvement was observed in the life quality scale in the evaluation of "Drooling Rate Scale". This improvement wasn't statistically significant. This fact might be attributed to the low number of children included in the study.

OP101

BOTULINIC TOXIN IN CHILDREN WITH CEREBRAL PALSY – EVALUATION RESULTS

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INTRODUCTION

Spasticity is a frequent problem in children with cerebral palsy. Botulinic toxin is a therapeutic solution to this situation, with proved effect in lower limb. In spite of clinical perception of improvement, it's necessary a quantitative evaluation to have more objective results.

AIMS

To present the Paediatric Rehabilitation Department results from the spasticity treatment, with administration of botulinic toxin in children with cerebral palsy.

METHODS

Clinical records of children treated with botulinic toxin were reviewed. Children were divided in two groups,

according to Gross Motor Function Classification System (GMFCS). Group 1 (children with GMFCS equal or inferior to III) – in this group we applied the Physician Rate Scale (PRS), to upper and lower limbs. 35 children were included with an average age of 8,8 (1 to 16 years olds), 54,3% were male. There were 3 quadriplegias, 14 diplegias, 17 hemiplegias and 1 distonia. Level I severity (20 children), level II (11children) and level III (4 children). Toxin was applied in upper limb in 4 children, in lower limb in 26 and in both in 5 cases. Group 2 (children with GMFCS superior or similar to IV) – in this group we applied the Goal Attainment Scaling (-2, -1, 0, +1, +2). 16 children were included, with average age of 9 (2 to 16 years olds), 75% were male. Clinical picture: 12 quadriplegias, 4 diplegias. Level IV severity (10 children) and level V (6 children). Toxin was applied in upper limb in 3 children, in lower limb in 9 and in both limbs in 4 cases.

RESULTS

Group 1: Previous Botulinic toxin administration PRS average score in upper limb was 12,8 and 14,1 pos toxin. In lower limb the improvement was from 12,9 to 15,4 (without statistic significance). Group 2: In Goal Attainment Scaling (GAS) application we observed the expected results in 11 cases (+1), more than expected results in 4 cases (+2) and in one child we didn´t see any improvement

CONCLUSIONS

In both groups we verified a clinical improvement supported both by PRS and GAS. The authors justified the statistically insignificant result with the lower number of studied cases.

OP102

APPLICATION OF TWO WOMAC FUNCTION SUBSCALE SHORT VERSIONS IN KNEEOSTEOARTHRITIS PATIENTS

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INTRODUCTION

WOMAC scale is valid and reliable. As the original version of WOMAC function subscale is rather long (17 items), Tubach and Whitehouse published two short versions (respectively with eight and seven items). Their usefulness has still to be verified in patients with different extent of joint impairments, and disabilities, and in different therapy settings.

AIM

To prove the usefulness of two short versions of WOMAC function subscale, and to define which one is more appropriate for patients with knee osteoarthritis treated with Pohorje peat (PPT) in Spa Zreèe, Slovenia.

METHODS

In 2004 we proved the effectiveness of PPT in prospective randomized, and controlled study in group of 72 patients with knee osteoarthritis. The control group had fake magnetotherapy (MT). The statistically significant (SS) improvement in total WOMAC score and all three subscores was reached. We took a partial data from randomized 35 participants (mean age 62.4 ys, PPT vs. MT group = 16 vs. 19 participants) from that study and focused on statistical analysis of short subscsores' results.

RESULTS

SS improvement of total and all three WOMAC subscores has been reached only in PT group (mean total WOMAC score, 149.5: 98.2cm, P<0.002; mean WOMAC pain score, 31.3: 18.7, P<0.001; mean WOMAC stiffness score, 13.9: 7.9cm, P<0.03; mean WOMAC function score 104.4: 71.5cm, P=0.006). The improvement in both short function subscore versions was reached, too (Tubach, 53.4: 34.7cm, P=0.001; Whitehouse, 42.7: 28.3cm, P<0.004). In spite of these results, the Mann-Whitney U Test showed only SS improvement in total WOMAC score (P=0.04) and not in function subscores (P=0.061-0.091). Spearman's correlation between functions subscores were high (r=0.84-0.99). When selecting more disabled patients (original functional subscores higher then 50%) SS parallelism between subscores was observed, and Tobach's score improvement was all the time more expressed.

DISCUSSION/CONCLUSIONS

Both short function subscales have excellent constructive validity, and were handy to implement in our knee patient. SS in improvement of Tubach's score was more expressed suggesting possibly minor patients' disabilities. To prove its better appropriateness for our study we have to define its internal consistency, responsiveness, and minimal clinically important differences. We suggest the use of short versions for everyday work.

OP103

LIPIDS PROFILE IN PATIENTS WITH HIP AND KNEE OSTEOARTHRITIS

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INTRODUCTION

Lipids in interaction with other mechanisms may play a important role in the pathogenesis of hip and knee osteoarthritis.

The aim of this study was to determine Body Mass Index (BMI) and investigate the existing disturbance of the lipids profile in the patients with osteoarthritis of the hip and knee.

PATIENTS AND METHODS

The study is designed as clinical prospective trial. We followed 129 consecutive patients with symptomatic knee and hip osteoarthritis, 95 female and 34 male, average age 63.5 years (range from 35 to 84 years), with clear diagnosis of hip and knee osteoarthritis that were admitted on hospital physical treatment. All patients were divided in two groups with respect to the leading diagnosis: group A (patients with knee osteoarthritis) and group B (patients with hip osteoarthritis). Total cholesterol levels, triglycerides and body mass index (BMI) was assessed for every patient.

RESULTS

65,12%, of treated patients were with diagnosis of the knee osteoarthritis (group A) and 34,88% with diagnosis of the hip osteoarthritis (group B). Average value of the BMI for all 129 patients was in the range of the obesitas (31,2 kg/m2). In the group A, BMI was 31,789 kg/m2 and in group B it was 30,61kg/m2. Although average value of the BMI was higher in the group A, differences of the BMI were not statisticaly significant between group A and group B (p>0,05). Average values of the serum triglycerides levels were over normal range in both groups of the patients, but average values of the serum cholesterol levels stayed in the range of the normal values. In the group B, 68,9% of the patients have high serum triglycerides levels with respect to the normal values, but in the group A high serum triglycerides levels were present in 52.38% of patients. The diferences between occurrence of the hipertriglyceridemia in group B and group A were statisticaly significant (p<0,039). Serum cholesterol levels were higher than normal in 21.4% of the patients from group A and in 20%of the patients from group B. Diferences were not statisticaly significant (p>0,05).

CONCLUSION

These data support the hypothesis that lipids, esspecially triglycerides may play a significant role in the pathogenesis of the hip and knee osteoarthritis.

OP104

ASSESMENT OF HYALURONIC ACID INJECTIONS FOR THE TREATMENT OF SYMPTOMATIC HAND OSTEOARTHRITIS

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INTRODUCTION

Osteoarthritis (OA) is the most common age-related joint disorder, and symptomatic osteoarthritis of the hand is leading cause of disability among elders. The prevalence of Symtomatic hand osteoarthritis has been reported to be 26% for women and 13% for men among the elderly population

MATERIALS AND METHODS

Twenty patients between 55 and 81 years showing symptmatic OA of the hand associated with radiographic evidence according to the Kelgren score were included. Patients were treated with three intra-articular injections of Sodium Hyaluronate (SH), each injection contains 7mg of SH in 0,7ml of isotonic solution. Effectiveness assesment was carried out within every visit. Pain was documented using a VAS and Paracetamol consumption (per week). For functional assesment we used the Framingham questionnaire. Other symptoms recorded were swelling, crepitation and pain under palpation

RESULTS

Pain relief and improvement of hand function ocurred at 12 weeks after the first injection in 17 of 20 patients. No adverse events ocurred.

CONCLUSION

A single course of three SH injections seems to be safe and effective in relieving pain and improving joint function in pa

OP105

COMPARISON OF INTRAARTICULAR INJECTION OF CORTICOSTEROID OR HYALURONIC ACID FOR THE TREATMENT OF OSTEOARTHRITIS (OA) OF THE KNEE – A RETROSPECTIVE STUDY OF 100 PATIENTS

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Background: Osteoarthritis (OA) is the most prevalent chronic joint disorder worldwide and is associated with significant pain and disability. Osteoarthritis of the knee affects up to 10% of the elderly population. The condition is frequently treated by intra-articular injection of hyaluronic acid or corticosteroid. We performed a retrospective study of 100 patients to compare the outcomes of both these treatments.

METHODS

One hundred patients with knee osteoarthritis were chosen to receive either corticosteroids or hyaluronic acid. The patients treated with hyaluronic acid received one or two courses of three injections. The patients treated with corticosteroids received one injection.

OBJECTIVES

To evaluate the outcomes of both these treatments in knee OA and to compare whether one had better results in relieving pain than the other.

RESULTS

Both groups demonstrated improvements, especially in pain, however no significant differences between the two treatment groups were found. Men demons-

trated significantly more response to treatment than women.

OP106

THE PREVALENCE OF GENERALISED SOFT TISSUE RHEUMATISMS IN TURKISH MEDICAL STUDENTS

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OBJECTIVE

Studies have showed that medical students are under more stress due to hard training with regard to other students. Also, it is well known that most of the soft tissue rheumatisms have close relation with stressful conditions. But we don't have any knowledge about the prevelance of generalized soft tissue rheumatic conditions in medical students. Therefore the aim of this study was to assess the prevalence of generalized soft tissue rheumatisms (GSTR) in this population.

MATERIALS AND METHODS

Three hundred and six medical students from each grade in Medical School of Ege University, Izmir, were evaluated by a designed survey and physical examination for GSTR; including fibromyalgia syndrome (FMS), myofascial pain syndrome (MPS), benign joint hypermobility syndrome (BJHMS) and chronic fatigue syndrome (CFS). Also all participants answered Short Form-36 questionnaire for evaluating the quality of life.

RESULTS

Among the participants 191 were female (62.4%), 115 were male (37.6%) and mean age was 20.23±1.56. Fifty eight students (19%) were diagnosed with a GSTR. The distribution of the diagnoses were; 6 (2%) student had FMS, 21 (6.9%) had MPS, 28 (9.2%) had BJHMS, 1 (0.3%) had CFS and 2 student (0.7%) had both BJHMS and MPS. Fifty three (27.7%) girls and 5 (4.3%) boys were diagnosed with a GSTR ($p<0.01$). Nineteen (32.8%) students with a GSTR diagnose had trigger points and 20 (34.5%) had taut bands where it was 0% and 0%, respectively in healthy students ($p<0.01$). Physical role, vitality and mental subscores of SF-36 were significantly lower in the students having a GSTR ($p<0.05$).

CONCLUSIONS

This is the first study performed in medical students to find out the prevelance of generalised soft tissue rheumatic conditions. Although high stress and hard training the prevelance of GSTR in medical students was found similar to population. Further research is needed to explain the reasons of this situation.

OP107

STUDY OF LOCOMOTIVE PARAMETERS IN PHYSICALLY COMPETENT WOMEN

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INTRODUCTION

Locomotion in the literature is described by confusing concepts that often do not agree with the rules and terms of physics.In the study of muscle performance, movement has to be described in terms of velocity and acceleration.Each movement is the action of force along a distance in a certain time, has therefore measured as power.

AIMS

The purpose of this study was to analyze parameters of locomotor system in Greek women.

METHODS

Ninty healthy women aged 20-79 years (yrs) were included in the study. Women were separated according to age decade:20-29 yrs(n=12),30-39 yrs(n=7), 40-49 yrs(n=14), 50-59 yrs (n=22), 60-69 yrs(n=13) and 70-79 yrs(n=22).None of them was taken any drugs or supplements. We studied anthropometric (weight, height, BMI) and kinetic parameters (jump height,velocity ,force,power).All performed jumping (two leg jump) on the Leonardo platform (Novotec, Pforzheim,Germany) for the measurement of the objective parameters of movement. This mechanographic device measures forces applied to the plate over time, calculates through acceleration the vertical velocity (m/sec) of centre of gravity,jump height (m) and using force and velocity it calculates power (Watt) of vertical movements.Jumping was performed as counter-movement jump with freely moving arms. Subjects with velocity <0,04m/sec in the examination were excluded.We created the new value: Helios Fitness Index (HEL.F.I.) based on the previous work of M.Runge in the German population. An HEL.F.I. value of 100% corresponds to the average value of the Greek healthy women of our material of the same age according to power/body weight parameter.

RESULTS

Height and all kinetic parameters were statistically decreased during ageing. Body weight and BMI were gradually increased. The HEL.F.I.% was significant decreased in each age decade.

DISCUSSION/CONCLUSION

The results suggest that in physically competent women a decline in the kinetic parameters is expected. Possible reasons are changes in body composition, reduction of skeletal mass and tendons properties.The HELFI% value could be a tool to assess the physical performance.Jumping mechanography gives to the clinician additional informations about locomotor system.

OP108

SHOCK WAVES AND NON-STEROID ANTI-INFLAMATORY SKIN THERAPY

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Extracorporeal shock waves therapy (ECSWT) is considered a new therapy in orthopedic and traumatology diseases. Since having been introduced to treat urinary stones in the 1980's, extracorporeal shock waves have gained wordwide acceptance not only for all patients undergoing treatment for renal or ureteral calculi but also involving musculoskeletal system. The introduction of extracorporeal shock waves for the treatment of urolithiasis revolutionized urinary stone therapy. Further applications were on other stones within the body such as gall bladder, pancreas and salivary gland stones. Its application in pain therapy, particularly in the treatment of soft-tissue pains in the vicinity of bone structures (heel spur/calcaneal spur, tendinosis calcarea of the supra and infraspinatur tendon, epicondilytis – tennis elbow -, bursitis, plantar fasceytis). In orthopedics it's a new form of therapy on wound and fracture healing, pseudarthrosis, Dupuytren's contracture. As a response to the ever graving demands solicited by patients for a quikly treatment and reintegration in work and/or sport activities (very active and competitive), some doctors have adopted agressive attitudes, resorting to a large pharmacologycal spectrum, imensurable in many cases. We noted simple principles of nonsteroid antiinflamatories agents; simple massage concepts, vibroterpy (ultra-sound – phonoforesis) and galvanic current (ionthoforesis – ionization). We try enphasise the importance, tolerance and efficiency in association of the physical agents with skin topic galenic products and their advantages for the patient. The present work presents the history of shock waves application, basic physics of shock waves generation, theories on the working mechanism of ECSWT, effects on tissue, indications, sub-indications and the concept of pneumatically generated energy in radial shock waves. In this study it was shown by image (MRI) the skin transfer possibility of contrast product (gadolinium) under pneumatically generated energy in radial shock waves. Key words: Extracorporeal shock waves therapy; Pharmacology: topic nonsteroid antiinflamatory; massage; ultra-sound.

OP109

FUNCTIONAL CAPABILITY IN PATIENTS WITH ANKYLOSING SPONDYLITIS

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OBJECTIVES

To describe the functional capability in ankylosing spondylitis patients in comparison with Rheumatoid arthritis.

METHODOLOGY

The study was carried out in the department of physical medicine and rehabilitation, Dhaka, Bangladesh from January 1998 to December 2004. A total 300 ankylosing spondylitis and 500 rheumatiod atrthritis patients were included in the study. A uniform database with inflammatory arthritis were used with standardised measurements for pain, disability and global health assessments.

RESULTS

The median disease duration is more than double in ankylosing spondylitis (10.6yrs) than in rheumatoid arthritis (4.5)yrs. 52% of rheumatoid and 47% of ankylosing spondylitis patients rate themselves eqivocal functional capacity. The functional capability of Ankylosing spondylitis patients in rheumatological setting is similar to that of Rheumatoid arthritis.

DISCUSSION

This study demonstrates the functional capability of ankylosing spondylitis patients in the tertiary care referral hospital.

CONCLUSION

The study findings prove that the global health of ankylosing spondylitis is affected much in terms of functional capability.

OP110

COUGH ASSISTANCE TECHNIQUES IN CHRONIC NEUROMUSCULAR DISEASES: REVISION OF THE LITERATURE

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INTRODUCTION

Chronic neuromuscular diseases compromise respiratory function and respiratory complications are the major cause of their morbidity and mortality, in many cases due to impairment of cough mechanisms with secretion retention and chronic aspiration. Cough assistance techniques are an important part of neuromuscular disease management. The authors present a revision of the literature concerning the efficacy of the most commonly used cough augmentation techniques.

OBJECTIVES

Report the the most commonly used cough augmentation techniques and their relative efficacy in the available evidence for the best handling and treatment of the chronic neuromuscular diseases. Methods: Revision of the articles published in the main databases on the last six years.

RESULTS

Cough augmentation can be achieved in chronic neuromuscular diseases using the cough augmentation

techniques, with mechanical insufflation/exsufflation producing a greater increase in peak cough flow than other standard cough augmentation techniques. In scoliotic subjects despite manually assisted cough and mechanical insufflation combined did not show improvement, studies have demonstrated significant benefit with mechanical insufflation/exsufflation.

CONCLUSION

There is evidence that mechanical insufflation/exsufflation has an important role of in the management of patients with chronic neuromuscular diseases, with good tolerance, supporting its widespread use in this respiratory group of patients.

OP111

MALNUTRITION AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Chronic Obstructive Pulmonary Disease (COPD) is an important cause of morbidity, hospitalization and mortality all over the world. It has several systemic effects including malnutrition, commonly seen among COPD patients. In fact, poor nutritional status, low body weight, weight loss and low body mass index (BMI) are documented independent risk factors for COPD mortality and are also related to the severity of the underlying disease. Therefore it is of outmost importance to avoid all this situations the earliest, the better. In this review the authors are going to expose the probable causes for the development of malnutrition as a consequence or aggravation factor of COPD. The different methods available to access the nutritional status of such patients will also be mentioned.

OP112

STEPWISE APPROACH TO DECANNULATION OF TRACHEOSTOMIZED NEUROMUSCULAR PATIENTS

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Tracheostomy placement is generally considered in the event of upper airway obstruction, to provide invasive ventilatory support, airway protection and clearance and, in rare cases for obstructive sleep apnea. Several mechanisms account for the preference of tracheostomy over endotracheal intubation. Albeit, prolonged invasive ventilation is associated with progressive respiratory muscle deconditioning, ventilator-induced lung injury, artificial airway related pneumonia (AAEP), and considerable morbidity and mortality. Therefore, strategies should aim at reducing time of invasive ventilatory support, with resumption of either spontaneous independent ventilation or to noninvasive positive pressure ventilation. In neuromuscular patients, decannulation can generally be attempted before complete discontinuation of ventilatory support. It depends on evidence of appropriate airway clearance (peak cough flows PCF>160L/min; maximum expiratory pressure MEP>40 cm H2O); and airway protection from aspiration (subjective swallow assessment, measures of bulbar function maximum insufflation capacity MIC; MIC-vital capacity difference; blue dye test, videofluoroscopy). If these criteria are met, the decannulation process should begin with volume ventilation support, cuff deflation, LVR, assisted coughing, wean from oxygen support. A one-way speaking valve (passy-muir-PMV) may be placed in-line with the ventilator tubing during daytime (for phonation and air stacking). After mastering both LVR and ventilation through PMV, patient should be progressively trained on use of MPPV to replace tracheostomy ventilation, with only initially nocturnal tracheostomy ventilation through PMV, and after decannulation through NPPV. Adjunctive techniques of LVR (for inflation and cough assistance), and mechanical assisted coughing should be used as needed. The authors suggest a clinical stepwise protocol for discontinuation of invasive ventilation and decannulation in neuromuscular ventilatory failure.

OP113

PHYSICAL MEDICINE AND REHABILITATION INTERVENTIONS IN NEUROMUSCULAR VENTILATORY FAILURE

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Neuromyopathic changes affecting respiratory muscles, lead to progressive ventilatory failure and subsequent respiratory complications including pneumonia, atelectasis andpremature death. Weakness of inspiratory muscles is associated with progressive decrease in autonomous tidal volumes (Vt), resulting in hypoventilation of alveolar units and hypomobility of the ribcage joints and soft-tissues. This produces progressive stiffness of the lungs and chest wall, with severe repercussions on respiratory mechanics, including increased dynamic elastance and decreased compliance, resulting in increased work of breathing and further imbalance of the capabilities/load curve of the respiratory muscles. Recent techniques in the field of Physical Medicine and Rehabilitation have been proven to have major impact in the outcomes of patients with neuromuscular ventilatory failure. Approaches include: Inspiratory support (noninvasive positive pressure ventilation); Lung Volume Recruitment (LVR) techniques for maintenance of maximum insufflation capacity (CIM) and manual cough assistance; and expiratory aids such as mechanical cough assistance (in-exsufflator). The authors present a protocol for therapeutic management of this subset of patients, emphasizing the impact on clinical outcomes, quality of life and survival.

OP114

PULMONARY REHABILITATION OF THE PATIENT WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Pulmonary Rehabilitation Programs (PRP) for patients with chronic obstructive pulmonary disease (COPD) are widely accepted as a multidisciplinary intervention to enhance standard therapy, alleviate symptoms, improve function, reduce the need of hospital cares and improve quality of life (QoL). Exercise programmes, education, non-invasive ventilation (NIV) with a bi-level intermittent positive air pressure and oxygen therapy have shown to be effective even in elderly patients with severe obstruction. Most PRP include endurance but not always strength exercises and there is no consensus on the prescription. Authors do some considerations about it. We present a clinical case of a 65 yrs man with COPD severe obstruction, cardiac right failure, obstructive sleep apnea syndrome, body mass index of 40 and hypertension that participated in a PRP. The programme emphasized education and exercise, 3 times a week over a 6-months period. Exercise consisted of 40 minute of walk on the treadmill, leg and arm ergometry and respiratory exercises. Oxygen saturation, heart rate and blood pressure were monitored and the symptoms assessed by visual analogue scale(VAS). The intensity progression was limited either by 80% of the maximal heart rate on the exercise test (ET) or score 8 in VAS. Evaluation was performed before, at the end of PRP and in the follow-up, after 1 year. This included functional respiratory tests, arterial gasimetry, electrocardiography (ECG), echocardiogram, ECG-24 hours, blood analyse, 6 minute walking test and ET on treadmill. The St.George's respiratory questionnaire and the Mahler dyspnea index were applied. Polysomnographic study was done at admission. Concluding: the exercise program at a level that induces training, NIV and oxygen therapy were safe, well tolerated and associated with improvements in exercise performance, ventilatory efficiency, QoL and sensation of dyspnea. The improvements gained during rehabilitation tend to diminish following the intensive phase of the programme. At the 1 year follow-up, the QoL and exercise endurance had decreased but hyperinflation and gas exchanges were still improving despite the decrease in forced vital capacity. The need for supplemental oxygen decreased. There was no hospitalisation. The authors discuss the results of the PPR and the advantages of NIV and oxygen therapy also during exercise.

OP115

IMPROVEMENT IN QUALITY OF LIFE WITH NON-INVASIVE VENTILATION IN PATIENTS WITH RESTRICTIVE THORACIC DISORDERS

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A wide variety of restrictive thoracic diseases have been successfully treated with non-invasive positive pressure ventilation (NIPPV) including thoracic cage abnormalities, as well as both rapidly and slowly progressive neuromuscular conditions. These disorders are fundamentally a hypoventilation derangement. NIPPV refers to the technique of providing ventilatory support to a patient with advantages over the invasive methods: it is less expensive, prolongs survival and improves comfort, quality of life, sleep and exercise tolerance. NIPPV is currently used with a bilevel pressure (Bipap®) that can be administrated in a spontaneous setting, a timed setting or both. Specific symptoms associated to nocturnal hypoventilation and signs of respiratory insufficiency are indications to implement compensation with Bipap®. Eight patients followed in consultation of Physical Medicine and Rehabilitation and included in a rehabilitation programme began Bipap®. 3 patients had amyotrophic lateral sclerosis (ALS), 2 patients had kyphoscoliosis, 1 patient had multiple sclerosis, 1 patient had congenital myopathic dystrophy and 1 patient had bulbar progressive paralysis. Respiratory function tests, nocturnal oxygen saturation using a pulse oximeter and Medical Outcomes Study Short Form 36 (MOS SF-36) score were recorded before and 6 months after Bipap® support. All patients are well adapted to Bipap® as monitored by the hours of utilization and increase in nocturnal oxygen saturation. The rapid neurological decline is evidenced by the MOS SF-36 score in ALS patients. Patients with more progressive neuromuscular pathology and kyphoscoliosis improved quality of life. In conclusion and as described in literature Bipap® is an important therapeutic method responsible for improve in quality of life in stable pathology and should began in earlier stage to a better tolerance.

OP116

NON-INVASIVE VENTILATION IN AN ALS PATIENT WITH PARADOXICAL RESPIRATION

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INTRODUCTION

Patients with severe diaphragmatic weakness have dyspnea, orthopnea, rapid shallow breathing and paradoxical respiration. In amyotrophic lateral sclerosis (ALS), a neurodegenerative disease of the upper and lower motor neurons, diaphragmatic paralysis is a later frequent event. Non-invasive ventilation (NIV) is the only effective non-pharmacological therapeutic that prolongs survival and improves the quality of life in these patients.

AIMS

To report the therapeutic benefits of non-invasive ventilation in an ALS patient who presented parado-

xical respiration. Case report A 75 year-old man was referred to our Neuromuscular Unit with progressive asymmetric weakness of the four limbs (beginning in the lower limbs), dyspnea at rest and severe fatigue for the last two years. On observation, he was polipneic and had orthopnea, a rapid shallow breathing with a major recruitment of the respiratory accessory muscles and paradoxical respiration. His respiratory condition seemed very critical at that moment. Neurological examination showed upper and lower motor signs in the four limbs and bulbar region. Electromyography (EMG) confirmed a diffuse loss of motor units. Phrenic nerve stimulation revealed absence of a compound action potential from the diaphragm. Needle EMG of the diaphragm disclosed no electric activity but there were abundant fasciculation potentials, fibrillation and sharp-waves. Accessory muscles of respiration showed severe signs of denervation. The functional ALS score (ALS-FRS) was 20. The mean value of O2 saturation by percutaneous nocturnal oxymetry (PNO) was low (91%). The patient underwent NIV (NIV, IPAP 15,5 and EPAP 4,5). Afterwards, we observed a normal outward inspiratory motion of the chest wall and abdomen, with no use of the accessory inspiratory muscles. The patient became eupneic, with a mean value of O2 saturation of 95% on PNO. He is still alive 3 months after NIV introduction.

CONCLUSION

This report supports that NIV prolongs survival even in ALS patients with severe diaphragm paralysis at the moment of NIV onset. NIV promotes lung expansion and reduces work of the respiratory accessory muscles, thus decreasing fatigue.

OP117

COST-EFFECTIVENESS OF THE I COURSE – "LIVING WITH CORONARY HEART DISEASE", 3 YEARS AFTER!

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BACKGROUND

A randomized controlled study was performed at the "Cardiovascular Prevention and Rehabilitation Unit" concerning education, in patients with ischemic heart disease, in the year of 2003. The intervention group (n=20) attended a course of 12 hours about: Cardiac Rehabilitation/, Diet, and Psychological Factors. The control group (n=20) was under "Usual Care". They were all evaluated by questionnaires. We present here the Cost-Effectiveness of this course 3 years after, in terms of General and Cardiovascular Mortality.

METHODS

The data for this study were Clinical Data and Questionnaires about Risk Factors, Nutritional Habits, MacNew Heart Disease Health-related Quality of Life Questionnaire and Hospital Anxiety & Depression Scale – HADS. We applied the same evaluations/questionnaires, studied their survival / follow-up and health consummation / expenses, in 2006.

RESULTS

Direct and Indirect Costs of the Course (in Đ) TOTAL Professors 936,7 Administrative 50 Others 217,6 DIRECT COSTS 1.204,3 Transportations 75 Work Losts 1329,4 INDIRECT COSTS 1.404,4 TOTAL 2.608,7 Đ Health Consummations (in Đ) MEDICATION MONTH HOSPITAL ADMISSIONS EMERGENCY ROOM CONTROL 74,1 2,2 2,7 COURSE 72,6 1,5 1,3 Mortality and Follow-up: 2003 and 2006 2003 2006 MORTALITY CONTROL COURSE N=20 Evaluated=10 Lost=4 Refuse=2 General 4 (Cardiac 3) N=20 Evaluated=16 Lost=2 General 2 (Cardiac 1)

DISCUSSION / CONCLUSION

This study suggests a decrease in general and cardiovascular mortality in the intervention/course group, as savings for the National Health System, in medications and hospital expenses, with an individual expense of 130 Đ in 3 years. The major limitation was the small sample size and a difficult follow-up. For the future, evaluation moments should be yearly and more effective, as it would be desirable to reduce even more the costs of the course, so it becomes more cost-effective.

OP118

IDENTITY CONSTRUCTION PROCESSES IN PEOPLE WITH BRAIN INJURIES: A NARRATIVE APPROACH

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The multi-dimensional nature of severe brain injuries can lead to large-scale changes in patients' self-perception, changes that require the construction of effective narratives in the rehabilitation process. Following the hypothesis that in their identity construction, humans strive for creating meaningful life-long narratives, the present study explores the use of narratives by people with brain injuries in their identity construction process. The study utilizes the phenomenological-interpretative methodology. It is based on a comparative analysis of 12 life stories of people who suffer from severe brain injuries for at least 10 years. Life stories were produced from in-depth open-ended interviews. In the analysis of the narratives, a special attention was made not only to changes in identity contents, but also to the impact of the brain injury itself on the patient's ability to construct a coherent story, due to the neurological damage and the resulting decline in cognitive capabilities (e.g. conceptualization and memory). A preliminary analysis of the narratives reveals some consistent patterns, such as long-range post-trau-

matic symptoms, impacts on social adaptation and inter-personal relationships, feelings of rejection and low level of self-efficacy. Moreover, participants repeatedly expressed feelings of descent, or even shattering, of consistency and unity experiences, that are vital to ones identity construction, even up to a point of experiencing identity "deletion" and a stressful need to re-build it from its foundations. In their narratives, the patients have also reflected a very low level of realistic understanding of the nature of their injury. This resulted in an urgent need for support, information, and "external" recognition by the clinical-rehabilitation establishment and personnel on one hand, and ambivalence, resentments and resistance to treatment on the other hand. Such conflicts were aggravated when the issue of self-identity re-construction was ignored. Our results indicate the potential of the narrative approach in better understanding and improving the rehabilitation process from severe brain injuries.

OP119

ACQUIRED BRAIN INJURY AND DRIVING

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INTRODUCTION

Among the population who have suffered a brain injury obteining the optimum quality of life is an important issue. The capacity to drive can help these people to increase their quality of life, because it gives them more autonomy, and they can move around alone. 21 patients with Acquired Brain Injury were tested using the FIAT AUTONOMY SYSTEM

AIMS

To create a control group for the validation of the information obtained with the Fiat Autonomy Simulator. ¨ To evaluate the capacity of reaction of the patient with external stimuli. ¨ To evaluate the physical skills of the patient as driver. ¨ To evaluate the need of possible adjustments of the vehicle. ¨ To evaluate cognitive residual capacity of the patient. – To evaluate de end visual capacity of the patient.

MATERIAL AND METHODS

The test consisted of : -The creation of three groups: a control group of 42 patients, a group of 15 patients with stroke and group of 18 patients with traumatic brain injury (TBI). A clinical examination including cognitive, motor and visual abilities. -The Wechsler test was used for cognitive ability. -The Stroop test was used to measure mental speed reaction. -All subjects were tested using the Fiat Autonomy Simulator. -Adequated results in cognitive and visual test are absolutly necesary for include them in the study.

RESULTS AND CONCLUSIONS

The results curretly obtained show an increased time of reaction in visual stimulus in the stroke group in contrast to the control group. In addiction to the stroke group is less handy than the control one. There are no statistical differencies between TBI and control group. However we pretend to define the objective parameters to be able to select the possible candidates for driving among the group of affected.

OP120

LUMBAR DISC PROSTHESES: IS THERE A REHABILITATION PROTOCOL?

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INTRODUCTION

The recent years have witnessed an increasing interest in lumbar disc replacement surgery for patients with chronic low back pain due to degenerative disc disease. However, the postoperative care and rehabilitation programme for these patients has not been adequately determined.

AIM

This prospective study aims to define the characteristics, outcome, postoperative care and rehabilitation principles of patients who have had disc prosthesis surgery in the V.K.V American Hospital, Istanbul, Turkey.

METHODS

The study was performed on 16 consecutive patients who had single level degenerative disc disease, disc height of more than 4 mm, positive discography, intact facet joints, unresponsive to conservative treatment and minimal invasive procedures. There were 8 males and 8 females with an average age of 39. Four of the patients also had radicular findings. Primary outcome criteria were visual analogue pain scale (VAS) and Oswestry Questionnaire. Secondary outcome criteria were independence in activities of daily living and duration of hospital stay. Follow up examinations were performed at 6 weeks, 6 months and one year after surgery. Mean follow-up period was 12.4 months. The rehabilitation protocol prepared by the PM&R department consisted of active rest and observation of low back protection principles initially. Active exercises began 6 weeks postoperatively. Participation in sports activities was forbidden for 3 months.

RESULTS

Preoperative resting and movement VAS scores were 6.09 and 9.18 respectively. The scores decreased to 3.27 ve 2.0 at 6 weeks post-op and 2.30 ve 1.54 at 6 months post-op. The decrease in pain scores was significant at $p<0.01$. Mean preoperative Oswestry score was 79.45

which decreased to 37.72 at 6 weeks post-op and 28.90 at 6 months post-op. The decrease in Oswestry score was significant at p<0.01. Independence in activities of daily living was possible at a mean period of 2.1 weeks. There were no complications related to surgery or the rehabilitation protocol in any of the patients.

CONCLUSION

Our postoperative care and rehabilitation program for disc replacement surgery has been successful in satisfying the primary and secondary outcome measures used in this study.

OP121

VERTEBRAL MANIPULATION EFFECTIVENESS IN CERVICALGIA

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INTRODUCTION

Randomised controlled trials (RCTs) sistematical reviews represent the greatest scientific evidence in evidence based medicine (EBM) hierarchy.

AIMS

To evaluate vertebral manipulation effectiveness and safety in mechanical origin cervicalgia.

METHODS

An exhaustive research has been performed in Medline, Cinhal, Embase, Amed, Pedro, Mantis, Icl, Scisearch and Cochrane Controlled Trials Registrar. Only sistematical reviews and RCTs metaanalisis publied since 1990 until 2005 have been selected.

RESULTS

The role of manual therapy in cervical pain, according to the searches, is: -1990: 5 low quality RCTs. Quality trials are needed. -1993:contradict evidence results. -1995: 14 RCTs. No RCTs for manipulations and 3 low quality RCTs for mobilisations. -1997: 20 mid quality RCTs. Better results with manual therapy and exercise, than the control group. -2002: 33 RCTs selected, 42% high quality. No evidence that manipulations are better than control. -2005: 12 RCTs, 4 scored above 50 (possible 100), 2 positive and 2 negative conclusions. The difference in benefit between exercises and manual techniques or other physical medicine agents, and the one between strengthen and resistence exercises remains unclear. The more useful technique and dosage or if certain subgroups would show a benefit with multimodal care is not possible to determine. Therefore, evidence about the effectiveness of manual treatment remains uncertain. Most estimations show that the evidence of severe accidents is rare (1 per milion). Wallenberg syndrom, disection or thrombosis of vertebral or carotidal arteries and the dammage of encefalic trunk are commonly described.

DISCUSSION

Comparison between trials becomes difficult because of the wide variety in manipulative techniques and practitioners. Almost all authors point out that high quality and long term trials are needed in order to stablish manual medicine´s effectiveness and safety precisely.

CONCLUSION

There is strong evidence for multimodal care in mechanical subacute or chronic neck disorders with or without headache in terms of pain, function and perceived effect; moderate evidence against stretching and strengthening programs for miofascial pain in neck and shhoulder; limited evidence for mobilisation in acute wiplash; uncertain evidence in acute cervicalgia; no evidence in radicular cervical disorders. There is limited evidence for exercise in combination with manual therapy in chronic radicular cervical pain.

OP122

SEGMENTAL NEUROMYOTHERAPY IN VERTEBRAL MYOFASCIAL PAIN SYNDROME

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INTRODUCTION

Patients with chronic vertebral pain are the most common challenge for PMR specialist. What can we do? Diagnose segmental spinal sensitization: hyperalgic dermatome, sensitized myotome manifested as Tender muscle spots (Tms) and Trigger points (Trp), look for sensitized sclerotome and sympatotome accoridng to Fisher AA and M Imamura method.

AIMS

Even in outpatient service, we can perform diagnosis, dry needling of painful interspinous muscle and associated myotomal painful spots. If followed by 5-10 min massage of treated Tms eradication of taut band responsible for pain can be achieved. Patients leave us happy.

METHOD

21 patients with chronic cervical, thoracal and/or lumbar pain. Tms were noted on the chart. Intensity of spontaneous Tms pain and pain to pressure is evaluated by 0-10 VAS scale. Short Pain Inventory questionnaire was used to determine overall pain and limited function. Grade 10 means the most severe pain for questions 1-4, and the most functional limitation fo questions 5-11. Therapy included dry needling of sensitized interspinous, multifidi muscles and trunk Tms followed by massage. Needling during exhalation supress sympathetic arousal and pain caused by intervention. VAS data of spontaneous pain and pain to Tms pressure after the intervention were added to the

chart. All patients had physiotherapy and back school. Control testing was done 2-6 weeks later.

RESULT

Immediately after the therapy mean spontaneous pain intensity changed from 4 to 1 (3 points VAS 0-10 with t=2.09 p<0.05) and pain provoked by pressure on Tms from 6.8 to 1.8 (5 points VAS, t=9.605 p<0.001). Difference is statistically significant. Patients demonstrated sitting down and standing up without pain, were able to put on stockings in standing position, walked with longer steps than before. Beneficial effect on pain and function persisted. Difference in mean pain intensity of treated Tms in 21 subjects between pain immediately after therapy and 2-6 weeks later was not statistically significant (0.3 points VAS t=0.325 p>0.05 in relaxed standing position and 0.6 VAS t=0.264 p>0.05 on pressure). Limited function evaluated by Short Pain Inventory (Cleeland) diminished significantly on control testing.

CONCLUSION

Neuromyotherapy offers immediate relief of pain and improvement of function as good start for physiotherapy and rehabilitation process.

OP123

VERTEBRAL DEFORMITY ASSOCIATED TO SPONDYLOCOSTAL DYSOSTOSIS

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Hospital Ramon y Cajal

INTRODUCTION AND OBJECTIVES

We present a retrospective study of 31 patients with vertebral deformity associated to congenital vertebral and rib malformations in spondylocostal dysostosis. Our main objective was to study this type of congenital vertebral deformity, attempting to establish evolutionary patterns as well as the proper prognosis for this rare entity.

MATERIAL AND METHODS

We collected data of 31 patients with a spondylocostal dysostosis who underwent clinical and radiologic studies, pulmonary function tests, and screening protocol for other congenital malformations. The patients were followed at the Rehabilitation and Paediatric Orthopaedics Departments during the last 30 years.

RESULTS

8 patients had failures of vertebral segmentation; 4 patients had failure of vertebral formation, and in 19 cases the vertebral anomalies were mixed. All patients presented thoracic vertebral malformations. Costal fusions were present in all patients, with an average number of 2. Other skeletal malformations appeared in 12 cases. 35% of patients had visceral anomalies. 45% of the children presented also deformity in the sagital plane with hypokyphosis in 9 cases. We found a relationship between the disposition of the asymmetrical vertebral anomalies and the scoliotic curve. 93% of asymmetrical costal fusions were located in the concavity of the curve. Pulmonary function test was performed on 19 patients; 63% of them presented restriction 28 patients received orthopaedic treatment and 9 patients required a surgical treatment. No relation was found between the progression of the scolitic curve and her topography, side or amplitude. The type and location of vertebral malformations, neither were factors of progression of the scoliosis.ber

CONCLUSIONS

100% of the patients presented scoliosis, with costal fusions in the concavity in all cases. The number and type of vertebral malformations was not a criteria for the severity nor the progression of the curves. The higher the number of unilateral costal fusions, the higher the Cobb angle of the scoliosis. Symmetry of the malformations is associa with a favourable prognosis for the scoliosis 77% of patients with a moderate or severe pulmonary restriction presented more than 3 costal fusions.100% of the moderate or severe pulmonary restrictions, were associated with thoracic hypokyphosis

OP124

VERTEBRAL DEFORMITY IN OBESE CHILDREN

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INTRODUCTION

Obesity is a chronic disease with a complex multifactorial nature. Childhood obesity is on the rise. Currently, in Spain, obesity prevalence in children and adolescents is over 14%. There are many risks and complications related with obesity but spinal deformity and back pain in obese children are few known.

OBJECTIVE

The purpose of this study was to assess the relationship between obesity and spinal deformity and between obesity and back pain.

MATERIAL AND METHODS

Obese children cases referred to our Rehabilitation Department from 2000 to 2005 were reviewed. We gathered a sample of 44 children. The mean age in this study was 12.2 years (range 7-17 years). Incidence of back pain and spinal deformity, and relationship between back pain and sex, book bags and physical exercises were studied.

RESULTS

28% of the children suffered from back pain which was more frequent in female. 22% of the children who car-

ried book bags had back pain. 41.17% of the children who usually do physical exercises suffered from back pain. Children with scoliosis who presented curves of less than 20 degrees of Cobb angle (minor curves) were 30%. 6% of the children presented curves of 30 degrees of Cobb angle or more. A thoracic kyphotic deformity (>45º) developed in 28% and hyperlordosis (>50º) in 16%, respectively.

DISCUSSION AND CONCLUSIONS

Obese children present a greater predisposition for developing disorders of the spine.

OP125

LOW BACK PAIN IN PREGNANT WOMEN

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Low back pain is a frequent complaint during pregnancy. Potentially all the pregnant women present some musculoskeletal discomfort, but 25% suffer from severe low back pain at some point of their pregnancy, to a degree of interfering with daily activities, work or sleep, with significant implications to the quality of life, healthcare costs and productivity. Despite this, it is usually accepted by clinics and the women themselves as a natural occurrence, so, although very frequent, it is usually poorly identified and controlled. The factors that contribute to its origin are usually related to the maternal physiologic alterations during pregnancy combined with individual predisposing factors. The etiology, therapeutic approaches and prognosis are subject to high number of controversies, existing very few controlled studies, and a lack of international diagnosis and treatment criteria. The authors reviewed the proposed causes and predisposing factors of low back pain in pregnancy, its epidemiology, clinical syndromes, diagnosis and therapeutic options, aiming to provide information about this important, yet sometimes forgotten, pathology.

OP126

SPASTICITY IN BASIC SCIENCE & IN APPLIED MOVEMENT SCIENCE, ARE WE READY TO BRIDGE THE GAP?

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Mumbai

AIM

To give new direction to the treatment of Spasticity from clinical experiences of the condition in day-to-day life of neurological patients beyond the restricted experimental evidences by Neuro physiologists.

METHOD

Records of Spastic movements on the video film showing remarkable changes achieved “hier & now” by channalizing the CNS output by influencing COM in a closed chain wherein spastic muscle is used as a tool.

RESULTS

Spasticity gave in, in all chronic stroke patients, spinal injury patients & in cerebral palsy patients & continued to have carry- over effect outside the clinical set up. In Acute stroke patients, spasticity was not allowed to surface at all & CNS was guided towards normal tone for motor recovery.

CONCLUSION

Evidences of basic science bring light to applied science. Similarly experiences in clinical movement science can give new direction to the experimentation in Neuro physiology, Muscle physiology, Muscle biology & studies on muscle forces, muscle energy.

OP127

INTRATHECAL BACLOFEN IN SPINAL CORD INJURY: PATIENT PERCEPTION

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OBJECTIVE

To assess user satisfaction and improvement in function in spinal cord injured (SCI) persons receiving long term Intrathecal Baclofen (ITB). Design: Audit questionnaire

METHODS

A user questionnaire was designed consisting of 20 questions with simple options. Questions 1-10 relate mainly to symptoms such as frequency and severity of spasms, muscle tone, pain, strength, coordination, comfort, sleep pattern and perceived body image. Questions 11-20 relate mainly to the ability to perform certain tasks such as feeding, bathing, dressing, grooming, respiration, bladder and bowel management, use of toilet, sexual function, transfers, and mobility This questionnaire was given to all 62 patients currently receiving ITB at Southport’s Spinal Centre, where this mode of therapy has been offered since 1992.

RESULTS

42 patients returned the questionnaire Symptoms questionnaire: 93% of the patients felt that their spasm severity and frequency was improved. 83% reported improvement on their overall comfort level and 71% on their sleep pattern. Adversely affected body image was reported in 13% of the patients. Function questionnaire: 75, 71 and 79% of patients reported improvement on dressing ability, transfers and outdoor mobility respectively. Indoor mobility did not improve in 37% of the patients.

CONCLUSION

These results demonstrate that user satisfaction is high in this group of patients, and suggest that impro-

vement in function ability might be possible after ITB therapy in persons with intractable spinal spasticity.

OP128

REHABILITATION MANAGEMENT IN HEREDITARY SPASTIC PARAPLEGIA

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RAMON Y CAJAL HOSPITAL

Hereditary Spastic Paraplegia is a group of spinal cord neurodegeneratives diseases with genetic and phenotypic heterogeneity. It is characterized by progressive lower extremity weakness and spasticity. It mainly affects to dorsiflexion feet and abductor hip muscles, which associate gait disturbances and increasing difficulties walking. There are two forms of presentation: pure or isolated and complicated or associated to other neurological disorders. The pure one uses to be dominant with predominant spasticity. The complicated one is usually recessive and may be associated with other symptoms such as dementia, ataxia, deafness, retinopathy... Diagnosis is based on clinical aspects and family history. Although analysis of DNA may assist in diagnosing certain forms, such testing is not widely available. Other complementary tests are MRI and EMG, which can be used to verify or eliminate other disorders. There are no specific treatments to prevent or slow the disease. At the moment it consists of a combination of rehabilitation treatment (physical and occupational therapy, and orthesis), psychological and medical management (spasmolytic agents like baclofen, dantrolene, zanaflex...) In addition, in selected candidates, injections of botulinum toxin type A or phenol may be of some benefit. Another possibility can be the neuroorthopedic surgery. We contribute with three cases followed by our service.

OP129

INTRATHECALLY ADMINISTERED BACLOFEN IN TREATMENT OF SPASTICITY: A SERIES OF CASES

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INTRODUCTION

Intrathecal baclofen (ITB) therapy became an important tool in the management of disabling spasticity unresponsive to conservative pharmacotherapy or in whom therapeutic doses induce intolerable side effects. Our SCI Unit had an aspiration of having this treatment as an option for spastic patients in our hospital for nearly 10 years. Recently, in the last three years, our Unit developed a working partnership with another hospital enhancing the referral of these patients for ITB test and pump placement. Therefore, we created a protocol to evaluate patients before and after ITB test and, when the pump was placed, to evaluate the efficacy of this therapy. Study design: Retrospective analysis of a series of cases.

OBJECTIVES

Report the evaluation method and criteria used for the eligibility for ITB therapy and short-term follow-up results.

METHODS

Review of medical records of our 5 patients that undergone ITB therapy. Clinical and functional assessment was made using the modified Ashworth scale, spasm frequency scale, visual analogical scale, tone rating scale of the adductors, measurement of range of motion, reflexes scale and quality of life scale.

RESULTS

The ITB therapy improved average scores on the scales used when comparing before and after intrathecal baclofen (ITB) therapy, with functional improvement, in the short-term follow-up of our series of cases.

CONCLUSION

ITB is an effective therapy for spasticity. It is important to use a standard evaluation method concerning spasticity, functional independence and quality of live evaluation, in order to obtain consistent results and adequate follow-up of these patients. The selection criteria and the definition of realistic goals are essential for the success of this treatment modality in severe spasticity.

OP130

SHOULDER SUBLUXATION IN A PATIENT WITH STROKE CAN FIRE (?) SPASTICITY ON TRICEPS BRACHI MUSCLE

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GENERAL HOSPITAL OF ELEFSIS

INTRODUCTION

Spasticity in a patient with stoke paresis is usual and typically follows a flexion synergy with dominant pattern the elbow flexion synergy.

AIMS OF THE STUDY

The presense and treatment of severe spasticity with dominant pattern the elbow extension synergy is extremely unusual – we found no references about this matter.

METHODS

This is a case report of a 58 obese woman with a history of untreated high blood pressure who had had a severe hemorragic stroke 2,5 years ago. After 3 months hospitalization in an intensive treatment unit she

was submitted to our rehabilitation clinic for 3 months. She went home walking therapeutically with a femurtibial-foot orthosis and total paralysis of her left upper extermity accompanied with subluxation of the shoulder. A few months later, while she could walk inside her home and use the stairs with help, she complained for severe spasticity at her upper extermity (grade 4 of Asworth scale in all examined muscle groups). The spasticity interfered and made extremily laborious her personal hygiene her upper extremity exercise course, and made impossible her moving inside her house without help. We followed our usual protocole for spasticity treatment with topical intramuscular injections with botulinum toxin type A: Ro evaluation of all joints, clinical evaluation of involuntary range of motion, Asworth spasticity grade – bedrriden and sitting, and walking pattern. We desided as we usual do to ignore the "spasticity" of triceps brachii muscle and injected the following muscles : thoracic major, biceps brachii, anterior brachial, brachioradialis, and long carpal and digit flexors.

RESULTS AFTER TWO INJECTION SESSIONS

While all other muscle groups had a grade 2 or lower of Ashword spasticity, the elbow waw fixed in full extension (spasticity grade Ashworth 5). Topical injection of botulinum toxin into triceps brachi resolved elbow extensors spasticity after two sessions.

DISCUSION/CONCLUSION

We found no references on treatment of spasticity at the elbow extensor muscles. A possible explanation of our clinical findings may be as follows: the shoulder subluxation and the subsequent protrusion fixed the arm in a position of adduction with extension t the shoulder and fired severe spasticity of the sternocleidic part of the major thoracic muscle. This leaded in paradoxical domination of the extensor synergy pattern at the elbow at the same time with the remaining of the usual flexor synergy at the hand.

OP131

A RANDOMISED CONTROLLED TRIAL OF THE MANAGEMENT OF EARLY LOWER LIMB SPASTICITY FOLLOWING ACUTE ACQUIRED SEVERE BRAIN INJURY

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This double-blind placebo-controlled trial investigated whether serial casting combined with botulinum toxin (BoNT-A) reduces the development of lower limb spasticity after severe head injury. Of the thirty-five adults (17-70 years) enrolled after meeting the entry criteria following the admission of 253 successive patients to a UK acute general hospital with severe brain injury, 88% developed spasticity within 14 days of injury. Patients were randomised to receive standard physical treatment (Group I), lower leg casting plus injections with either saline (Group II) or BoNT-A (Group III) into the gastrocnemius and soleus muscles. Assessments comprised the range of passive ankle dorsiflexion at entry and up to 12 weeks post-treatment, Glasgow Outcome Score (GOS) and modified Ashworth Score (MAS).

Results showed the mean range of improvement in the angle of passive ankle dorsiflexion was 4.59o (controls), 11.69o (cast and saline) and 13.59o (cast and BoNT-A) ($p<0.05$). Active treatment resulted in improvements in the MAS (Group II: $p<0.03$, Group III: $p<0.04$), but not in controls ($p>0.05$). BoNTX rescue treatment benefited Group I and II patients with persistent plantarflexion deformities.

In conclusion, active intervention with casting prevents talipes equinovarus deformities in brain injury patients losing ankle movement. The role of additional BoNT-A seems to enhance this but needs further investigation. Financial support was provided by Allergan and 3M Products through an unrestricted financial grant. Keywords: Head injury, lower limb spasticity, botulinum toxin

OP132

ISOKINETIC MUSCLE STENGTH EVALUATION IN FEMORAL SHAFT FRACTURES TREATED BY INTRAMEDULLARY NAILING

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INTRODUCTION

Cibex isokinetic dynamometer has been used for testing muscle strength in patients after lower limb orthopaedic surgery. In Garcia de Orta Hospital, the majority of patients with femoral fractures are admitted post surgery in the Physical Medicine and Rehabilitation department, as outpatients. The isokinetic test may be helpful for rehabilitation programme planning.

AIMS

To evaluate knee extensors and flexors strength at 3 and 12 months post surgery.

METHODS

Patients aged 16-65 years admitted in the trauma department, from 2004 onwards, treated for isolated femoral shaft fractures by intramedullary nailing, and submitted to the same rehabilitation treatment in the PMR department for an average of 115 days. No further treatment took place. An isokinetic test was performed at 3 and 12 months post surgery. Peak torque deficit (extension and flexion) and ratio (hamstrings/quadriceps) at 2 angular velocities (60º/s and 180º/s) were measured.

RESULTS

11 patients were included. Mean age 23 years ± 7,6 (16-41). Men 54,5%. The left limb was involved in 54,5% of the patients. Isokinetic test: PT deficit – In extension there was a deficit in the involved side at 3 months with both velocities: 60º/s-40,9; 180º/s-37,7. There was an improvement from 3 to 12 months (60º/s-19; 180º/s-18,44), statistically significant for the 180º/s velocity only (p<0,05). In flexion a minor deficit was seen with both velocities at 3 months (10,7 and 10,8) and at 12 months (7,22 and 7,33), with a statistically non significant (p>0,05) improvement at 12 months. Ratio – A statistically significant difference (p<0,05) was observed between involved (I) and uninvolved (UI) side at 3 months with 60º/s velocity: 70,2 (I); 43,3 (UI). At 12 months (with 60º/s) no significant difference was observed between both sides (I-58,56; UI–51,67). With 180º/s velocity there was a significant (p<0,05) difference between both limbs at 3 months (I-108,67; UI-75,8) and at 12 months (I-86,33; UI-62,44), with a significant (p<0,05) improvement in the involved limb at 12 months.

CONCLUSION

The isokinetic test results showed a muscle strength deficit mainly in the involved limb quadriceps at 3 months, with an improvement at 12 months, but a persistent disturbed ratio (hamstrings/quadriceps) with 180º/s velocity at 12 months in the involved side. In spite of the small number of patients included in this study, these results can be taken into consideration when planning future rehabilitation programmes.

OP133

EFFECTS OF FATIGUE ON MUSCLE COACTIVATION AROUND THE KNEE IN UNIVERSITY SOCCER PLAYERS

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INTRODUCTION

The muscular coactivation is the activation of the antagonist muscles during the voluntary contraction of the agonist muscles.

AIMS

The main aim of the current study was to characterize the muscular coactivation's pattern, occurred on the concentric movement of extension of the knee's articulation, during the application of an isokinetic fatigue test made to university soccer players. The other aim of this study was to examine the influence of the angular position in the fatigue's pattern of the muscular coactivation.

METHODS

Eighteen male university soccer players were examined (age: 21,33±2,11 years; weight: 69,72±5,51 kg; height: 174,78±5,30 cm). The isokinetic fatigue test protocol consisted in the execution of twenty-two reciprocal flexion and extension movements in the knee's articulation at 60º.s-1 angular velocity. The electromyographic activity was collected from the rectus femoris, vastus lateralis, vastus medialis (agonists) and biceps femoris (antagonists) muscles, from the dominant lower limb. The average moments, iEMG agonists and iEMG antagonists were calculated for each movement for three angular intervals (10-33º, 34-57º and 58-81º). Twenty repetitions were analysed.

RESULTS

The resultant joint moment reduced significantly both at the extension and at the flexion stages. The iEMG agonist activity of the rectus femoris, vastus lateralis and vastus medialis muscles increased significantly at the beginning of the test. After the initial increase, the iEMG agonist activity of the rectus femoris and vastus lateralis muscles didn't suffer any significant changes until the end of the test, while the iEMG antagonist activity of the vastus medialis muscle registered a significant decrease. The iEMG antagonist activity was constant during the test and exposed a similar pattern in all the angular intervals (17,78 to 24,56%).

DISCUSSION/CONCLUSION

The antagonist muscular activity doesn't appear to be influenced by the fatigue of the agonist or the antagonist muscles (observed while agonistics). The antagonist muscular activity may assume a prevailing role in the knee's articular stability maintenance and seems to increase the contribution of the antagonist moment to the resultant joint moment with the fatigue's progression.

OP134

EFFICACY OF ONCE A WEEK EXERCISE PROGRAMME IN POSTMENOPAUSAL WOMEN

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Two of the most frequently discussed items on efficacy of physical conditioning are the composition of exercise programme and its frequency.

AIMS

To prove the differences in fitness between postmenopausal women which attended an once a week exercise programme and those who did not, and to confirm the programme's efficacy.

METHODS

Twenty postmenopausal women (mean age 65 ys) that attended the exercise programme once a week in at least three consecutive years were included in the test group. There were 20 healthy women of the same mean age who did not attend the exercise programme in the con-

trol group. The outcomes were shoulder range of motion (ROM) (distance between thumb and the wall behind the person), lateral deviation of the trunk (distance between the middle finger and the floor), grip strength (measured by vigorimeter), muscular capacity of the legs (number of rises from a chair in one minute) and trunk extensors (sustained trunk extension time), and balance (standing on one leg time with eyes open and closed).

RESULTS

Women from the test group had statistically significant (SS, P<0.05) better results in all of the following outcomes: right shoulder ROM (1.6cm: 2.8cm; lateral deviation of the trunk (15.4cm: 12.6cm), left hand grip strength (50.1kPa: 44.9kPa), and balance – standing on one foot with eyes closed (11.2s: 8.8s). SS was higher for the left shoulder ROM (1.6cm: 3.4cm, P<0.01), muscular capacity of trunk extensors (53.4s: 38.6s, P<0.01), and balance test – standing on one foot with eyes open (33.4s: 19.4s, P<0.001). The only two outcomes in which we did not find the SS difference were right hand grip strength the right hand (51.4kPa: 47.4kPa) and legs muscular capacity (26.8x: 24.4x).

DISCUSSION/CONCLUSIONS

Our results are comparable with those of other similar studies. There are no doubts on efficacy of a three times a week exercise programme but our data suggest that once a week exercise programme (formed and conducted by the physiotherapist) can also improve range of motion, muscular capacity and balance in postmenopausal women.

OP135

THE FIRST YEAR OF AN INPATIENT REHABILITATION UNIT IN PORTUGAL'S CENTRAL REGION

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INTRODUCTION

S. Teotónio Hospital is a general hospital of Portugal's central region with 672 beds. In 2005.03.21 the Department of Physical Medicine and Rehabilitation opened the inpatient unit, which disposes of 8 beds, 4 for male and 4 for female patients.

OBJECTIVE

The objective of this study is to describe the characteristics and the evolution of the patients treated in the first year of activity of our inpatient rehabilitation unit.

MATERIAL AND METHODS

A retrospective study of the patients treated in the first year of our inpatient unit, which were discharged until 2006.03.21. Of the 50 patients treated we reviewed the inpatient files of 46. We developed a protocol that contained data about: sex, age, mode of referral to our unit, pathology, Functional Independence Measure (MIF), previous surgery, physical medicine and rehabilitation treatments, psychological assistance, urodynamic study, vesical training, assistance devices prescribed, complications, time of inpatient stay, after discharge destination and occupation rate of our unit.

RESULTS

sex: 58,7% male, 41,3% female; median age: 50,3 years; referral: other services of our hospital (60,9%), other hospitals (21,7%), outpatients of our department (17,4%); predominant pathology: spinal cord injuries (32,6%), cerebrovascular accidents (32,6%); median MIF at entry: 69,3/126; median MIF at discharge: 96,6/126; main complications: urinary infection (19,6%), adhesive capsulitis of the shoulder (8,7%), pressure sores (4,4%); median inpatient stay: 51,8 days; after discharge destination: outpatient rehabilitation (65,2%), outpatient consultation (21,7%), consultation of other specialties (15,2%), inpatient rehabilitation center (4,4%); occupation rate: 89,8%. All patients completed an interdisciplinary inpatient rehabilitation program, receiving approximately 5 hours daily individual therapy (physical, occupational and/ or speech therapy, if appropriate).

DISCUSSION

Previously to the opening of our inpatient unit the patients who required an intensive rehabilitation program had to be transferred to rehabilitation centers located 100 and 300 km away from our hospital. This proceeding was associated with costs and carried troublesome for patients and their families. The advent of our inpatient rehabilitation unit is of great value for the severe disabled patients who can so undergo their rehabilitation nearer from their residence.

OP136

PERIPHERAL NERVE INJURY ASSOCIATED WITH SHOULDER TRAUMA. A TWO YEARS RETROSPECTIVE STUDY.

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INTRODUCTION

Nerve injuries after trauma in the shoulder region are being recognized with increasing frequency in our department. Diagnosis of these potentially disabling nerve lesions can often be difficult because of the vague presentation.

AIMS OF THE STUDY

To improve patient care by outlining the appropriate information gathering and decision making processes involved in managing nerve injuries after trauma in the shoulder region. Material and

METHODS

A retrospective study of 18 patients with various types of shoulder trauma accompanied with 23 nerve injuries have being treated during the last two years in our department. The nerve injuries included: 9 axillary, 1 posterior branch of axillary nerve, 2 suprascapular, 2 musculocutaneous, 3 median, 2 ulnar, and 4 radial nerves. Shoulder pain and muscle weakness of the involved muscle groups were the main symptoms in all patients. Follow up averaged 20 months and included: evaluation by questionnaire, repeated physical examinations, serial electrophysiological studies, continous rehabilitation programme. Only one surgical nerve exploration and repair was necessary.

RESULTS

There were 11 complete or satisfactory nerve recoveries, 2 patients had middle outcome, and one patient with poor recovery of hand function. An important fact of the time-course of recovery appeared to be the type of injury, while early diagnosis and close medical follow up seem to play important role in the prevention of complications: poor nerve results were noted in one patient with severe initial dennervation as shown by initial electromyogram, while two patients with coexistence of uncontrolled diabetes mellitus and alcoholism had middle and prolonged recovery.

DISCUSSION / CONCLUSION

Prompt and correct diagnosis is important and early diagnosis seems to be a factor of satisfactory outcome. In most cases of nerve damage during shoulder trauma the nerve injury is a neuropraxia and in almost all cases it recovers with time. Repeated EMG studies are necessary in order to assess the type of the injury and follow up nerve recovery. All patients with brachial plexus injuries need to undertake exercises, to retard muscle atrophy and prevent secondary joint problems. It is important that the patient develops a long-term view of Brachial Plexus injury rehabilitation.

OP137

SEVERE TRUMATIC LESION OF THE POSTERIOR BRANCH OF AXILLIARY NERVE AFTER SHOULDER TRAUMA

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INTRODUCTION

Lack of information related to current treatment protocol and outcome expectations of peripheral nerve injuries at the shoulder region hinders our efforts to provide appropriate treatment services to those in serious need.

AIMS OF THE STUDY

According to bibliography axillary nerve lesion is quite often in shoulder trauma. However, a peripherally located lesion of the posterior branch of the axillary nerve alone seams to be very rare and quite easy to misdiagnose.

MATERIAL AND METHODS

This is a case report of a 48 year old builder had had an acute sharp pain at his right shoulder during a pleiometric movement of his arm (in a position of overhead flexion-abduction) 2,5 years ago. 4 months later, a delayed MRI examination of his painful paretic shoulder revealed: "full right rotator cuff tear... without atrophy of suprascapular muscle, lipoid atrophy and edema of the right deltoid muscle...there is a ganglion at the glenohumerous joint in conduct with the axillary nerve". He underwent surgical remove of the ganglion along with repair of his rotator cuff tear 4 months after the initial trauma.

RESULTS

2 months after the surgery he was referred to our electrophysiology department with persistent muscle atrophy and severe weakness of the right deltoid muscle (less than 30o of voluntary shoulder abduction). The electrophysiologic study revealed: severe neurapraxia of the posterior branch of the right axillary nerve accompanied with mild axonal loss". 2 years later he presents obvious amelioration of muscle atrophy of the posterior part of the deltoid (3/5), with 5/5 of muscle power at the medial and anterior parts.

DISCUSSION & CONCLUSION

Every painful shoulder with paresis or paralysis that does not improve within 7-10 days of conservative treatment, should be directly investigated with an MRI. The possibility of coexistence of nerve damage should be always confirmed and followed up with regular electrophysiologic examination. Those affected by nerve injuries often experience delayed diagnosis. Early intervention by specialized physicians and experienced therapists is essential for optimum functional improvement related to peripheral nerve injuries at the arm.

OP138

EVALUATION OF PERIPHERAL NERVE REGENERATION BY SOMATOSENSORY CEREBRAL EVOKED POTENTIALS

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INTRODUCTION

Regeneration of injured peripheral nerves is long lasting process.

Aim of the study is demonstration of usefulness of Somatosensory Cerebral Evoked Potential (SsCEP) method for objective evidence of early peripheral nerve regeneration after the nerve injury.

METHOD

26 patients with traumatic injury of 32 median or/ and ulnar nerves at wrist level were studied. Regeneration of 16 ulnar and 16 median nerves was followed up for 31 months. Out of 32 nerves, 29 were treated by suture and three by autotransplantation. In clinical examination important is clinical sensory testing with evaluation of touch sensitivity and touch localisation with closed eyes. Manual muscle testing evalutes motor performance. Neurophysiologic evaluation consisted of Antidromic sensory neurography with trial to record sensory antidromic nerve action potential (SNAP), motor neurography, standard needle EMG investigation and SsCEPs onelectrical stimulation of distal and medial phalanx of index, third and little finger on L and R hand. Stimulus intensity was 3x treshold, duration 0.2ms. SsCEPs were recorded from C3` and C4`,reference Fz 10-20 EEG system. Recording time was 200ms after stimulation. 512 responses were averaged.Testing was done 1, 3, 6, 9, 12, 24 and 32 months after operation.

RESULTS

Touch sensitivity returned in all patients. Mean time was 4.19 months. SsCEPs were recorded in all cases but later. Mean time was 6.84 SD 4.02. Motor reinnervation was proven by needle EMG in 29 casses out of 32. Mean time was 7.81 months, SD 5.05. SNAP was measurable in 7/32 nerves only, later than other tests. Mean time was 15.7 months, SD 8.48.

DISCUSSION

Subjective sensory perception is the most sensitive sign. SsCEP test is the most sensitive electrodiagnostic test. It`s specificity is determined by selective stimulation of regenerating fibers only. Needle EMG is 100% specific for motor fiber regeneration. Time delay is caused by neuromuscular junction maturation. When SNAP evoked, as 100% specific test, easier to perform, it is recommanded for follow up. But, out of 32 nerves, it was measurable in 7 patients only. SsCEPs present dynamic changes of latencies and shapes during early sensory regeneration, reflecting slow, small desynchronized peripheral afferent volley and cerebral plasticity. Earliest is positive wave of 60ms or more latency. Later on latency shortens and next negative wave appears, enormously enlarges and diminish when SNAP of 2-4uV is measurable.

OP139

RADIAL TUNNEL SYNDROME:CRITICAL OUTLOOK

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INTRODUCTION

radial tunnel syndrome (RTS) is a controversial clinical intity

AIM

assessment of sensory and motor conduction of radial nerve in proposed radial tunnel syndrome (RTS) patients. Patients: 18 Patients diagnosed clinically as RTS constituted the patients of this work. Patients proved by clinical and electrophysiological testing having neuromuscular âĐ“ disease were excluded.

METHODS

motor conduction measurement was conducted after jebsen. Sensory conduction were conducted after Sherali and Sandler.

RESULTS AND DISCUSSION

females were 12 cases and males were 6. Their mean age was 47years.The dominant hand was affected unilaterally in 16 patients, the nondominant in 2.The mean duration of suffering was 7 months. Radiating numbness along the forearm with sense of tightness were present in all patients. Painful forearm extensors weakness was encountered in 6 patients. Localised conduction slowing along superficial radial sensory nerve less than 53 m/s was present in 4 patients, radial nerve motor conduction slowing along the same segment less than 49.8 m/s in was present 1 patients.

CONCLUSION

Radial nerve is unlikely to be compressed in the proposed radial tunnel. Still the nerve could be involved locally by perineural reactions as the result of adjacent soft tissue microtraumata.

OP140

ACUTE NEUROPATHY OF BOTH THE AXILLARY AND SUPRASCAPULAR NERVE, A CHALLENGING CASE.

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INTRODUCTION

The authors describe a case of a patient that developed axillary and associated suprascapular nerve paralysis without any preceding knowledge of trauma or irritation.

AIMS

We want to emphasize the importance of the clinical examination, mainly the analytic muscle function tests, and the diagnosis work-up to find the aetiology of this challenging case Case Report A 44 year-old male patient, with a prior history of epilepsy, was send to our consultation due to complaints of weakness of shoulder girdle muscles, which started when he woke up and had a 2 month evolution period without improvement. An electromyography and nerve conduction study that was performed one month after the beginning of complaints revealed a recent and serious axonal lesion of the suprascapular and axillar right nerves. On physical

exam, right deltoid supraspinatus and infraspinatus muscles had grade 0 strength; all other muscles have normal strength. Hypoesthesia was found in the lateral aspect of the upper half of the right arm. There were no other relevant findings. He started a rehabiliatation program and he is going to be submitted to a RMN of the right shoulder/brachial plexus in the near future.

DISCUSSION

In the literature there are only a few case reports of severe acute lesions of both axillary and suprascapular nerve, with the remaining nerves emerging from the brachial plexus being intact. A traumatic episode during sleep or structural cause is difficult to fit in the anatomic puzzle. It is still a challenging case that we will elucidate in our presentation.

OP141

KNEE PROPRIOCEPTION IN HEALTHY SURF ATHLETES

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INTRODUCTION

Surf is a highly demanding sport where athletes need to uphold constant equilibrium against several types of platform perturbations and maintain continuous perception of movement and body position. Conscious awareness of body position and movement are predicted to be characteristics of the proprioceptive exercise.

AIMS

To determine if differences in knee joint positioning sense and kinaesthesia exist between surf athletes and healthy sedentary individuals.

METHODS

Knee joint proprioception was measured in 10 healthy surf practitioners (surf group) with a mean age of 21 years and median Tegner score of 6, and 10 healthy sedentary persons (control group) with a mean age of 21 years and median Tegner score of 3. The threshold to detect slow passive motion (TTDPM) was used to evaluate kinaesthesia and the ability to actively (RAP) and passively (RPP) reproduce passive positioning to test joint position sense. Subjects ability in those procedures was tested toward extension and flexion, using two knee angles: 30º (end range near extension) and 60º (middle range). An isokinetic dynamometer (Biodex System 3 Pro) was used to measure joint position sense and a specially build apparatus to appraise kinaesthesia.

RESULTS

Knee joint kinaesthesia differed significantly among the two groups. Subjects in the surf group had significantly low threshold values for perception of movement toward extension, from both starting positions: 30º ($p = 0.003$) and 60 º ($p = 0.000$); and also for the movement toward flexion at 30º ($p = 0.001$) and 60º ($p = 0.000$). No significant differences were found between the two groups in the joint position sense tests but significant differences were found between passive and active repositioning for both groups. All individuals were more precise in RAP.

CONCLUSION

Surf athletes appear to have enhanced knee joint kinaesthesia and, although not statistically meaningful, active repositioning mechanisms. However, this superior ability was not seen in the passive repositioning measurements. The mismatch between passive joint position sense and kinaesthesia results may perhaps suggest that these functions might work through different mechanisms. Further studies are needed to clear up this and identify what role each athletic modality as in the proprioceptive system and her relationship with performance.

OP142

DO BULBAR-ONSET ALS PATIENTS HAVE AN EARLIER RESPIRATORY INVOLVEMENT THAN SPINAL-ONSET PATIENTS?

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INTRODUCTION

Amyotrophic lateral sclerosis (ALS) is a progressive neurodegenerative disease involving limbs and bulbar muscles. The major cause of death in these patients is respiratory insufficiency. However, the bulbar-onset patients have a shorter survival than those with a spinal-onset. It is not established if the poor prognosis is related to an earlier respiratory dysfunction or to other reasons.

AIMS

To determine if the bulbar-onset patients have an earlier respiratory impairment as compared with the spinal-onset ones.

METHODS

Prospective study including 238 ALS patients regularly followed in our centre for the last 7yrs, with disease duration between 1month-8yrs and an age at presentation between 22-86yrs. All patients were evaluated with: respiratory function tests (forced vital capacity, maximal inspiratory (Pimax) and expiratory (Pemax) pressures, pressure at 100ms after an occluded inspiratory effort, blood gases); percutaneous nocturnal oxymetry (mean and lowestO2 saturation, number of dips/hour); amplitude of the motor response by phrenic nerve stimulation; needle electromyography (EMG) of the right diaphragm (interferential pattern (IP), assessing activity (Act), number of short segments (NSS));

EMG of the right internal intercostals muscles (IP, Act, NSS); functional ALS scale (ALS-FRS). It was considered as statistically significant a p<0.01 (Mann-Whitney U test with Bonferroni correction).

RESULTS

We studied 37 bulbar (group I) and 46 spinal-onset ALS patients (group II). No statistical difference was found for mean age (mean and SD– spinal: 55±10, bulbar: 61,5± 7,5) and mean disease duration (mean days and SD– spinal: 338,1± 93,7 bulbar: 297,6±115,3) at the time of the investigation. From all the measurements evaluated only Pimax and Pemax were statistically smaller (p<0,0001 and p<0,001, respectively) in group I, however with no correlation between them and bulbar ALS-FRS subscore.

DISCUSSION

This study supports that Pimax and Pemax are sensitive measurements of respiratory dysfunction in bulbar patients, and their drop cannot be solely explained by the oro-facial weakness. As no other changes were observed in group I, we suggest that diaphragm is probably not weaker, but debility of accessory muscles of respiration is relevant to interpret the results.

OP143

THE IMPORTANCE OF EXERCISE STRESS TESTIN IN PATIENTS AFTER TRANSFEMORAL AMPUTATION

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REHABILITATION INSTITUT

Fitting an old amputee patient with transfemoral prosthesis is sometimes quite difficult. A risk for cardiovascular complications in rehabilitation programs can be anticipated or decreased by the use of exercise stress testing.

AIMS

To compare the achieved load level by means of an arm crank ergometer with the decision to fit the amputee with the transfemoral prosthesis, the 6-Minute Walking Test at the admission and the energy demands of prosthetic gait at the end of the rehabilitation program.

PATIENTS AND METHODS

63 transfemoral amputees (27 women, 36 men, the average age 71.4 years) performed exercise stress testing on the arm crank ergometer by discontinuous protocol with the increase at 10 W and the 6-Minute Walking Test. At the end of the rehabilitation, we measured the walking distance covered in 6 minutes and VO2, the increase in heart and blood pressure and calculated the parameters of gait economy.

RESULTS

63 transfemoral amputees were divided into four groups according to the achieved load level: I.group:19 patients (the average age 76.7 years),achieved 10W. At the walking test, 11 patients did not walk, and the others covered in six minutes 37 m. 12 patients were not fitted with the prosthesis,7 were fitted only with the temporary prosthesis. II. group:18 patients, achieved 20W (the average age 71,5 years). 3 patients did not walk, others covered on average 44.2m in 6 minutes. 2 patients were not fitted with the prosthesis. III. group:19 patients (the average age 68.8 years), reached 30W, walked in 6 minutes on average 58.3m. All were fitted with transfemoral prosthesis. IV. Group: 7 patients (the average age 61.6 years),reached 40W or more, walked in 6 minutes on average 87.6m. All were fitted with the prosthesis. At the end of the rehabilitation, in 20 patients from groups II, III. and IV we measured telemetrically the oxygen consumption (Oxycon Mobile). In 6 minutes, they walked from 54 to 156m, the measured oxygen consumption was from 3.5 to 4.8 METs, the increase in the heart rate from 70% to 90% of the age-related anticipated increase, oxygen cost 0, 57 to 0,9 ml/kg/ m.

CONCLUSION

A risk for cardiovascular complications in rehabilitation programs can be anticipated or decreased by the use of exercise stress testing. The achieved load level is a good indicator of successful rehabilitation outcome in patients with transfemoral amputation.

OP144

ISTANBUL COMMUNITY BASED REHABILITATION PROGRAM

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INTRODUCTION

There are major challenges about disability issues in Turkey such as; lack of coverage, lack of co-ordination between organizations, lack of trained personnel. Metropolitan Municipality of Istanbul(MMI) is the local governmental organization in Istanbul. Istanbul Handicapped Center(IHC) is an institution established by the MMI for medical, vocational and social rehabilitation of disabled population, specially those with no social security in Istanbul. In the year of 2000, IHC had stared to search for a method in order to extend rehabilitation services. Istanbul CBR Program(I-CBRP) had been established to generate a model for providing services to people with disabilities living in Istanbul with the collaboration of governmental and non-governmental organizations.

AIM

The aim of this presentation is to share the experience of I-CBRP, discussing the strong and weak aspects of the program. Methods Three pilot districts of Istanbul

has been selected for I-CBRP. Total population was 1.2 million. Local units were established in the districts and teams that will work in the project had training on CBR approach and disability. I-CBRP had been run in these districts between June, 2002- December, 2005.

RESULTS

After 3 years of field work; 10252 people in three districts had been reached. Prevalence of disabled population in need of rehabilitation services was around 1%. The results of I-CBRP can be summarized as follows: • Collected disability data for planning /providing services • Identified and analysed the needs of disabled people in pilot regions • Provided access to medical care/rehab. • Provided rehabilitative care to Cerebral Palsy children who did not have social security • Provided guidance and tranining for mentally handicapped children/familiilies • Established a model for elderly care • Maintained capacity building / • Gathered self-help groups

DISCUSSION/CONCLUSION

I-CBRP is a novel model for community level rehabilitation care for disabled population in Turkey. Innovative use of local resources and governmental collaboration will enhance the success of the program. For scaling up CBR programs in other districts of Istanbul and Turkey; training on CBR is essential. Training should be given at all levels for implementing community level rehabilitative care

OP145

THE EFFECT OF CARDIAC REHABILITATION ON QUALITY OF LIFE, ANXIETY AND DEPRESSION IN CONGESTIVE HEART FAILURE

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INTRODUCTION

Patients with moderate to severe heart failure in whom exercise intolerance interferes with daily life would benefit most from increased fitness. However, these patients are frequently excluded from exercise programs although satisfactory recommendations for exercise testing and guidelines for cardiac rehabilitation in CHF exist.

AIMS

To investigate the effects of aerobic exercise on exercise capacity, quality of life (QoL), depression, and anxiety levels in a Turkish patient population with CHF.

SUBJECTS AND METHODS

50 patients with chronic heart failure in stage II-III according to New York Heart Association were included in the study. Patients were randomly assigned either to a cardiac rehabilitation group or to a control group. After randomisation, 23 patients were allocated to a weekly aerobic walking programme on treadmill, three times a week for 2 months, and 21 patients served as controls and did not recieve any exercise training. Patient and control groups were assessed by ergospirometric exercise test, Hacettepe Quality of Life Questionnaire (HQoL), Beck Depression Inventory (BDI), Spielberger Trait Anxiety Inventory (STAI) at baseline and 2 months later.

RESULTS

In the treatment group, significant increases in peak oxygen consumption, exercise time and MET levels were attained (p=0.001, p=0.001, p=0.003, respectively). Significant decreases in BDI (p=0.004) and STAI subgroups (p=0.049, p=0.023, respectively) were observed whereas there were no changes in quality of life scores. In the control group, there were no differences between baseline and 8th week evaluation in all parameters.

CONCLUSION

Patients with chronic heart failure tolerated aerobic exercise programs well, and this resulted with improvement in both physical and psychologic wellbeing, but not in quality of life in the short term.

OP146

THE ROLE OF ELECTRICAL STIMULATION AND BONE MARROW CELLS' INJECTION ON HEALING OF BONE FRACTURE

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OBJECTIVE

The possible role of either combination or as a single application of bone marrow and electrical stimulation on healing of bone fractures has still remained to be clarified. The aim of this study was to investigate the effect of electrical stimulation (ES) on bone healing with and without the support of bone marrow injection (BMI) in rabbit model.

MATERIALS AND METHOD

Bone defects were surgically made with a width of 0.8-1cm in the mid-diaphizer region of the ulna in 40 New Zelland rabbits and divided into 4 groups of treatment: group I (control) was given no treatment, group II (ES) was given ES in forms of TENS from the distal and proximal sites of the bone defect for 21 days, group III (BMI) was injected 2ml.s of bone marrow cells aspirated from distal femur, group IV (ES+BMI) was given combination of BMI and ES treatments as described above. Follow-up was at the 3rd and 6th weeks radiologically

by using the modified criteria of Lane and Sandhu and histopathologically with conventional bone histomorphometry.

RESULTS

At the end of 6 weeks trabecular thickness was 84.25±.5.76µm in control group, 128.8±2.53 µm in ES group, 127.3±2.06 µm in BMI group and 130.8±1.25 µm in BMI+ES group. Also number of trabecules were 2.75±0.75, 5.25±0.48, 5.0±0.58 and 5.0±0.41 in control, ES, BMI and combined group, respectively. ES, BMI and combined ES+BMI group had statistically significant better bone healing for all radiological and histological parameters compared to control group. But there was no statistically significant difference within ES, BMI and BMI+ES groups both histopathologically and radiologically.

CONCLUSION

Both ES and BMI provided improvement in bone healing, but the combination of these could not result in either synergistic or additive effect in this model. Further studies with different modalities of ES are still needed to clarify the potential role of this combination on bone healing.

OP147

EVALUATION OF A LONG-TERM COMMUNITY BASED PROGRAM FOR ADULT STROKE SURVIVORS

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INTRODUCTION

Previous research has established the long-term disability, restricted participation and low satisfaction of stroke survivors residing in the community. "Yad Sara" is a community based rehabilitation program designed to meet the extensive, long-term needs of severely disabled stroke survivors. This framework provides a unique service aimed at improving the well being of individuals and families living with long-term disabilities.

AIMS

To evaluate the effectiveness of the program from several aspects. a. to evaluate the functional level and stroke impact in a group of adult stroke survivors participating in a community day program; b. to compare their activity level before and after participation in the program, and c. to compare their functional level and satisfaction from life with a group of stroke survivors living at home that were not attending a continuing rehabilitation program.

METHOD

The sample included 27 participants who attended the community program (12 women, 15 men; mean age = 61.6, SD=7.4), and 56 community dwelling stroke survivors (mean age=57.7, S.D=11.6) one-year post onset (non participants). Instruments included the Stroke Impact Scale (SIS), The Functional Independence Measure (FIM), Instrumental Activities of Daily Living (IADLq), The Activity Card Sort (ACS), and the Life-Satisfaction (Li-Sat-9). The study was approved by the research committees of the respective centers.

RESULTS

The mean SIS self reported recovery score was 49% indicating a severe impact of stroke on quality of life in this group. The level of functioning in BADL (FIM) and IADL was low (mean=61.74 out of 91; 7.67 out of 23 respectively). The ACS scores of the participant group were low, however, a significant improvement in activity level after attending the program was found (t= -8.1, p=.000). The Li-Sat-9 results showed that 70% of the participants were satisfied from "life as a whole". The comparison with the non participant group revealed that participants were significantly more disabled than the non-participant group as manifested in lower FIM (t=-3.1, p=.004). However, the satisfaction rates of the participants were significantly higher than the non-participants from "life as a whole" and from their leisure situation (p=.01, p=.03).

CONCLUSIONS

The program was successful for stroke survivors improving their activity level and satisfaction. The results provide support for the efficacy of long-term community based rehabilitation.

OP148

THE COMPENSATORY MECHANISM OF WALKING WITH PARALYZED QUADRICEPS FEMORIS

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INTRODUCTION

Quadriceps femoris is considered as the major structure to maintain the knee stability during walking. Therefore, the knee-ankle-foot orthosis (KAFO) is often used as the standard prescription for patients with paralyzed quadriceps. However, it was found that many patients with paralyzed quadriceps might walk with ankle-foot orthosis (AFO). This phenomenon may lead to a postulation that to establish the ankle stability may have an important contribution to the knee control for walking.

AIMS

To explore the compensatory mechanism of walking with paralyzed quadriceps femoris.

METHODS

Ten patients with post-poliomyelitis were selected as the experiment group aged 16.7+/-0.7 yrs. Ten age matched normal subjects (age 16.2+/-1.5 yrs) were

selected as the normal control. All Polio victims had one leg involvement with weakened quadriceps femoris (muscle strength < grade 2). The 3-D motion analysis by the Motion Analysis System (Motion Analysis Co., USA) and Oxygen analysis by a gas analyzer (Cosmed K4b) were performed. The gait pattern of the paralyzed leg was compared with the counter unaffected leg and that of the normal group. Experimental conditions were walking with KAFO, AFO and barefoot. The oxygen cost (OC, VO2/walking distance) was calculated from the oxygen analysis during walking. The significant level for the differences was p value lesser than 0.05.

RESULT

The single leg support phase in patients with affected leg was similar between the condition with AFO (39.65+/-6.42%) and the normal subjects (38.29+/-2.71%), but the phase was longer than bare-foot (36.15+/-2.79%) and KAFO (36.50+/-2.12%). The maximum knee flexion in the experimental group during mid swing was greater in the condition with AFO than barefoot. The hyper knee extension was found during mid stance in the experimental group with AFO (-2.88+/-3.38 degree). OC for walking was significantly lower with AFO (0.264+/-0.049 ml/kg/m) than KAFO (0.379+/-0.057 ml/kg/m) and barefoot (0.398+/-0.062 ml/kg/m). The lowest OC was found in the normal subjects (0.169+/-0.04 ml/kg/m).

CONCLUSION

To establish the ankle stability by AFO may play an important compensatory mechanism of walking with paralyzed quadriceps femoris. KAFO may not be the best choice in this condition.

OP149

UTILITY OF LARYNGEAL ELECTROMYOGRAPHY IN VOCAL FOLD DYSFUNCTION AFTER SURGERY

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INTRODUCTION

After neck or chest surgery, reduced movement or immobility of the vocal fold may be caused mainly by two important etiologies: neurological or articular causes.

AIMS

To determine the value of laryngeal electromyography (LEMG) in discriminating between paralysis (due to neurological causes) and fixation due to articular causes (arytenoid fixation) and to evaluate how LEMG can help to classify severity of neural damage and to establish a prognosis for recovery.

METHODS

In this study, we report 92 observations of LEMG for VFD after surgery (thyroid, carotid, chest and cervical spine) using a clinically easy suitable technique of percutaneous needle insertion in the laryngeal muscles. VFD was demonstrated by indirect laryngoscopy at the otolaryngological examination.

RESULTS

Eighty of these vocal folds (87%) showed denervation signs; in the remaining 12 vocal folds, fixation due to articular cause was suspected. A statistically significantly correlation was found between the presence of denervation signs and atrophy of the vocal fold demonstrated by laryngoscopic examination. The recovery of the vocal fold dysfunction was also significantly correlated with the results of the LEMG.

DISCUSSION/CONCLUSION

This study showed the value of LEMG in assessing the etiology and in predicting the recovery of VFD. Despite this valuable adjunct in the study of vocal fold dysfunction (VFD), LEMG remains rarely performed in clinical practice.

OP150

PARTIAL BODY WEIGHT SUPPORT IN CHRONIC HEMIPLEGICS: A RANDOMIZED CONTROL TRIAL

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Partial body weight support is a promising method in the management of the hemiplegics' patient.

AIM

To compare the efficacy and efficiency of gait trainer with conventional treatment on the gait treatment of chronic vascular hemiplegics.

METHOD

40 chronic post-stroke hemiplegics were submitted to a research. The inclusion/exclusion criteria included: first ever stroke in a chronic stage, motor stabilized and with motor deficits; age >18 and <80 years; cognitive (MMS >19) and communication capacities of understanding the treatment; absence of cardiac, psychological and orthopaedics contra-indications. Patients were randomized into two groups: the Control Group (CG) that used, during five weeks, 5 times a week, the Bobath method; the Experimental Group (EG), during the same time and frequency, used the Gait Trainer (REHA-STIM). The treatment time in each session was the same for both groups. Assessment tools: Motricity Index; Toulouse Motor Scale – TMS; modified Ashworth Spasticity Scale; Berg Balance Scale – BBS; Rivermead Motor Score; Fugl-Meyer Stroke Scale (Lower Limb and Balance); Functional Ambulation Category; Barthel Index – BI; 10 meters walking test and gait cycle para-

meters; Time up and Go test (TUG); 6 minutes walking distance test; Step test. EG and CG did these assessment before treatment (T0), just after treatment (T1), and follow-up three months later (T2). Patients at T1 and T2 answered to a satisfaction and efficiency treatment self-questionnaire (Likert scale).

RESULTS

CG and EG were homogenous in all the variables at T0. CG and EG showed improvement in almost all the assessment scales after treatment (T1), although only some with relevant differences. EG showed statistically relevant improvement on T1 and on T2 in TMS; BBS; 10 meters velocity and cadence; 6 minutes and step tests. EG also showed significant differences in the BI mobility items. CG only showed statistically significant improvement after T1 in TMS, 10 meters cadence, 6 minutes and step tests. CG never showed improvement in T2.

CONCLUSIONS

Both group of chronic hemiplegic's patient improved after treatment. Partial body weight walking training is a better rehabilitation treatment than the Bobath method showing more improvement after treatment, maintaining progresses after 3 months.

OP151

FATIGUE, FUNCTION, AND QUALITY OF LIFE IN MULTIPLE SCLEROSIS

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INTRODUCTION

Multiple Sclerosis (MS) is a progressive disease with a high incidence and prevalence, and with a remarkable impact in the function and quality of life of the patient. The fatigue is a frequent clinical element in MS that interferes in the performance of daily life activities and in the function, compromising the quality of life.

AIMS

To know the impact of MS in the function and quality of life and, in particular, the importance of fatigue in this context. To identify, in the domain of fatigue, the more relevant variables (cognitive, physical, and social).

METHODS

The sample comprises 33 patients with MS diagnosed at least 5 years ago, followed in the appointment of Physical and Medicine Rehabilitation of the Coimbra University Hospitals. Assessment tools: Barthel's Index and Functional Independence Measure (FIM) (to the functional evaluation), Fatigue Impact Scale (to evaluate fatigue), and SF-36 (to evaluate the quality of life). The statistical analysis used the SPSS 10 program. Results 33 patients were evaluated (22 females) with a mean age of 44.7 years old (Standard Deviation (SD) 11.3), most of them have a medium or high level of education, 33.3% of which are retired. Barthel's Index presented an average of 89.7 (SD 10.9), while FIM of 120.4 (SD 6.2). The Fatigue Impact Scale showed an average of 68 (29.8), with cognitive, physical and social variables with an average of 12.9 (SD 9.4), 22.8 (SD 6.2), and 32.4 (SD 17.7), respectively. It was found a statistically significative association between Barthel's Index and FIM. There were no significative correlations between fatigue and functional indices. The patients with lower levels of fatigue exhibited a higher quality of life.

DISCUSSION/CONCLUSION

Fatigue showed a higher functional impact in its physical and social variables. The assessment and therapeutic of fatigue must be present in the domain of the functional rehabilitation programme.

OP152

ANALGESIA IN ACUPUNCTURE. SCIENTIFIC EVIDENCES

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INTRODUCTION

Acupuncture consists of inserting needles into the body surface and sometimes even into mucus membranes. Present research indicates that by inserting needles we can trigger a stimulation of the central nervous system through the peripheral receptors, causing an increase or decrease of different substances with subsequent analgesia. Acupuncture neurophysiologic mechanisms In 1985, Ciszek found a decrease in the electrical resistance of the skin at the acupuncture point locations. Bossy, in 1975 had seen that depending on the depth of the needle insertion, different nerve fibres were stimulated. In 1994, Lee presented the Thalamic Neuron Theory, which could defined acupuncture canals. In 1976, Pomeranz started to do research into the internal opioid system and its implication in the acupuncture analgesic effect. Some neurotransmitters and neurohormones have been found to increase or decrease in patients' cerebrospinal fluid after an acupuncture treatment. In 1979, Ren and Han verified that continuing electroacupuncture application led to a gradual decrease in the analgesic effect. Later, Zhou after electroacupuncture, observed a 39% decrease in the analgesic effect of morphine. The skin is closely connected to the central nervous system by peripheral receptors. These receptors can be stimulated by acupuncture needles and then they influence the CNS. Chronic pain goes along the C-fibres, which are the slowest conducting

fibres, and acute pain goes along the A-delta fibres. Pain impulses reach to different structures in the CNS. Acupuncture neuronal mechanisms focus on the stimulation of the endogenous analgesic systems. At the infratentorial level it focuses on three main structures: The periacueductal grey substance, the magnus raphe nucleus and the inhibitor complex, located in the dorsal horn of the spinal cord. The magnus raphe nucleus neurons, which have their nerve-endings in the spinal cord inhibitor system, release serotonin and the rest of the system uses the encephalins as neurotransmitters. These encephalins are responsible for the blockage of the calcium canals in the inhibitor neurons. At the segmentary level, the most important experimental model of the metameric inhibition of pain is Melzak and Wall´s Gate control Theory. Regarding the brainstem level of action, in 1978, Kerr et al verified that by cutting at the C1 level, acupuncture analgesia was not produced; but if the section was carried out higher, in the intercolicular area, this did not occur. The most important structure in this area is the periacueductal grey substance, and its direct stimulation has the same effects as electroacupuncture. The reticular formation is a complex of little nuclei and axons with a high capacity for pain afference interconections. Important connections between the nociceptive system and autonomic nervous system are thought to exist in this area. At the diencephalic level, the arcuatus nucleus and the preoptic area are the most important structures. They normally act by endocrine mechanisms. A naloxone injection in this area blocks the analgesia induced by acupuncture. Acupuncture analgesia also has a telencephalic level of action, but this level of action is not very well known.

I REVIEW OF TRIALS

We have selected 9 meta-analyses from the Cochrane Library, all of them published in 2006. The first one is from Osiri and is entitled: Transcutaneous electrical nerve stimulation for knee osteoarthritis. Seven trials were eligible; six used TENS as the active treatment while one study used acupuncture like TENS (AL-TENS). Conclusions are that TENS and AL-TENS are shown to be effective in pain control over placebo. A second study from Melchart entitled: Acupuncture in the idiopathic headache. 26 trials were choosen, with 1151 patients in total. The authors concluded that real acupuncture is of value in the treatment of idiopathic headaches. Another review is published by Young and Jewell about interventions for preventing and treating pelvic and back pain in pregnancy. 3 trails are included, involving 376 women and compared physiotherapy and acupuncture. The authors concluded that both physiotherapy and acupuncture may reduce back and pelvic pain. Individual acupuncture sessions were rated as more helpful than group physiotherapy sessions. Green published a review entitled: Acupuncture for lateral elbow pain. They compared needle acupuncture with laser acupuncture. The authors' conclusions are that there is insufficient evidence to either support or refute the use of acupuncture (either needle or laser) in the treatment of lateral elbow pain. No benefit lasting more than 24 hours following treatment was demonstrated. No trial assessed or commented on potential adverse effects. Proctor published a review entitled: Transcutaneous electrical nerve stimulation and acupuncture for primary dysmenorrhoea. The authors' conclusions are that high frequency TENS was found to be effective in the treatment of dysmenorrhoea in a number of small trials. The minor adverse effects reported in one trial requires further investigation. There is insufficient evidence to determine the effectiveness of low frequency TENS or acupuncture in reducing dysmenorrhoea. However, a single small but methodologically sound trial of acupuncture suggests benefits with this modality. Furlan published a review entitled: Acupuncture and dry-needling for low back pain. They concluded that the data do not allow firm conclusions on the effectiveness of acupuncture in acute low back pain. For chronic low back pain, acupuncture is more effective for pain relief and functional improvement immediately after treatment than no treatment or sham treatment, in the short term only. Acupuncture is not more effective than other conventional or alternative treatments. The data suggest that acupuncture and dry-needling may be useful adjuncts to other therapies for chronic low-back pain. Because most of the studies were of lower methodological quality, there is a further need for higher quality trials in this area as well. Green published a review entitled: Acupuncture for shoulder pain. The authors concluded that there is little evidence to support or refute the use of acupuncture for shoulder pain although there may be short-term benefit with respect to pain and function. There is a need for further well- designed clinical trials. Casimiro published a review entitled: Acupuncture and electroacupuncture for the treatment of rheumatoid arthritis. Conclusions are that although the results of the study on electroacupuncture show that electroacupuncture may be beneficial in reducing symptomatic knee pain in patients with RA, 24 hours and 4 months post treatment, acupuncture has no effect on erythrocyte sedimentation rate, C-reactive protein, patients' visual analogue pain scale, number of swollen joints, number of tender joints, disease activity, reduction of analgesics, patients' global assessment or general health. Finally, Berman published a review on acupuncture in fibromyalgia and they analysed 7 trials, one of which was of high quality, and compared electroacupuncture with sham acupuncture. This study found significant differences between the two treatment groups in pain relief, pain threshold, morning stiffness and global subjective ratings of both patients and their physicians.
Conclusions A and E-A are methods used in the treatment of pathologies where pain is one of the main symptoms. However, there is little evidence to support or refute their use in some diseases. Acupuncture and

electroacupuncture are more useful in chronic than in acute pain, and they have few adverse effects. More well-designed trials are necessary to help PRM and other doctors to decide if and how to use these modalities in pathologies.

OP153

COST-BENEFIT OF NEUROPSYCHOLOGICAL ASSESSMENT IN TBI

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INTRODUCTION

An epidemiological study conducted in Portugal (Santos, 2003) estimates the annual incidence rate of TBI as 137/100000 people. Many TBI cases are due to work related accidents. However, there are no studies about this population in Portugal. Depending on the specific clinical characteristics of these brain-injured persons, standard neuropsychological assessment procedures can be sustained in order to reveal impaired functions, which need to be addressed in cost-effective rehab programs.

AIMS

To evaluate the general cognitive handicap and mental health needs of individuals suffering from work-related TBI, in order to sustain that neuropsychological evaluation provides useful data for rehabilitation. Methods: 815 individuals with work-related injuries were interviewed, 52 of them having TBI (48 male and 4 female; age=47,8 years). Participants responded to Center for Epidemiologic Studies Depression Scale (CES-D) and to Craig Handicap Assessment and Reporting Technique–SF (CHART-SF). A measure of Cognitive Independence (CI) was computed from CHART scores.

RESULTS

Participants scored 59,7 in the CI scale, well below a max. of 100 points, which represents the typical performance of the average non-disabled person. The CI handicap was larger than in other domains, namely Physical Independence (M=86,6), Mobility (M=88,6) and Occupation (M=70,4). Furthermore, CI scores tend to decrease with time after accident, with recently injured individuals showing less cognitive handicap (M=73,6) than those who were injured 5 or more years ago (M=50,5). On the contrary, CES-D scores reveal clinically significant depression signals (cut-off=16) with similar results for those injured in recent years (M=23,3) and those injured before 2000 (M=22,9). In Addition, 59,6% of the individuals report cognitive sequels, including reasoning, attention and memory deficits.

CONCLUSION

A low result on the Cognitive Independence scale of CHART-SF means reduced ability to sustain a customary level of independence (without the need for supervision), in both inside and outside home activities, including increased difficulty in remembering, communicating and managing money. Apparently, these difficulties tend to increase over time. Combining these findings with other cognitive complaints, such as reasoning, attention and memory deficits, and sustained depressive signals, justifies in-depth neuropsychological and mental health assessment in order to to ensure effective rehabilitation.

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Undesirable effects: very common: nausea, dizziness, somnolence. Common: vomiting, constipation, dry mouth, diarrhoea, abdominal pain, dyspepsia, flatulence, headache, trembling, confusion, mood changes (anxiety, nervousness, euphoria), sleep disorders, sweating, pruritus. Uncommon: hypertension, palpitations, tachycardia, arrhythmia, involuntary muscular contractions, paraesthesia, tinnitus, depression, hallucinations, nightmares, amnesia, dyspnoea, dysphagia, melaena, increased hepatic transaminase activities, dermal reactions (e.g. rash, urticaria), albuminuria, micturition disorders (dysuria, urinary retention), shivers, hot flushes, thoracic pain. Rare: ataxia, convulsions, drug dependence, blurred vision. Further risks from experience with either tramadol or paracetamol: postural hypotension, bradycardia, collapse, symptoms of opiate-like withdrawal reactions (agitation, anxiety, nervousness, insomnia, hyperkinesia, tremor, gastrointestinal symptoms), change in appetite, blood dyscrasia (thrombocytopenia, agranulocytosis), allergic reactions with respiratory symptoms and anaphylaxis.
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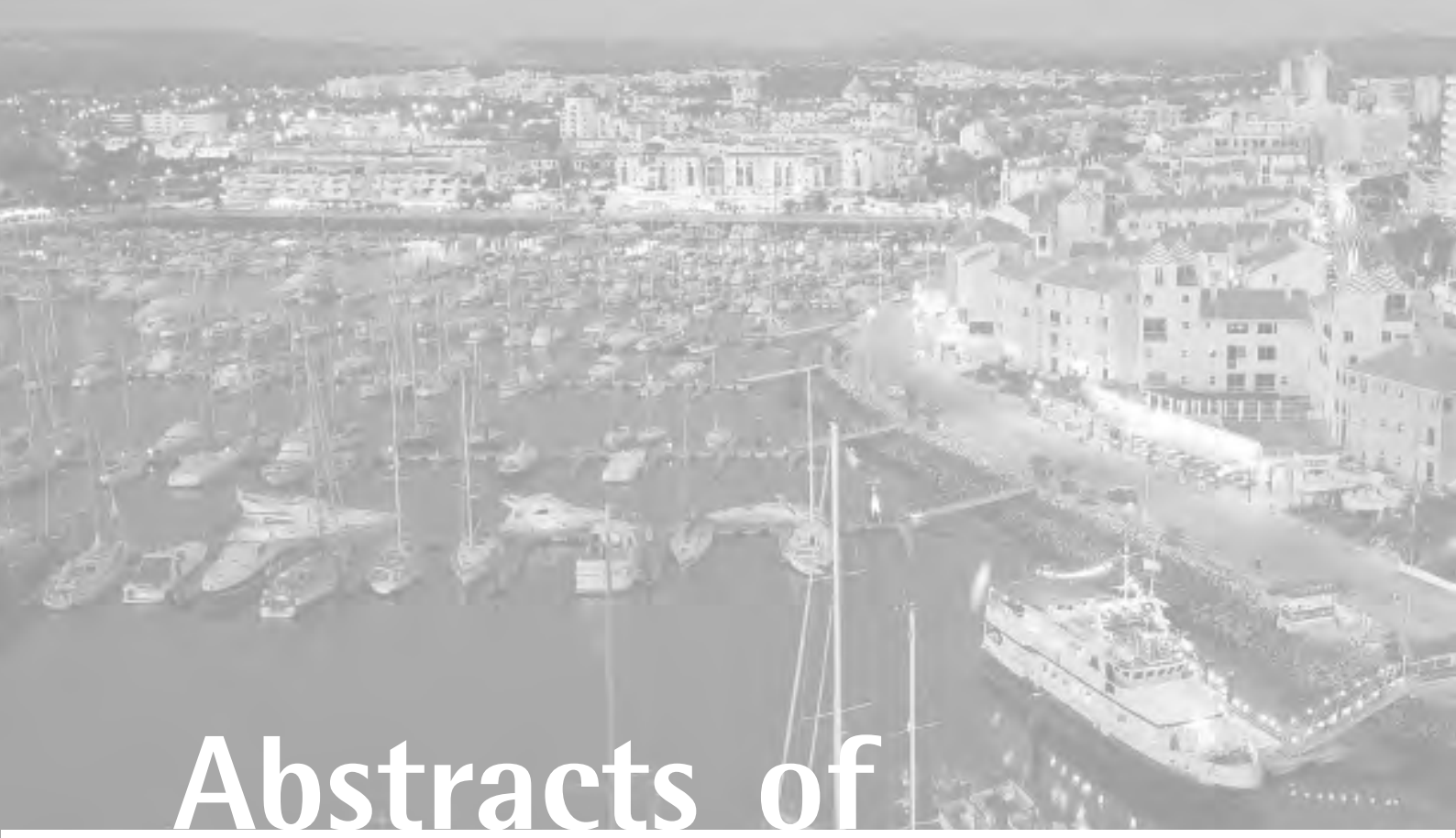

Abstracts of Posters

P001

POLYARTERITIS NODOSA – CASE REPORT

ARAÚJO, João Pedro[1], Clara Correia[2], Teresa Faria[2]
[1]Interno do 1.º ano de Medicina Física e Reabilitação do HSO – Guimarães
[2]Assistente Hospitalar do Serviço de MFR do HSO-Guimarães Director de Serviço: Dr. Melo Monteiro

Patient with 38 years old, female, admitted in May 2006, with decrease in muscular strengh, weight loss, articular livedo and dyastolic BP > 90mmHg. In the first Physiatric evaluation, she presented flaccid tetraparesis predominantly distal. Within the complementary diagnosys examinations, we have carried out muscular biopsy which has shown small sized artery vasculitis, electromiogram which detected acute axonal polyneuropathy, cerebral MRI with cerebral vasculitis evidence. Those facts have permitted us to establish the dyagnosis. The patiente started a fisiatric treatment combined with immunosupressive drugs.

P002

BMD OF FOREARM IN STROKE

LAZOURA, Olga[1]; VLYCHOU, Marianna[2]; PAPADAKI, Paraskeyi[3]; GROUMAS, Nikolaos[4]; ANTONIADOU, Eleytheria[4]; VASSIOU, Aikaterini[2]; PAPADIMITRIOU, Ioannis[2]; FEZOULIDIS, Ioannis[2]
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AIM

To compare bone mineral density of the forearm between paretic and normal arm in hemiparetic men, as well as between paretic arm of hemiparetic men and aged-match control group six months after stroke.

MATERIALS- METHODS

Twenty Greek male patients with a six-month history of hemiparesis due to stroke and nineteen healthy aged-matched men participated in the study. Cortical and trabecular bone density as well as SSI were measured at the distal radial epiphysis (4% and 20% of the length of the radius) of the paretic limbs in hemiparetic men. The same measurements were performed at the forearm of healthy men. Peripheral quantitative computed tomography (pQCT) was the method used for measurements. Patients were evaluated for the degree of spasticity and the phases of motor improvement.

RESULTS

Stroke patients had a mean age of 63,3+/-9,9 (range 44-75) years and healthy men a mean age of 58,3+/-12,4 (range 41-73) years. Trabecular and cortical BMD and SSI at the 4% and 20% of the length of the radius were as follows: pQCT slice parameter Normal side Paretic side P value 4%(mg/ccm) BMD trabecular 194,3+/-43,22 183,34+/-49,41 >0,05 20%(mg/ccm) BMD cortical 1094,02+/-35,57 1075,08+/51,47 >0,05 4% SSI 440,9+/-115,4 410,1+/-82,9 >0,05 20% SSI 314,1+/-142,3 261,5+/-177,4 >0,05 pQCT slice parameter Control hemiparetic P value 4%(mg/ccm) BMD trabecular 205,53+/-34,38 183,34+/-49,41 >0,05 20%(mg/ccm) BMD cortical 1128,8+/-38,55 1075,08+/51,47 =0,0008 4% SSI 330,76+/-106,89 261,5+/-177,4 >0,05 20% SSI 440,9+/-115,4 361,47+/-95,64 =0,02 All patients regained part of upper limb mobility within the first three months. Five patients had spasticity (25%).

CONCLUSION

men with a six-month history of hemiparesis had significantly lower cortical BMD and SSI but not significantly different trabecular BMD and SSI, compared to healthy men. BMD and SSI of the affected side's radius was not significantly different from BMD and SSI of the normal sid

P003

LOWER LIMB ASSESSMENT IN STROKE PATIENTS

LAZOURA, Olga[1]; VLYCHOU, Mariiana[2]; PAPADAKI, Paraskeyi[1]; GROUMAS, Nikolaos[3]; ANTONIADOU, Eleytheria[3]; VASSIOU, Aikaterini[2]; PAPADIMITRIOU, Alexandros[2]; FEZOULIDIS, Ioannis[2]
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[2] Department of Radiology, University of Thessaly, Larissa;
[3] A Department of Physical and Rehabilitation Medicine, National Rehabilitation Centre, Athens

AIM

To compare bone mineral density, fat and lean mass of the affected and unaffected lower limbs in hemiparetic patients.

MATERIALS – METHODS

Twenty eight Greek male patients with a six-month history of hemiparesis due to stroke were included in the study. Fat and lean mass were measured at both paretic and normal limb using dual X-ray absorptiometry (DXA) in all patients. Eighteen of them also had a DXA measurement of bone mineral density at the femoral neck, trochanter and Ward's triangle at both paretic and normal limb. Patients were evaluated for the degree of spasticity and the phases of motor improvement.

RESULTS

Stroke patients assessed for fat and lean mass had a mean age of 63,06 +/- 9,58 (range 44-74) years, mean height of 170,8 +/-6,58 (range 155-182) cm and mean weight of 71,68+/-10,77 (range 54-102) kg. Fat mass of the affected leg was not significantly different from the normal leg. However, the affected leg's lean mass was significantly lower compared with the normal side (P=0,04). DXA Normal leg Paretic leg P value FM (gr) 2901,27 +/-1221,7 3151,68+/-1273,3 >0,05 LM (gr) 5917,9+/-1038,1 5354,18+/-990,7 0,04 Stroke patients assessed for bone mineral density had a mean age of 62,9 +/- 10,4 (range 44-74) years. BMD at the femoral

neck and trochanter of the affected side was not significantly different from BMD of the normal side. However, affected side's BMD of Ward's region was significantly higher compared to the normal side (P = 0,035). DXA Normal limb Paretic limb P value Femoral neck (g/cm2) 0,84 +/- 0,12 0,85+/- 0,14 >0,05 Trochanter (g/cm2) 0,77+/- 0,13 0,76+/- 0,13 >0,05 Ward's triangle (g/cm2) 0,58+/- 0,1 0,68+/-0,14 0,035 Áll patients relearned to walk within the first three months after stroke. Seven patients had spasticity (25%).

CONCLUSION

Lower lean mass of the paretic leg six months following stroke, reflects diminished physical activity compared to the normal leg. Higher BMD of the affected side Ward's region in hemiparetic patients may be related to spasticity and changes in walking pattern, which increase the mechanical stress loading of the Ward's region.

P004

BMD OF THE FOREARM IN TETRAPARETIC PATIENTS

ANTONIADOU, Eleytheria[1]; LAZOURA, Olga[2]; STATHOPOULOU, Sotiria[2]; TSILIKAS, Konstantinos[2]; PSILAKI, Despina[1]; TRAGOULIAS, Vasilios[1]; MARAGOUDAKI, E[2]; PAPADAKI, Paraskeyi[2]; GROUMAS, Nikolaos[1]

[1]A Department of Physical and Rehabilitation Medicine, National Rehabilitation Centre, Athens;

[2]Department of Radiology, National Rehabilitation Centre, Athens

AIM

To describe bone loss of trabecular and cortical bone separately in a group of males with recent spinal cord injury, and to compare these parameters to a reference group of healthy able-bodied men of comparable age.

MATERIALS – METHODS

twenty four Greek male patients with a six-month history of incomplete quadriparesis due to SCI were included in the study. Cortical and trabecular bone density were measured at the 4% and 20% of the length of the radius (using its distal epiphysis as anatomic landmark) with peripheral quantitative computed tomography (pQCT). The same measurements were performed in a reference group of twenty eight healthy able-bodied men of the same age range. Time of immobilization, admission to intensive care and spasticity were all taken under consideration.

RESULTS

Quadriparetic patients had a mean age of 58,27+/-8,07 (range 25-78) years and able-bodied men a mean age of 57,35+/-12,8 (range 31-73) years. The mean time of the patients' initial immobilization was 55 days and the mean time of their stay in intensive care was 16 days. Fourteen patients had spasticity (58,3 %). Their BMD values were as follows. pQCT Quadriparetic men Control group P value 4% (mg/ccm) 187,3+/-39,18 208,21+/-35 0,047 20% (mg/ccm) 1122,32+/-42,01 1129,63+/-40,75 >0,05

CONCLUSION

Cortical BMD of the radius in quadriparetic men six months following spinal cord injury was not significantly different compared to able-bodied men, whereas trabecular BMD was significantly lower in quadriparetic men.

P005

FAT AND LEAN MASS IN SPINAL CORD INJURIES

LAZOURA, Olga[1]; ANTONIADOU, Eleytheria[2]; STATHOPOULOU, Sotiria[1]; TSILIKAS, Konstantinos[1]; KALOKERINOU, Kyriaki[1]; ANANIDIS, Nikolaos[2]; MARAGOUDAKI, E[1]; PAPADAKI, Paraskeyi[1]; GROUMAS, Nikolaos[2]

[1]Department of Radiology, National Rehabilitation Centre, Athens;

[2]A Department of Physical and Rehabilitation Medicine, National Rehabilitation Centre, Athens

AIM

To evaluate body composition of acute spinal cord injured men six months after injury and compare them with able-bodied men.

MATERIALS – METHODS

Nineteen Greek male patients with a six-month history of quadriparesis / paraparesis due to SCI were included in the study. Total fat mass (TFM, gr), total lean mass (TLM, g) and percentage of total fat (TF%) were measured using dual energy ×-ray absorptiometry (DXA). The same measurements were performed in a reference group of fifteen healthy able-bodied men of the same age, height and weight range. Patients were evaluated for the time of immobilization, admission to intensive care and spasticity.

RESULTS

SCI patients had a mean age of 53,68 +/- 18,3 (range 25-78) years. The mean time of their initial immobilization was 55 days and the mean time of their stay in intensive care was 16 days. Ten patients had spasticity (62,1%). DXA SCI patients Control group P value TFM (gr) 23623,21 +/-8173,9 21822,8+/- 8604,73 0,5 TLM (gr) 44608,48 +/- 7719,22 58356,13 +/- 9442,81 0,00006 TF% 32,19+/- 6,44 25,64 +/- 7,5 0,009

CONCLUSION

spinal cord injured men six months after injury, had significantly lower total lean mass (TLM) and significantly higher total fat% (TF%) compared to able-bodied men, whereas total fat mass (TFM) was not significantly different between the two groups.

P006

ULTRASONIC DIAGNOSTICS OF THE ACUTE AND CHRONIC VEIN DISEASES

D. Rondovic, Z. Maksimovic, R. Kostic

RONDOVIC, Dragica

The Insitute for rehabilitation

The Institute for rehabilitation-Gamzigrad Spa The Institute of vascular surgery-Clinical Center Belgrade,

Serbia Vein diseases as the commonest diseases of the human race demand quick, accessible, reliable and repeatable diagnostic method which will determine the further therapy procedure. Colour Doppler scan echosonography combined with pulse doppler and conventional ultrasonic illustrations in B graphic enable simultatianeous observing of both morphological and structural changes in blood vessel walls and lumen and chemodynamic characteristics and deviations of blood circulation.

THE AIM OF WORK

Survey of peculiarities and sensitivity of ultrasonic diagnostics in vein system diseases with the aim of timely and adequate treatment in order to prevent early complications (pulmonary embolism) and late sequelas (postthrombotic syndrome, vein ulceration).

MATERIAL AND METHOD

572 patients were examined and echosonographically diagnosed from 01. 01.2005. till 01.06.2006. Diagnosing was performed by Doppler duplex scan echosonographically (ESAOTE Megas GPX) with linear probe 7,5 MHz.

RESULTS

Of the total number of patients, 89 patients were verified to suffer from deep vein thrombosis, 41 patients from acute thrombophlebitis, 267 patients from varices, 67 patients from postthrombophlebitic syndrome, 48 patients from postthrombotic syndrome, 7 patients from pseudophlebothrombosis and in 53 patients no signs of vein diseases were found.

CONCLUSION AND DISCUSSION

Late diagnosing of acute states (deep vein thrombosis, thrombus forming in saphenofemoral orifice) results in great risk of pulmonary embolism appearance. Echosonographic verification of saphenous vein orifice insufficiency and arrest changes in distal segments indicate operative treatment. Echosonography determines clinical prase of vein disease according to CEAP classification. Echosonographic evaluation of the effects of the applied treatment measures :conservative as well as operative allows the insight to the measure effects and the disease prognosis. Echosonographic detection of asymptomatic thrombosis as well as pulmonary embolism origins and pseudophlebothrombosis is of particular importance because of causal treatment.

P007

PEDOBAROGRAPHIC FINDINGS IN PATIENTS WITH SENSORY DISORDERS OF THE FOOT

ROUSSOS, Nikolaos; SIOUTIS, Ioannis; KARZIS, Konstantinos; ALEXIOU, Alexandros; PATATOUKAS, Dimitrios; AGGELOPOULOU, Athina; LAGOGIANNIS, Nikolaos

Department of Physical Medicine and Rehabilitation. General Hospital Asklipeion Voula (Athens)

AIM

To evaluate pedobarographic findings in patients with pain, burning sensation and callus formation in the plantar area of the feet.

MATERIAL AND METHOD

A total of 39 patients with burning sensation, callus formation and pain in the plantar area as well as 27 controls were included in this study. Pedobarographic measures were obtained from all patients and controls. Pain intensity of patients was measured using the Visual Analog Scale. The percentage of pressure on forefoot and rearfoot, the surfaces of contact and the points of maximum and medium load were measured using static pedobarography. The surfaces during walking, the maximum pressure and the existence of anterior or posterior unstability were measured using dynamic pedobarography. The center-of-pressure sway as well as its variation was measured for evaluation of balance.

RESULTS

The percentage and the surface of pressure in the forefoot were positively correlated with the pain and burning sensation. The sway width in the patient group was higher than in the control group. The Visual Analog Scale score was negatively correlated with the existence of point of maximum load in the forefoot. Maximum pressure during walking was positively correlated with callus formation. The grade of maximum pressure in the forefoot was positively correlated with sway length and sway width ($P < 0.05$).

CONCLUSION

Pedobarography may become a useful technique to determine foot pressures, walking and balance problems in painfull feet with callus formation.

P008

INFLUENCE OF SPECIALLY INSOLES FOLLOWING PEDOBAROGRAPHY FOR FOOT DEFORMITIES

ROUSSOS, Nikolaos; SIOUTIS, Ioannis; KARZIS, Konstantinos; AGGELOPOULOU, Athina; KAGELARI, Aspasia; PATATOUKAS, Dimitrios; LAGOGIANNIS, Nikolaos

Department of Physical Medicine and Rehabilitation. General Hospital Asklipeion Voula (Athens)

AIM

To compare the influence of specially prescribed insoles, in reliving pain and improving static postural sway of patients with foot deformities

MATERIAL AND METHOD

Fifty-five subjects (41 women, 14 men; mean age 61.6 years), with pain, burning sensation, fatigue and callus formation referred to the pedobarograph laboratory participated in the study. Patients were referred from rheumatologists, orthopedics and internal pathologists

both from our hospital and the community. Pain was estimated using the Optical Analog Scale, before and 3 months after the prescription of the insoles. Static postural sway was recorded at the first examination of the patient and 3 months later. After the acquisition of the static and dynamic pedobarography special insoles were prescribed in order to support the longitudinal arch, to relieve pressure from the metatarsal heads and strain of the plantar fascia.

RESULTS

Compared with their initial evaluation, patients decreased their static postural sway. Optical Analog Scale score decreased as well.

CONCLUSION

Patients with a variety of foot deformities can really be relieved from pain and improve their postural sway using specially constructed soles. This can be of great importance taking into consideration the high risk for falls that these patients face.

P009

POSTURAL SWAY AND PRESSURE DISTRIBUTION, IN PATIENTS WITH KNEE OSTEOARTHRITIS. FINDINGS IN PEDOBAROGRAPHY AFTER THE USE OF MOBILE OR FIXED POLYETHYLENE. PROTOCOL PRESENTATION

ROUSSOS, Nikolaos[1]; SIOUTIS, Ioannis[1]; KARZIS, Konstantinos[1]; MALAKOU, Dimitra[1]; KAGKELARI, Aspasia[1]; PATATOUKAS, Dimitrios[1]; MICHOS, Ioannis[2]; LAGOGIANNIS, Nikolaos[1]

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AIM

Knee arthroplasty interferes with the knee movement during gait cycle. The prosthesis type which will be used can modify the gate parameters (Andriacchi et.al. 1986). Prosthesis with mobile polyethylene has the advantage to apply less pressure to the contact surfaces, due to the mobility of polyethylene and the absorption of pressures from the stabilizing soft tissues(Cheng et.al. 2003). Aim of the study is to investigate whether subjects with knee osteoarthritis (OA) have reduced static postural sway and improved pressure distribution, after the knee replacement as well as to compare differences between fixed and mobile polyethylene.

METHOD

Subjects with symptomatic and radiographic knee OA, who will undertake a knee operation, will be included in the study. A control group of at least 40 controls with asymptomatic and clinically normal knees will be used. Patients will be divided in 2 groups: the first will use stable polyethylene wear and the second mobile polyethylene wear. The placement of the patients into the groups will be done the day before the operation, by the method one by one. Evaluation of the static body sway and pressure distribution during static and dynamic pedobarography will be done before and 6 months after the operation. Findings will be compared with the control group. Differences between the 2 groups will be recorded as well.

P010

MAXIMENTAL NEUROLOGICAL FUNCTION EXAMINATION OF GREEK SUBJECTS

PROIOS, Hariklia[1]; SDRAVOU, Katerina[2]; PANIDOU, Minoa-Calliope[2]; MOUZA, Eirini[2]

[1]Aristotle University of Thessaloniki; [2]Rehabilitation Center

A neuropsychological screening battery is presented for various aspects of neuropsychological functions, such as neglect, visual hemispatial neglect, mathematical function, language functions and others. The Maxi-mental examination, developed and by the Neuropsychology Unit of the University Hospital of Zurich, is comprised of 14 picture items which examine shape discrimination, picture naming, figure-ground, orientation in space, humour perception and others. 40 Greek patients, with various neurological diseases, participated in the above test, with the majority of participants having suffered from stroke. 80 Greek normal subjects participated in the research, forming the 'control group'. The results showed that the perception of figure ground fragmentation was difficult for most subjects, as almost all the patients failed to identify what was presented to them. Moreover, 38.75% of the control group made the same mistakes. The findings indicate that humour perception was impaired in 90% of the patients, compared to 15% of the control group, which also demonstrated the specific problem. 85% of the patients have been proven unable to read the correct written word from a right to left one, compared to 11.25% of the control group. Finally, 75% of the patients had a problem with right-left discrimination, compared with 45% in the control group, a result which was quite unexpected. This screening tool will be useful as an informal assessment that can be conducted by the examiner. Performance profile is discussed as a coherent framework for establishing the foundations for an individual treatment program.

P011

NEUROGENIC INVOLVEMENT IN PATIENTS WITH UNILATERAL UPPER EXTREMITY PAIN

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INTRODUCTION

Upper extremity pain is a common problem with various clinical presentations. There are multiple etio-

logies for upper extremity pain, including musculoskeletal, neurological, vascular and rheumatic disorders, as well as referred pain from distant sites. Musculoskeletal disorders are more common than others. Neurological sources upper extremity pain sometimes can be overlooked and there are some difficulties in their diagnosis. Electrophysiological investigation has a very important place in the differential diagnosis of upper extremity pain.

AIMS

In this study, the aim was to investigate the frequency of neurogenic involvement in cases with unilateral upper extremity pain of musculoskeletal origin by using electrophysiological techniques. Methods: Fifty patients with shoulder pain with subacromial impingement syndrome (SAIS) and 16 patients with elbow pain with lateral epicodylitis were included in the study. Median and ulnar nerve motor conduction studies, median, ulnar and radial sensory nerve conduction studies and needle electromyography (EMG) were studied in all cases. Suprascapular, axillary, musculocutaneous and radial nerve motor distal latency and compound muscle action potential amplitude measurements in shoulder pain cases, and medial antebrachial nerve sensory conduction studies in elbow pain cases were performed.

RESULTS

There was no significant difference between affected and non-affected sides in terms of motor distal latencies, motor nerve conduction velocities and sensory amplitudes and nerve conduction velocities ($p>0.05$). In cases with shoulder pain and SAIS 19 cases had radiculopathy in the affected side, while only 4 in the non-affected side. Forty-three of all cases have neurological involvement in their affected sides while 29 patients have neurological involvement in their non-affected sides according to electrophysiological findings.

DISCUSSION/CONCLUSION

Neurological involvement can be more prominent in the affected side than in the unaffected side. However, we were unable to find any peripheral nerve involvement among the shoulder girdle nerves in patients with unilateral shoulder pain.

P012

ELEKTRO DIAGNOSTIC METHOD IN FOLLOW OF KNEE MUSCLES CONDITION

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During the rehabilitation program is very important to follow upper leg muscles condition because some of frontal knee pain sy, and instabilities are becoming from bad knee muscles condition or from functional etiology. Electro diagnostic method in follow of knee muscles condition is easy for measurement and it can repute many times.

The aim of our study is to represent the method of diagnosis and following the patients with functional knee instability.

MATERIAL AND METHOD

We had examination more but only by 30 patients with clinical, x-ray, sonography and electro diagnostic method were proved functional muscles knee changes. Electro diagnostic method was used on m.quadriceps for both sides, with exponential one way current. The patients after it were divided in two groups for exercises A-with weigh and B-for elongation of extensor leg muscles. They were followed one month.

RESULTS

With clinical examination (measurement of knee and upper knee muscles circumference) were 22 patients with bad muscles condition and it was proved electro diagnostic too, and 8 patients had short extensor muscles of leg and positive test of it, but electro diagnostic the differences between left and right side were not. After one month the patients from group A, by 20 there were not a difference between left and right side. The other 2 had dominant side and condition was not full.

CONCLUSION

To follow the effectives of muscles training we must have measurement. Electro diagnostic method can show it, but we must care for dominant side and for choose of exercise program.

KEY WORDS

Electro diagnostic, knee muscles, training.

P013

COMPARISON OF TWO MOTOR ASSESSMENT SCALES IN STROKE PATIENTS: CORRELATION WITH FUNCTIONAL ASSESSMENT

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INTRODUCTION

Stroke patients should be evaluated by using various tools covering different aspects of the impairement and disability in order to be able to correlate functionality and motor function.

AIMS

To compare the congruency of two motor assessment scales; Rivermead Motor Assessment Scale (RMA) and Motor Assessment Scale (MAS) in assessing outcome in stroke patients and to investigate their relation with functional level and Brunnstrom staging.

METHODS

55 consecutive patients (33 male, 22 female) admitted to the inpatient rehabilitation unit were enrolled into the study and assessed by RMA, MAS, Functional Independence Measure (FIM), Berg Balance Scale (BBS), Brunnstrom staging at baseline and before discharge.

RESULTS

The mean age of patients was 64±12 years, and the mean time since stroke was 6±12 months. Involved side was right in 60% of cases, and the lesion was ischemic in 65%. Neglect was detected in 6%, and 67% had no form of aphasia. 64% was functional ambulators at admission and 72% at discharge. Both motor scales were easily implemented but applying RMA took longer time (10-20 min). Motor scales correlated with each other on overall score as well as their relevant subscores related to upper and lower extremity, and body functions. They also showed a good correlation with FIM, BBS, but a weak correlation with Brunnstrom staging. FIM showed a weak correlation with Brunnstrom staging as well. Discharge scores of motor scales correlated well with admission scores and FIM scores, but not with Brunnstrom staging.

CONCLUSION

Our results indicate that RMA and MAS would be more advantageous in assessment of motor function and outcome in patients with stroke compared to traditional tools. Their routine use in rehabilitation setting seems reasonable due to convenience of implementation. They have common points except for the shorter completion time in favor of MAS.

P014

ASSESSMENT OF KINESIOLOGY PARAMETERS IN LOW MINERAL BONE DENSITY KATARINA MARKOVIC AND MIRJANA KARADZIC INSTITUTE FOR TREATMENT AND REHABILITATION OF RHEUMATIC AND CARDIOVASCULAR DISEASE

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Functional assessment of musculature, by the analyses contractions of the specific part of musculature, may be of great importance in making a diagnosis and assessment of therapeutic effect, as well

AIM

Analysis the possible corelation between low bone mineral density of the lumbosacral (LS) part of the spine and kinesiology parameters of musculature of the some region, male and female patients with degenerative changes at the LS level

METHOD

Examination was performed on male and female patients, age between 41 and 75. Functional status of LS musculature was analised, on the three axis isoinertial dynamometer Isostation B200. Values of the maximal isometric test (MIT) for the flexor and extensor muscles of the trunk, vales of the average rotation moment and average speed in dynamic test in addition to 30% of lood were followed. Measuring of bone mineral density was performed on Lunar DPX densitometer, at the some time anteroposterior scan of lumbal vertebrae L1-L4 by the method of two energetic absorbtiometery by X- rays (DEXA) Coorellations with age and body mass index (BMI) were followed as well. 71 people were examined, 19 women and 5 man were in the control group, without degenerative changes, average age 54,9 average values T-scor = 0,95 g/cm2 and average BMI = 27,6 kg/m². 57 women and 14 man were in the group with radiologically present degenerative changes of the LS part, average age 56,7, average T-score = -2,25g/cm2 and average BMI = 20,3kg/m².

RESULTS

obtained results suggest high positive statistic correlation between: kinesiology parameters of trunk musculature and low bone mineral density – less bone mineral density, muscle strength is also less both: values maximal isometric – average for trunk extensors 20%, for rotators 30% and for flexors 36% and values dynamic test, patients with osteoporosis, was less average speed for 38,3% and less the average rotation moment for trunk flexors 25,7% and for extensors 27,3%. In the control group there were no correlations between T-score and kinesiology parameters. In the group with degenerative changes negative correlation (-0,692) between T-score and age of female patients was noticed.

CONCLUSION

our results dealing with functional status of the trunk musculature and low bone mineral density are in the high possitive corellation – less bone mineral density, muscle strenght is also less both in maximal isometric and dynamic test, possitive corellation was noticed in relation to age, as well.

P015

RESPIRATORY REHABILITATION IN PATIENTS WITH PLEURAL DECORTICATION

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INTRODUCTION, AIM

We investigated importance of early pre- and postoperative pulmonary rehabilitation in preventing complications in pts. undergoing lung decortication after empyema.

MATERIAL AND METHODS

Forty-nine pts. (83.7% males, mean age 43 yrs.) who underwent decortication were treated only after

(group B0, N = 24) and before and after surgery (B1, N= 25). We applied the following rehabilitation techniques: education, aerosol treatment with bronchodilatators and mucolitics, exercises for diaphragmal breathing, thoracic expansion, shoulder muscles area and forced expiration exercises in sitting position. The mean length of rehabilitation was 16 days in group B0, and in group B1 12 days pre- and 13 days postoperatively.

RESULTS

Complications prevalence was significantly lower in group B1 than in group B0 (20% vs. 33%, respectively; $p < 0.05$). Hospitalization length was significantly shorter also in group B1 than in group B0 (16 vs. 23 days, respectively; $p < 0.5$).

CONCLUSION

We concluded that early rehabilitation program reduces risk of postoperative complications and shortens hospitalization period.

P016

IS A FUNCTIONAL EVALUATION SCALE A DIAGNOSTIC TOOL? – A CASE STUDY

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INTRODUCTION, AIM AND METHODS

Presentation of a clinical and imagiological case of a man with unknown previous debilitating important diseases with clear signs and symptoms of hip osteoarthritis in whom functional scales where used, before and after total hip arthroplasty.

RESULTS

The functional scales had a good correlation with the surprising and unexpected clinical evolution, when the patient presented with rapid functional deterioration one month after the orthopedic procedure and a lung tumor with L4 metastasis compressing L4 nerve root was diagnosed.

CONCLUSION

We emphasize the importance of the use of functional evaluation scales in this case that we though of great clinical use.

P017

LIMB AMPUTATION, EPIDEMIOLOGY AND FUNCTIONAL RESULT – A RETROSPECTIVE STUDY

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INTRODUCTION

Limb amputation is a major cause of disability representing an important medical and social problem. A correct clinical and functional assessment of the patient is essential to determine prosthetic potential and predict functional outcome. Several pathologies that are often associated with limb amputation, especially lower limb amputation, such as cardiovascular diseases and diabetes, have great impact in the prosthetic rehabilitation. The epidemiological study allows the characterization of our population of amputees with consequent evaluation and eventual adjustment of the rehabilitation protocols.

AIM AND METHODS

Retrospective analysis based on the amputated patients assisted at the Physical Medicine and Rehabilitation Department of Santa Marta Hospital between 2001 and 2005. Aspects as age, gender, co-morbidity, reason and level of amputation, prostheses prescription and functional result were evaluated.

RESULTS/CONCLUSIONS

Our results show that all the aspects analyzed are of great importance for the prediction of functional outcome, emphasizing the need of a correct initial patient assessment.

P018

HIV-ASSOCIATED MYELOPATHY: A CASE REPORT

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Neurologic lesions are frequent complications of human immunodeficiency virus (HIV) infections. The most common disease of the spinal cord in human immunodeficiency virus (HIV) is vacuolar myelopathy. Usually, it appears at later stages of the disease, in individuals with low CD4 T cell counts. This pathological entity is clinically under recognized, as a consequence of the attribution of the symptoms to general debility and concomitant peripheral neuropathy. Other aetiologies must be first ruled out before establishing the diagnosis. The evidence for benefit of HAART or individual retroviral medications on vacuolar myelopathy is controversial, although viral control is important to the individual history. The authors report a case of a 44-year-old male, HIV-2 infected, with advanced disease, which developed 6-month progressive spastic paraparesia, with increasing difficulty in walking, sensory loss and erectile dysfunction. The electromyography showed somatosensory evoked potentials (SEPs) in tibial nerve with delayed latencies of central potentials that allowed us to consider HIV-associated myelopathy. The objective of this presentation is to emphasize the importance of this clinical entity, to discuss diferencial diagnosis as well as the functional rehabilitation approach.

P019

CORRELATION BETWEEN HAND MOVMENTS' TESTS IN BASAL GANGLIA AND CEREBELLAR DEGENERATIVE DISEASES

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INTRODUCTION

Evaluation of basic motor competency in patients with idiopathic Parkinson's disease (PD) and cerebellar degeneration (CD) using Finger Tapping Test (FTT) and Purude Pegboard Test (PPT) would be major concern of this experimental study. Judging possible correlation between two tests should be helpfull in applying any of these tests in clinical practice in initial and further evaluating examination of these patients.

AIMS

assesment of motor competency in PD and CD, assesing motor competency of clinically silent hand in hemiparkinson's syndrome, assesing correlation between those two tests Method: The study comprised 37 subjects: 14 with early stage PD, 12 with CD and 11 healthy controls In FTT (Stefanova and al.1995) subject performs as much taps on keyboard as possible during 15 sec. repeatedly 5 times by each hand In PPT subject places pegs in appropriate holes during 30 s repeatedly 3 times by each and both hands.

RESULTS

both tests show lower scors in both patients' groups comparing to controls for all modaliteis (right hand, left hand, both hands) ($p<0.05$) There is significant correlaton between two tests' results (r ranging 0.67 to 0.7, $p<0.0001$)

CONCLUSION

FTT and PPT are objective tools in assesing hand movement velocity and accuracy in PD and CD patients, during initial clinical examitation, following effects of medical and physical therapy. Judging by the difference in basic motor competency of clinically apparent and inapparent hand in unilateral idiopathic PD, these tests could be helpfull in detecting motor deficits that are more subtil than the clinically apparent ones.

P020

MOTOR AND FUNCTIONAL DISORDERS OF INPATIENTS OF A GENERAL HOSPITAL

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AIM

To investigate the percentage of inpatients with physical and functional disorders in a general hospital, as well as to identify their aetiology.

MATERIAL AND METHOD

We studied 324 patients who were admitted the same day in a general hospital. A specially constructed questionnaire was used, as well as the FIM scale (Functional Independence Measure) for the cases with motor disorders. Patients with physical disabilities were classified according to aetiology such as: central nervous system disease, peripheral nervous system lesion and musculoskeletal disorders.

RESULTS

Motor and functional problems had 134 out of 324 (41%). The majority of the cases with motor dysfunction (33%) had lesions in the peripheral nervous system, 82% of them had polyneuropathy. Stroke was the second reason for motor disability (31%), 26% had musculoskeletal disorders and 10% extapyramidal disease. EMG study was prescribed for the 27% of patients with motor dysfunction. Forty-two out of 134 were referred to physical therapy. For these patients the PMR department physicians disagreed about the rehabilitative method used.

CONCLUSION

Physical and functional disabilities seem to be a very common problem for inpatients. We realized that a high percentage of these patients suffered from polyneuropathy which in 62% of cases was characterized as idiopathic. A multidisciplinary team of medical specialties should collaborate to improve the patients' rehabilitation.

P021

ETIOLOGY AND PREVALENCE OF LANGUAGE, SPEECH AND SWALLOWING DISORDERS

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The present study examines neurological inpatients for type of communication disorders and for swallowing problems before and after discharge from a local rehabilitation facility. Subjects where clustered into 4 categories depending on the cause of their communication and/or swallowing disorders. These are patients after stroke, patients after traumatic brain injury, patients who had multiple sclerosis and patients who had Parkinson disease. Moreover speech, language and swallow disorders appeared at different percentages in all categories and thus an attempt was made to classify the type of disorder depending on etiology. Communication disorders were divided into speech, language and swallowing disorders; the latter were them followed up by videofluoroscopy. For stroke patients, it was found that 83% had language, 92% speech, and 33% swallowing problems. On the other hand, for patients with traumatic brain injury the corresponding percentages were 90% language, 100% speech, and 50% swallowing problems. Part of the study was also to identify whether the patients continued with

a speech therapy program after their speech-language evaluation and if yes for how long. The same type of information regarding a follow-up therapy program was collected about swallowing disorders. Results are discussed in terms of prevalence data as compared to other European rehabilitation facilities.

P022

THE VALUES OF HAND ELEVATION TEST IN THE DIAGNOSTIC WORKUP FOR CARPAL TUNNEL SYNDROME

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INTRODUCTION

Carpal tunnel syndrome can usually be diagnosed clinically and many clinical diagnostic methods are used. However, they have variable sensitivity and specificity and there is a need for more valid tests.

AIMS

To determine the sensitivity and specificity of hand elevation test (HET) and compare to those of Tinel and Phalen test in the diagnostic workup for carpal tunnel syndrome (CTS) and to investigate the correlation between HET and electrodiagnostic findings of CTS.

METHODS

Patients were defined as CTS if they had at least 2 symptoms or signs among 9 clinical features and electrophysiological confirmation, simultaneously. Total 126 hands diagnosed as CTS were divided into mild, moderate, and severe group by electrodiagnostic severity of CTS according to AAEM guideline. 41 mild group, 41 moderate group and 44 severe group were determined. Tinel, Phalen test and HET were performed on CTS patients and control group of 126 hands with no history of CTS. The sensitivity and specificity of each test were calculated. The sensitivity of Tinel, Phalen test and HET were investigated according to the severity of AAEM guideline.

RESULTS

The sensitivity and specificity of the HET is 69.8% and 96.7% respectively. Tinel test had 48.4% sensitivity and 88.3% specificity. Phalen test had 56.3% sensitivity and 89.2% specificity. Both sensitivity and specificity of HET were significantly higher than those of Tinel and Phalen test. As the severity of AAEM guideline to classify CTS became mild to severe degree, the sensitivity of HET was increasing.

DISCUSSION

HET can reproduce the symptoms of CTS well. HET is more useful than Tinel and Phalen test as provocative test of CTS. It is more valuable, especially when the electrodiagnostic findings of CTS are more severe.

P023

RE-AMPUTATION – A NEW OPPORTUNITY

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We report the case of a 21-year old man with traumatic partial foot amputation (tarso-metatarsal / Lisfranc) and poor cutaneous coverage which lead to a difficult adaptation to lower limb prosthesis. The contact between the stump and prothesis caused a sensitive area with recorrent bleeding and scars, therefore the patient had a antalgic gait pattern with lateral bending trunk during the stance phase. He needed two walking aids, to control balance, wich according to Community Balance and Mobility Scale* used to the amputee population by de Rehabilitation Department of G. F. Strong Centre, Vancouver-Canada, he had a score of 48/85. The suggestion of surgical correction, with a possible re-amputation at a higher level, was refused by the patient. One year later, the patient asked for a new functional evaluation at our Department. He wasn't using the prosthesis because the residual limb remained painful and skin easily broke. He displayed a three-point gait and, at that time, the suggestion of reamputation was reconsidered by the patient. After clinical evaluation a transtibial amputation was proposed by the Plastic Surgery Department. The patient was enrolled in an amputeee rehabilitation programme after surgery and made functional adaptation to an endoskeletal (modular) prosthesis with silicone liner and dynamic foot. He showed great preformance during treatments and achieved a normal locomotion pattern with a score of 77/85. He could walk, without walking aids, on irregular ground, walk up and down stairs and he was able to participate in some sports activities.

CONCLUSION

This clinical case shows that sparing the length of amputation does not always mean a more functional result. In this case, the limb sacrifice produced a more fuctional life and a better social integration for the patient.The will and the motivation of the patient was crucial to the sucess of the treatment. *Inness L., Howe J., Verrier MC,Williams JI. Development of the Community Balance and Mobility Scale. (CB&M)for Traumatic Brain Injury (TBI). Indianopolis, IN: American Congress of Rehabilitation Medicine; 1999. PHYSICAL AND REHABILITATION DEPARTMENT, HOSPITAL FERNANDO FONSECA

P024

BILATERAL SHOULDER DISARTICULATION – A CASE REPORT

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Upper extremity amputation results in significant functional disability and causes important social and psychological impairment. Acquired amputation in adults is a consequence of trauma in the majority of cases (70-80%), most frequently affecting the digits. Amputation at the level of shoulder disarticulation or forequarter amputation occurs in about 1% of these cases and function is very difficult to restore, either because the prosthesis is too heavy or because the increase in energy expenditure is above the capability of the patient. For this reason many patients prefer to be fitted with a cosmetic prosthesis. The individual with a bilateral upper extremity amputation has major disability to perform every activity of daily life, which makes it desirable to achieve early prosthetic fitting, with temporary or preparatory prosthesis, and training in special skills to provide the most functional outcome possible. The authors present a case of a 41 years old male, without a relevant medical history, who, in 2004, suffered severe electrical burns in both upper limbs and torso, which resulted in bilateral amputation at shoulder disarticulation level. He has been in treatment at our department doing physical therapy for strengthening of the upper body and cardiovascular conditioning, as well as occupational therapy using an hardware/software interface that allows him to use a computer, to achieve professional rehabilitation. For each amputated limb he was prescribed a powered prosthesis with double wall laminated socket, quick-disconnect wrist unit and 5xA Dorrance hook. The patient is also followed by a Plastic and Reconstructive Surgeon concerning the burns that so far have made it very difficult for the patient to wear the prosthesis because of associated pain and occasional skin infections. The patient is very motivated for prosthesis use and continues his rehabilitation programme at our department.

P025

BILATERAL TRANSFEMORAL AMPUTATION: A CASE REPORT

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Diabetes is the most common cause of lower limb amputation in adults. It is often associated with a first amputation, followed some years later, by amputation of the contra-lateral limb. Bilateral transfemoral amputees remain a challenging rehabilitation issue. The increase in energy requirements, and all complications of an underlying disease like diabetes, can be limiting factors in ambulation. Nevertheless, prothetization potential must be addressed, and all efforts made towards the best functional outcome possible. Cardiovascular status must be assessed. Successful prosthetic rehabilitation in the bilateral amputee is primarily dependent on the prosthetic success after the first amputation. The level of motivation is vital, and should be evaluated. The authors present a case report of a male patient, 66 years old, with type 2 diabetes diagnosed in December 2002. The patient was amputated at right transfemoral level in March 2003. He underwent a postoperative rehabilitation programme and started using a lower limb prothesis. He was able to walk with two crutches, in all kinds of terrain and gained independence in all activities of daily living. In January 2005, the patient reported intermittent claudication and was submitted to several revascularization surgeries. The remaining limb was amputated at transfemoral level in October 2005. The cardiovascular function was evaluated by the assisting cardiologist, and prosthetic use was not contra-indicated. A prothesis to the left lower limb was prescribed. Right lower limb prothesis was revised and adapted to the patient's new needs. The patient began a rehabilitation program for bilateral transfemoral amputees. This patient is now able to walk with both prothesis and two crutches, in plain terrains, but is still improving his functional level.

P026

DIFFICULTIES ON A TRANS FEMORAL AMPUTATION REHABILITATION: CLINICAL CASE

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The pathologies that lead to arthroplasties or to limb amputation are increasingly frequent, making it more probable to present in the same individual. The authors present a case of a 63 year old patient, with previous total hip arthroplasty, submitted to transfemoral amputation of the same limb due to arterial isquemic pathology, and reamputated for infection and dehiscence of the residual limb suture. The unusual circumstance on this case is that the bone amputation level is proximal to the prosthesis femoral component tip, causing difficulties to the rehabilitation process and presenting some challenges to the limb prosthesis prescription and patient adaptation.

P027

AMPUTATION IN THE COURSE OF JUVENILE RHEUMATOID ARTHRITIS.

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INTRODUCTION

Juvenile Rheumatoid Arthritis (JRA) is a relatively uncommon condition. The amputations in infantile age constitute a deficiency that not only also affects to the motor ambit but the psychological one, and lead to severe functional limitation. Unlike the joints, ocu-

lar involvement with JRA is most often asymptomatic; inflammation can cause serious morbidity with loss of vision yet.

CLINICAL CASE

We describe the case of a 44-years-old female with a long history of JRA who developed lower extremity ischemia requiring amputation and enucleation of the right eye caused by uveitis. At 2-years-old she presented arthralgias and sinovitis in the right knee treated with cast and steroids. She developed a irreductible flexum of the knee. The diagnosis of JRA was made at 7 years-old when she presented an uveitis. At 9-years-old she was treated with a knee arthrodesis. Her right leg developed gangrene and nearly had to be amputated. Uveitis led to a right eye blindness that required enucleation. Phyisical Examination of the amputated leg showed cutaneous lesions of the stump (due to hyper-pressures), bone overgrowth and a very important inguinal furunculosis. She also had an arthritic degeneration in left knee and ankle.

CONCLUSION

The course of JRA complicated with amputation of the lower limb and uveitis led to an irreversible disability and severe functional limitations. Timely diagnosis and appropriate aggressive treatment of patients with JRA improve quality of life and outcome.

P028

FACTORS ASSOCIATED WITH BONE LOSS IN YOUNG MALE VETERANS WITH TRAUMATIC BELOW KNEE AMPUTATIONS

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INTRODUCTION

Cortical bone loss on the amputated side is an important factor in patients with lower limb amputations. However, trabecular bone loss and factors that affects both types of bone loss still need to be evaluated.

OBJECTIVE

The aims of this study was to determine if there is any BMD difference at proximal tibias and femora between intact and amputated limbs and the factors effecting bone loss on the amputated site in young veterans with traumatic below knee amputations.

METHODS

This is a retrospective cohort study of veterans who had suffered from land-mine injuries. Dual energy X-ray absorbsiometry (DEXA / LUNAR DPX®) was used to determine areal bone mineral density (BMD) of the femur (total, neck, Ward's) and tibia. BMD measurements were performed at both intact and amputated limbs and the intact side was used as a control for the amputated side.

RESULTS

Of the 36 men who were participated in this study, 19 were right sided and 17 were left sided below knee amputee. Mean age was 26.8 ± 3.5 years and the mean duration of amputation was 62.8 ± 37.0 months. Thirty three patients (91.7%) were wearing their prostheses more than five hours a day and three subjects (8.3%) were wearing three to five hours a day. The BMD measurements of femoral neck/Ward's/total and proximal tibia on the amputated limb were significantly different from the intact limb ($p<0.0001$). Linear regression analyses were performed to investigate the factors affecting bone loss on the amputated femur and tibia. Age, duration of amputation, occupational status, exercise level, daily prosthesis usage time were the factors evaluated. None of these factors were found to be correlated significantly with the value of BMD of femoral regions ($p>0.05$). On the other hand, exercise level was the only factor found to be correlated significantly with the value of BMD of the proximal tibia at the amputated side ($p<0.05$).

CONCLUSION

The results of this study showed that increasing exercise level can decrease bone loss at trabecular bone on the amputated side in patients with traumatic unilateral below knee amputations.

P029

BEHAVIORAL AND PERSONALITY TRAITS MAY PREDICT THE DEVELOPMENT OF CHRONIC PAIN AFTER AMPUTATION

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INTRODUCTION

Limb amputation produces chronic pain that is subject-specific but highly varies across individuals. This suggests that this predisposition is determined genetically. Since neurochemicals in pain pathways also participate in other neural functions, certain genetic variations may predispose carriers to co-express chronic pain and other behaviors and personality traits.

AIMS

Finding variable behaviors and personality traits that correlate with chronic pain,

METHODS

106 Israeli leg amputees filled a pain questionnaire assessing the level of phantom (PLP) and stump pain (SP); the Sensory Affective Profile Questionnaire (SAP-Q), in which subjects recall levels of pleasure attributed to daily sensory scenarios to which they were exposed before the amputation; and Cloningeri¯s Tridimensional Personality Questionnaire (TPQ) that assesses levels of Harm avoidance (HA), Reward dependence (RD) and Novelty seeking (NS).

RESULTS

Out of 91 sensory scenarios in the SAP-Q, 8 and 11 on the pleasure scale and 4 and 7 on the displeasure scale, significantly differentiated between amputees with PLP and SP and those without pain (respectively; p<0.05-to-0.002). A high correlation was found between pleasure and displeasure levels of scenarios in most modalities, suggesting that sensory evaluation styles are subject-specific regardless of modality. In the TPQ we found that HA component "Anticipatory worry and pessimism vs. uninhibited optimism" and RD components "Persistence" and "Attachment", but none in NS, differentiated significantly between amputees having SP and pain-free, but none for PLP.

CONCLUSIONS

Certain behavioral and personality traits may predict the development of amputation chronic pain. If supported by prospective studies, these tests could be used to identify individuals at high risk for developing chronic pain.

P030

"TOTAL HIP REPLACEMENT VERSUS MC MINN HIP RESURFACING: ISOINERTIAL AND PROPRIOCEPTIVE VALUATION"

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REHABILITATION MEDICINE

AIMS

estimate, through isoinertial and proprioceptive valuation, the functional restoration in both pz who had a Total Hip Replacement (THR) and in Mc-Minn Hip resurfacing (MC).

METHODS

We have observed 22 pz: 11 who had a THR and 11 who had a MC at the Rehabilitation Medicine of "Tor Vergata" University in Rome. The pz were submitted to isoinertial valuation, using a 2kg. weight, with a coxo-femoral abduction movement in lateral decubitus, in such a way as to activate the big and the medium gluteal muscle. We compared the operating limb to the controlateral. For the isoinertial valuation it has been used Muscle Lab (K.B.Ergotest-ky. Jyvaskyala, Finland): it is made by an encoder and an assigned microprocessor linked to a PC. it can be utilized for the valuation of isotonic movement in prearranged exercises. We calculate: velocity, acceleration, strength, displacement, power, work, time. It was used for proprioceptive valuation a baropodometric and stabilometric board: the valuation has been done on a double-podalic support, with open and closed eyes (52.8 s. for each test) and on a mono-podalic support both on the not operated limb and on the operated one (10 s. for each test). We considered the parameters obtained by two valuations and later we compared the same limbs with the operated one.

RESULTS

The results showed both at 1 and at 3 months from the surgical operation, a stabilometric values reductions in 9 pz out of 11 operated using the MC. and its proprioceptive capacity; the power index, comparing the operated and the sound limb, inferior to 14% of muscle deficit. In those pz with THR it was evident a stabilometric parameter growth with a muscle deficit index which is expressed by a power ratio. inferior to the 20% of muscle deficit.

DISCUSSION/CONCLUSION

The results showed a quicker restoration of proprioceptive and functional component in MC; this result can be found in the minor anatomic structure delection and in the major proprioceptive component maintenance. This method enabled us to fasten the rehabilitation phases, according to the pz real status and to develop the motor programme through specific therapeutic exercise in a rehabilitative project contest.

P031

HIP JOINT REPLACEMENT – AN OVERVIEW AND A REHABILITATION PROTOCOL

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INTRODUCTION

Hip arthroplasty/hemiarthroplasty, also known as hip replacement, is a surgery performed to replace all or part of the hip joint with an artificial device called prosthesis.

AIM

We discuss the indications, contraindications (absolute or relative) and the complications of these procedures, as well as all the actual components of various materials and a multitude of designs that are currently available. Surgical approaches are also referred, since there is a higher incidence of posterior dislocation with posterior approach, which is of enormous importance for the rehabilitation specialist to be aware of. Rehabilitation: The rehabilitation program has the purpose to guide patients through the pre-operative, acute,

and sub-acute phases of this process associated with hip replacement in an effort to assist the patient in becoming functionally independent following surgery. The program includes exercise, pain control, and joint protection techniques. Most patients after hip surgery are kept on partial weight-bearing for at least 6 to 8 weeks. In theory, patients with cemented prostheses are capable of bearing full weight immediately after surgery, although patients who have porous ingrowth prosthesis should be on protected weight-bearing for up to 12 weeks, as this provides time for the bone to grow into the pores of the component.

P032

THE REHABILITATION INTERVENTION ON TOTAL HIP REPLACEMENT IN HOSPITAL FERNANDO FONSECA

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HOSPITAL FERNANDO FONSECA

The authors make a short approach of total hip replacement (THR), a surgical option frequently used for the resolution of clinical situations such as: hip osteoarthritis, status of fracture of the femoral neck; avascular necrosis of the femoral neck, as well as in the context of other pathologies, such as rheumatoid arthritis. In this context, it's introduced the intervention model applied by the orthopaedic team from the Rehabilitation Department of Hospital Fernando da Fonseca, composed by one Physician, six Physiotherapists and one Occupational Therapist. The aims of rehabilitation intervention are approached and is presented, in the internment and at the ambulatory department, the course of the patient with such pathology, in order that it was established a protocol, which proceedings began in January 2005. A short casuistic is presented between the period of January of 2005 and June 2006.

P033

REHABILITATION TREATMENT AMONG PATIENTS WITH INJURIES OF ANTERIOR CRUCIATE LIGAMENTOF KNEE JOIT

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A knee joint is a complicated anatomic formation and its stable fixation is made by cruciate (anterior and back) and side ligaments, joint capsule. Our research was aimed at the analyses of working stability restoration and the return to the active life of the patients who had an operation on knee joint – arthroscopy, syndesmoplasty of anterior cruciate ligament of semitendinous muscle tendon. All the operations were held in the fastest time limits after the injury (first 14 days). Patients observed – women, 30-40 years old, type of the injury – rotary movements in the knee-joint with the fixed foot in the ski boot. We analyzed the results of the restoration treatment among 16 patients. All the patients received rehabilitation treatment from the first day after the operation. In the early postoperative period patients stayed at hospital and the treatment was directed at checking of pain and hypostasis syndrome and restoration of movement amplitude in knee-joint within 60*. To achieve that we locally used magneto-laser therapy, cryotherapy, cryoelectrophoresis, massage in electrostatic field, using system "Hivamat", depending on the degree of the hypostasis – local lymph drainage using device "Lymphovision". Passive movements in the knee joint were also performed from the first day after the operation on device "Artromot" with a gradual increase of the yaw. Movement amplitude to 90* yaw, on average, was restored within 3 weeks after the operation, on average. After the sutures were removed to the therapy received we added cyclic training and hydro-kinesiotherapy. On average, the early restoration period took 4-6 weeks. During the whole period external immobilization of the knee-joint by brace with a given angle and walking with support with the help of crutches with the dosed exercise stress on the operated limb within 60-80% were practised. The late restoration period (3 months after the operation) included cyclic and weight-lifting trainings, hydro-kinesiotherapy, massage, individual therapeutic exercises controlled by an instructor, miostimulation in walking on a running track, test-diagnostics and training on arthrological programmed complex "BIODEX". Thus, the earliest rehabilitation of patients after syndesmoplasty of anterior cruciate ligament of knee-joint and their further dynamic observance is the most system of working stability restoration and the return to the active life of this type of patients

P034

THE ROLE OF POPLITEAL LYMPH NODES IN DIFFERENTIATING RHEUMATOID ARTHRITIS FROM OSTEOARTHRITIS BY USING CE 3D-SPIR MR IMAGING

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AIMS

The regional lymph nodes are the primary target for the spread of local inflammation. The popliteal lymph nodes are large in neonates and they gradually decrease in size throughout life. We wanted to assess the role of the popliteal lymph nodes for differentiating rheumatoid arthritis from osteoarthritis by using contrast enhanced, three dimensional fat-suppressed inversion recovery (3D-SPIR) MR imaging.

METHODS

Contrast enhanced 3D-SPIR MR imaging of 32 knees (16 with rheumatoid arthritis and 16 with osteoarthritis) was analyzed. The patients fulfilled either the American College of Rheumatology (ACR) 1987 classification criteria for rheumatoid arthritis or the ACR 1986 classification criteria for osteoarthritis of the knee. The MR imagings were performed on a 1.5-T imager (Intera) with a dedicated extremity coil. The patients were examined in the supine position with the afflicted knee placed in the neutral position. Three dimensional fat-suppressed inversion recovery (3D-SPIR) MR images were acquired with contrast enhancement in the sagittal plane for each patient and the images reformatted as axial images. All the images were reviewed for the presence of popliteal lymph nodes by two of the authors and then a determination was made by consensus.

RESULTS

The prevalence of the observed popliteal lymph nodes was significantly different between the patients with the osteoarthritis and the patients with the rheumatoid arthritis. The popliteal lymph node was observed in only one patient of 16 osteoarthritis cases (size of lymph node:7mm), whereas it was visible 14 of 16 rheumatoid arthritis cases. The number of total lymph nodes was 27 and mean size of the lymph nodes was 9.48 mm in rheumatoid arthritis patients.

DISCUSSION-CONCLUSION

Rheumatoid arthritis and osteoarthritis are common joint diseases in the elderly. Making the correct diagnosis and initiating an appropriate therapy has a heavy influence the future joint function. The number and size of the popliteal lymph nodes observed on the MR images might serve as simple and useful markers in differentiating rheumatoid arthritis disease from osteoarthritis disease.

P035

JUVENILE RHEUMATOID ARTHRITIS: DESCRIPTION OF THE POPULATION FOLLOWED BY PMR IN HGSA

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HGSA

INTRODUCTION

Juvenile Rheumatoid Arthritis (JRA) is the most common rheumatologic disease in childhood, with a prevalence of 10-85 cases for 100000 population. It is not a single disease, rather it is a group of diseases of unknow etiology, manifested by chronic joint inflammation persisting for at least 6 weeks, with onset before 16 years old. The Physical Medicine and Rehabilitation Department of Hospital Geral de Santo António has an individualized consultation for this purpose since 2003.

OBJECTIVES

Our goal in this work is to describe the JRA population in HGSA.

MATERIAL AND METHODS

Retrospective data analysis of all the JRA cases observed in the Pediatrics PMR consultations was made. For this purpose we used a protocol where significant data such as age and gender, initial presentation and evolution, tender and swollen joint count, range of motion limitations, joint deformities and laboratory and radiologic abnormalities was registered.

CONCLUSIONS

The most relevant data of the JRA population in Hospital Geral de Santo António will be presented.

P036

POSTOPERATIVE REHABILITATION IN RHEUMATOID ARTHRITIS: ABOUT A CASE REPORT

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HOSPITAL CURRY CABRAL

Orthopaedic surgery for patients with rheumatoid arthritis, is a common and important decision, which must be taken within correct timing. The purposes of such surgical procedures are pain relief, correction of deformities and functional improvement. The role for Physical Medicine and Rehabilitation is essential, both in preoperative and postoperative periods. The authors present a case report of a female patient aged 70, diagnosed with rheumatoid arthritis in 1974. This patient had total left knee replacement in September 1995, total right knee replacement in April 1996 (which was revised in June 2000), total left hip replacement in December 1999 and total right hip replacement in February 2000. The last surgery performed was a left ankle arthrodesis, in October 2003. Through all these years, this patient has undergone several rehabilitation treatments, including two periods of inpatient rehabilitation care. At present, the patient walks with use of two forearm support crutches. She is independent on transfers and partially dependent on dressing, feeding and personal hygiene. She uses several devices including an elevated toilet seat, tub grab bar and utensils with customized grip.

P037

MULTIDISCIPLINARY INTERVENTION IN THE MANAGEMENT OF RHEUMATOID ARTHRITIS PATIENTS

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CMR ALCOITÃO

Rheumatoid arthritis is a chronic, progressive disease with a long term outcome, characterized by significant morbidity, loss of functional capacity, and increase mortality.

We aim to present a multidisciplinary intervention in the management of rheumatoid arthritis (R.A.) patients. Purpose – the rehabilitation approach to the management of the R.A. has several goals: alleviation of pain; reduction of joint inflammation; improvment in function and minimization of joit damage.
Methods – a group of 8 patients begin the process of rehabilitation during a period of 8 weeks, at the department of physical and occupational therapy, including hydrotherapy, after a medical appointment. Several self-report questionnaires and performance based measures are used with these patients, at the beggining and at the end of the intervention.Once a week all the team get together and present a theme related with this illness.
Conclusion – after the period of 8 weeks, we conclude with an analysis of the measure instruments showing that most of the patients experienced an improvment in function and a degree of pain relief.

P038

COMPARISION OF ANTI CYCLIC CITRULLINATED AND ROMATOID FACTOR LEVELS IN RHEUMATOID ARTHRITIC PATIENTS

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INTRODUCTION

Rheumatoid arthritis (RA) is a chronic inflammatory condition characterized by polyarthritis that often leads to joint destruction that can be prevented with early diagnosis. Rheumatoid factor (RF), although widely used in the diagnosis of RA, is neither specific nor sensitive. Anti-cyclic citrullinated peptide (anti-CCP) antibodies, have been reported to carry high specificity in the diagnosis of RA.

AIMS

In this study, we aimed to determine the romatoid factor(RF)and anti cyclic citrullinated peptide (Anti-CCP) levels in patients with rheumatoid arthritis (RA). and to compare the diagnostic and clinical value of anti-CCP with that of RF.

MATERIALS AND METHODS

The study was carried out at the division of rheumatology, Göztepe Hospital, Istanbul, Turkey.RF seronegative and seropositive two groups with similar dermographic were obtained among the patients with RA who were followed at the division of rheumatology Göztepe Hospital,between the years 2004-2005. 60 patients with RA(diagnosed according to American Rheumatism Association Criteria) of at least 5 years duration, were enrolled in this. The patients were divided into two subgroups according to RF results seropositive (n=30) and seronegative (n=30). The control group (n=20) comprised of healthy individuals. Serum RF levels were measured by nephelometric method (Beckman Coulter, USA) and ACCP levels were measured by ELISA (Euroimmun Medizinische Labordiagnostika GmbH, Germany).

RESULTS

Anti-CCP antibodies were found to be positive in 96.7% of the seropositive and 26.7% of the seronegative patients and the difference was significant ($p<0.01$). No positive result was found in control group.

CONCLUSION

In conclusion our study support the hypothesis that in diagnosis of rheumatoid arthritis anti-CCP is a better indicator than RF especially in patients with RF negative.Using anti-CCP also helps in differential diagnosis of RF positive patients with other rheumatoid diseases.

P039

THE INFLUENCE OF THE KNEE ARTHRITIS TO MOBILITY OF THE KNEE IN THE RHEUMATOID ARTHRITIS PATIENTS

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SUMMARY

Many joints of our body can suffer from arthritis. Arthritis of the knee, in the patients with rheumatoid arthritis (RA), takes to serious functional breakdown, as well as possible disability heavy level.
The objective of this study is to estimate the influence arthritis of the knee to mobility of the knee in the patients with RA.

MATERIAL AND METHODS

150 patients with RA, which fulfilled ACR criteria, were involved, during stationary treatment and examination at the Rheumatology Department of the Institute Niška Banja. The patients were divided into two groups: the group with knee arthritis (94 patients – 62.7%) and the group without knee arthritis (56 patients-37.3%).

RESULTS

Our results showed that patients with knee arthritis more frequently had worse mobility of the knee, in relation with patients without knee arthritis. The average value of the left knee flexion in patients with knee arthritis was 96.58+21.48.º in relation with patients without knee arthritis where it was 107.55+14.72.º, with high statistically significant $p<0.001$. The average value of the right knee flexion of patients with knee arthritis was 95.48+23.72.º in relation from patients without knee arthritis where it was 106.24+18.74.º, with high statistically significant $p<0.001$. The results also showed that patients with knee arthritis, had worse value of extension of the knee: 177.38+5.81.º in relation to 179.75+0.76.º from left knee, with high

statistically significant p<0.0001, and 177.14+5.04.º in relation to 179.88+0.71.º, from right of the knee, with high statistically significant p<0.0001.

DISCUSSION

Our results show, that the knee had significant influence with a mobility of the knee. The presence of the knee arthritis, in the patients with artrhritis rheumatoides, significantly reduces flexion and extension of the knee.

CONCLUSION

Arthritis of the knee, in the patients with arthritis rheumatoides, takes to serious functional breakdown, as well as possible disability heavy lavel. Key words: arthritis of the knee, mobility, arthritis rheumatoides.

P040

MAGNETIC STIMULATION FOR PATIENTS WITH KNEE OSTEOARTHRITIS

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INTRODUCTION

The American College of Rheumatology has given the practice guidelines for the management of knee OA. These guidelines emphasize the role of physical therapy whose goals are control of pain, improvement of knee function and health-related quality of life.

AIMS

To compare the effects of two different physiotherapy programs in the rehabilitation of the patients with knee osteoarthritis (OA).

METHODS

Single-blind prospective clinical trial included 38 patients with knee OA who were randomly assigned to 2 groups: group A (20 patients) was treated with magnetic stimulation and kinesitherapy, while group B had kinesitherapy during 6 weeks (the first 5 sessions were performed daily, and the next 15 every second day). A group patients had administrated to the knees using a circular coil that produced a magnetic stimulation with high level of magnetic induction (400 mT) and a frequency of 16 imp/min. Twenty sessions of kinesitherapy, knee range of motion and quadriceps and hamstring strengthening exercises, were administrated to all participants in both groups. At baseline and end of the treatment, the two physiotherapists who were unaware of the treatment groups assessed the clinical parameters: knee pain, knee swelling and knee range of motion. Knee pain was evaluated using the pain subscale of the Western Ontario and McMaster Universities Index (WOMAC). To assess the knee swelling, circumference of both knees was measured at the knee joint line using plastic (centimeter) ribbon. Active knee flexion was measured using goniometer and based on the principles of Neutral Zero method. Descriptive statistics included t-test for dependent variables for comparing means before and after treatment within groups. Statistical significance was set at P<0.05.

RESULTS

After treatment mean WOMAC subscale for pain decreased significantly in A group (P<0.001), and in B group (P<0.05). Marked reduction of knee circumference was noticed in group A and group B (P<0.001, P<0.05 respectively), while significant increase in knee flexion was observed in both groups (P<0.01). Significant differences between groups were found.

CONCLUSION

Clinical Improvements observed in both groups are related to the physiotherapy treatments. Although there were significant differences between 2 groups, reduction of knee pain and knee circumference was greater in the A group treated with magnetic stimulation.

P041

LIPIDS PROFILE IN PATIENTS WITH HIP AND KNEE OSTEOARTHRITIS

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INTRODUCTION

Lipids in interaction with other mechanisms may play a important role in the pathogenesis of hip and knee osteoarthritis. The aim of this study was to determine Body Mass Index (BMI) and investigate the existing disturbance of the lipids profile in the patients with osteoarthritis of the hip and knee.

PATIENTS AND METHODS

The study is designed as clinical prospective trial. We followed 129 consecutive patients with symptomatic knee and hip osteoarthritis, 95 female and 34 male, average age 63.5 years (range from 35 to 84 years), with clear diagnosis of hip and knee osteoarthritis that were admitted on hospital physical treatment. All patients were divided in two groups with respect to the leading diagnosis: group A (patients with knee osteoarthritis) and group B (patients with hip osteoarthritis). Total cholesterol levels, triglycerides and body mass index (BMI) was assessed for every patient.

RESULTS

65,12%, of treated patients were with diagnosis of the knee osteoarthritis (group A) and 34,88% with diagnosis of the hip osteoarthritis (group B). Average value of the BMI for all 129 patients was in the range of the obesitas (31,2 kg/m2). In the group A, BMI was 31,78798 kg/m2 and in group B it was 30,61kg/m2. Although average value of the BMI was higher in the group A, differences of the BMI were not statisticaly significant between group A and group B (p>0,05). 61.9% of the

patients of the group A was in the range of the obesitas and 57.8% of the patients of the group B. Diferences were not statisticaly signifficant (p>0.05). Average values of the serum triglycerides levels were over normal range in both groups of the patients, but average values of the serum cholesterol levels stayed in the range of the normal values. In the group B, 68,9% of the patients have high serum triglycerides levels with respect to the normal values, but in the group A high serum triglycerides levels were present in 52.38% of patients. The diferences between occurrence of the hipertriglyceridemia in group B and group A were statisticaly significant (p<0,039). Serum cholesterol levels were higher than normal in 21.4% of the patients from group A and in 20%of the patients from group B. Diferences were not statisticaly significant (p>0,05).

CONCLUSION

These data support the hypothesis that lipids, esspecially triglycerides may play a significant role in the pathogenesis of the hip and knee osteoarthritis.

P042

A DOUBLE-BLIND TRIAL OF CLINICAL EFFECTS OF THERAPEUTIC ULTRASOUND IN KNEE OSTEOARTHRITIS

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INTRODUCTION

Osteoarthritis(OA) is degradation of articular cartilage, accompanied by the most common articular rheumatic disease principally affects the elderly.The knee is one of joints most affected. Knee OA is a prevalent musculoskeletal condition affecting older people, causing pain, physical disability and reduced quality of life. OA treatment oriented primarily toward pain relief and preserve joint function. Therapeutic Ultrasound (US) is one of the physiotherapy managements used in treatment of knee OA.

AIM

A randomised double blind clinical trial was conducted to determine the effectiveness of ultrasound therapy in knee osteoarthritis.

METHODS

67 patients (mean age= 54,8±7) were randomised to receive either 1 MHz frequency and 1 watt/cm² power continous ultrasound for 5 minutes (n=34) or sham US (n=33) as a placebo.10 sessions of treatment were applied to the target knee of the patient. Home exercise program for quadriceps muscle were given to each patient. A blinded evaluation at baseline and after treatment was made. Primary outcome was pain on movement (assesed by visual analog scale). Secondary outcomes were Western Ontario and Mcmaster Universities Osteoarthritis Index (WOMAC) scores, 50 metres walking time, knee range of motion (ROM).

Results: Both groups showed significant improvements in knee pain on movement. In US group the improvement in VAS score is statistically and significantly higher (p=0.000) and more pronounced than placebo group. Pain reduction averaged 47.76% in US group which is also statiscally significant (p=0.013) than placebo group. All secondary outcomes improve in both groups. WOMAC scores, 50 metres walking time measurements were statistically significant in US group when compared with placebo group (p=0.006, p= 0.041) ROM degress improved significantly in both groups. There was no significant difference between two groups.

Conclusions: Results suggest that therapeutic US is safe and effective treatment modality in pain relief and improvement of functions in patients with knee OA.

P043

EFFECTIVENESS OF PHONOPHORESIS DEEP RELIEF GEL AND LLLT IN THE TREATMENT OF KNEE OSTEOARTHRITIS

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INTRODUCTION

Knee OA is one of the most frequent ilness of the elderly. The therapeutic options consist in conservative measures with the aim to minimase the pain, to improve the mobility and to postpone the surgical procedures.

AIMS

To compare clinical effects obtained with three therapeutic models:1. Phonophoresis DEEP RELIEF (Ibuprofen-Levomenthol) gel, 2. Low Level Laser Therapy (LLLT),3. Combination of Phonophoresis DEEP RELIEF gel and LLLT.

METHODS

Open, prospective, randomized clinical study which included 30 female patients in acute phase of knee OA. Diagnose was made by clinical and radiographic examinations. Patients were divided in three groups: I group, 10 patients, mean age 60±5.65 years were treated by Phonophoresis DEEP RELIEF gel with an intensity 1W/cm2, 5 min, X treatments. II group, 10 patients, mean age 59±6.19 years were treated by LLLT with following characteristics:GaAs Laser, 904 nm, 5000 Hz, in total daily dosage 10J/cm2, 3 min, X treatments. III group, 10 patients, mean age 58±10.02 years were treated bt the combination of Phonophoresis and LLLT, X treatments. The evaluation of efficacy parameters were

performed by following up:1.Subjective difficulties (VAS 0-100 mm), 2.Size of knee measured across the middle of patella by the centimeter band, 3.Range of joint motion (flexio) measured with goniometer. This parameters were measured at 1st and 10th day of treatment. For the statistical analysis, an One way ANOVA, Repeated measures ANOVA and Post Hoc Tests were used.

RESULTS

1. There were high significant improvement in parameters of pain intensity and size of knee between the groups: One way ANOVA test, $p<0.01$: 2. There was no significant improvement in parameter of joint movement between the groups:One way ANOVA test, $p>0.05$: 3. There were high significant improvement in all parameters in each experimental group:Repeated measures ANOVA test, $p<0.01$.

CONCLUSION

Combined treatment of Phonophoresis DEEP RELIEF gel and LLLT has better effectiveness in pain intensity, size of knee and improvement of motion in comparison with monotherapy.

P044

INFLUENCE OF OBESITY ON SELF-EVALUATION OF HEALTH IN PATIENTS WITH GONARTHROSIS

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INTRODUCTION

Modern way of living, irregular consumption of food and obesity could lead to the arthrotic lesions in main joints, most of all on knees.
Aim- The aim of the study was to establish how obesity can influence self-evaluation of health in patient with gonarthrosis.

MATERIAL AND METHODS

We examined 86 patients (18 male and 68 female), age 40-75, with the diagnosis of gonarthrosis (grade II and III of Kellgren & Lawrence radiographic scale). Analysis of body composition was performed with Tanita BC 540 Innerscan Body Composition Monitor. We used scale Body Mass Index (BMI), National Health Center Statistic Criteria and self-evaluation of health by patients.

RESULTS

Average body mass was 82.9 kg, (96.5 (SD±13.51) for male and 79.3 (SD±17.24) for female), but no statistically significant difference was established between the genders. Average BMI=31.6737kg/m2 (SD±4.58), (31.7233 (SD±4.05) for male and 31.6606 (SD±4.77) for female) and no statistically significant difference was found, although 93% of patients had problems with overweight, (37.2% of them belong to the intermediary group between the obese and those with normal BMI, while 34.9% suffer from obesity of I grade). Patients evaluated their state of health with average grade of 54.86. Even though male patients evaluated their health worse (47.44) and female better (56.82), no statistically significant difference was found ($p=0.22$). We noticed the influence of obesity on patient's self-evaluation of health, which suggests that patients with normal weight evaluated their health as better (74.67). Patients with obesity grade III evaluated their health as worst (40.00).

CONCLUSION

Obesity is one of the main problems in patients with gonarthrosis, causing worse patient's self-evaluation of health, which is connected with the category of obesity.

P045

EFFECTS OF DIADINAMIC CURRENTS ON PULSE AND PRESSURE IN PATIENTS WITH CERVICAL SYNDROME

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INTRODUCTION

Diadinamic currents (DD) is one of the classical procedures used in the treatment of rheumatologic, neurological and orthopedic diseases and conditions. Apart from that, there are certain doubts and discordances regarding the application of DD in certain categories of patients.
The aim of this study was to determine how much the cervical application of DD influences the pressure and pulse change in the patients, especially among the elderly population.

MATERIAL AND METHOD

prospective, observational clinical research involving 24 outpatients with cervical syndrome. The patients were divided into 2 groups: a younger one (14 patients) with average age 43.7 ± 9.9 years and an older one (10 patients) – 65.2 ± 4.4 years. All the patients' pulse and pressure were measured before and after the treatment, which comprised of an DF+CP+LP shape of DD. Length of application were 6 minutes, 8 treatments in total. The statistical processing was performed using the Student's t-test.

RESULTS

there were significant changes in systolic pressure only in the group of younger patients (112,2 ± 13,7mmHg vs 109,8 ± 13,7mmHg, $p < 0,05$), while changes in systolic pressure in group of older (122,5 ± 15,7mmHg vs 120,6 ± 14,7mmHg), and the diastolic pressure and

pulse in both groups did not differ significantly before and after therapy.

CONCLUSION

Although a change in the systolic pressure before and after the application of DD was statistically observed, these oscillations are not clinically significant.

P046

COMPARISON BETWEEN TWO PROGRAMS OF ETIDRONATE FOR PREVENTION OF POST-TRAUMATIC HETEROTOPIC OSSIFICATION (A STUDY IN PATIENTS SUFFERING FROM HYPERTROPHIC OSTEOARTHRITIS)

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INTRODUCTION

Heterotopic Ossification is a well known late complication of Total Hip Arthroplasty. Prophylaxis with Biphosphonates, especially Etidronate, against Heterotopic Ossification in patients undergoing primary Total Hip Arthroplasty is well stated.

AIM

We compared the effectiveness of Etidronate when administrated only after the surgery in an early stage, with that of the same drug administered in the same dosage and duration of treatment postoperatively, but given also in the same dose preoperatively.

METHODS

Patients suffering from hypertrophic osteoarthritis who underwent cementless total hip arthroplasty, between 14.10.04 and 03.03.06, in K.A.T. and Asklipieion Hospitals in Athens, Greece. A standard cementless posterior approach was applied in all patients. In group A etidronate was given at a dosage of 20 mg/kg/day b.w. in 5 patients for 12 weeks, starting the first post-operative day. In group B the same drug was given in 7 patients, at the same dosage for the same period of time after the operation, but for 2 weeks before the operation as well. Evaluation was done after 3 months, based on an A-P X-ray of the operated hip, scored by the Brooker scale.

RESULTS

In group A after 3 months, 2 (40%) patients didn't have any radiological sign of Heterotopic ossification. 2 (40%) patients have developed heterotopic ossification of Brooker stage I while 1 (20%) patient developed Brooker stage II. In group B after the same time 6 (86%) patients were free from heterotopic ossification, while 1 (14%) had developed Brooker I.

CONCLUSION

Although the sample is small some deductions can be made. The post-operational treatment with Etidronate is not enough in preventing the early H.O. formation, at least the mild forms of H.O., Brooker I and II. On the contrary: if a short course of pre-operational treatment is added, etidronate seems to give adequate prophylaxis against post-traumatic H.O.

P047

CHOICE OF QUALITY OF LIFE SCALES IN THE EVALUATION OF OSTEOPOROTIC PATIENTS

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OBJECTIVE

Osteoporosis (OP) has gained an increasing importance with respect to quality of life, and socioeconomical aspects, for it influences quality of life unfavourably, and leads to social isolation.Our aim was to choose the most efficient one among three different quality of life scales

MATERIAL AND METHOD

In our study, 33 postmenopausal osteoporotic patients (according to the criteria of World Health Organization) were included. All were, at least within 3 years of postmenopause. The patients completed SF-36, Nottingham Health Profile (NHP), and Qualeffo –41 scales during pretreatment period and one year after the termination of the treatment. Reliability coefficients, and responsiveness indices of these tests were estimated.

RESULTS

Mean ages (64.42 ± 7.74 years), body weights (62.06 ± 1.41 kg), and heights (154.61 ± 5.49 cm) of our patients were calculated. Alpha Cronbach values for SF-36 (0.88), NHP (0.88), and Qualeffo-41 (0.87) were also estimated. A statistically significant improvement was detected in all of subgroups based on three scales during posttreatment period ($p < 0.0001$). Then, magnitudes of impact for SF-36, NHP, and Qualeffo-41 were 1.58, 1.55, and 2.32 points respectively.

CONCLUSION

General health scales like SF-36, and NHP can be used for the evaluation of quality of life of these patients, however osteoporosis – specific Qualeffo-41, gives more spesific information about the quality of life of osteoporotic patients.

P048

CORRELATION BETWEEN RISK FACTORS FOR OSTEOPOROSIS (OP) AND DEXA RESULTS

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INTRODUCTION

OP is a disease characterized by low bone mass and structural deterioration of bone tissue, leading to bone fragility and an increased susceptibility to fractures (hip, spine and forearm fractures). According to WHO OP is second to leading health care problem, 10% of the world's population suffers from OP, especially women in menopausal period (about 40% suffer from OP). Most often, the first symptom is a fracture (hip fracture – 30% invalidity, 20% mortality).

AIMS

To show correlation between DEXA results and risk factors for OP in order to improve prevention and make early diagnosis of OP.

METHODS

From November 2005 to May 2006, DTX4000 Osteometer at distal part of the forearm determined BMD of 992 patients (both gender). Tested people were sent by doctors or on self-initiative. For all of them the questionnaire was filled in containing up-to-now acknowledged the most common risk factors for OP. The patients were classified according to T-score in three groups: normal result, osteopenia (Op), OP and the frequency of risk factors was investigated in each group. Data were processed by Kruskal Wallis Test, X2 Test, Fisher's Exact Test and Mann-Whitney U – Grouping Variable.

RESULTS

992 patients were tested of which 88.8% were female and 11.2% male. There is statistically significant correlation between DEXA results and the following risk factors: gender (group Op+OP makes 86% women and 14% man); age (OP group makes >65 years – 56%, 46 to 65 – 42%, <45 – 2%); menopausal (OP+Op 63%); 40% has OP with BMI < 19; 30% with OP has height loss >4 cm; of 62 patients with fracture 48.4% has OP. In this work without statistical significance were: bad lifestyle (smoking, alcohol, coffee, lack of exercise), low calcium and Vitamin D, heredity and chronic diseases.

CONCLUSION

Since there is correlation between DEXA results and risk factors, the risk factors on which we cannot influence on (gender, age, menopausal, heredity, diseases) should lead us to screening – early diagnosis of OP (DEXA), and the risk factors on which we can influence by education of patients (diet, exercise etc.) can help us in preventing OP. Knowing risk factors, early diagnosis, education of patients, including medical therapy is an adequate way for preventing OP fractures.

P049

ALTERATIONS IN BONES OF PREPUBERTAL RATS WITH TESTICULAR TORSION

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INTRODUCTION

The etiology of male osteoporosis is not clear. Testicular torsion is one of the leading cause of hypogonadism among the children. Its effect on the development of osteoporosis and bone mineral contents in the adulthood has not been investigated yet.

AIMS

We aimed to evaluate the bone mineral densities (BMD), bone mineral contents (BMC) and bone cortex thickness of adult rats of which testes were torsioned, detorsioned or removed in their childhood.

METHODS

Thirty-two prepubertal (35 days old) male Wistar albino rats were divided into four groups containing each 8 rats. The rats in the SHAM group underwent scrotal incision only. In the torsion group rats, both testes were torsioned 720 degrees. In the torsion and detorsion group, the testes were detorsioned after 3 days of 720o torsion. The Torsion and Orchidectomy rats underwent orchidectomy at the 3rd day subsequent to 720o of bilateral torsion. Three months after surgery, bone mineral density (BMD) and content (BMC) were measured by Dual Energy X-ray Absorptiometry (DEXA) at the lomber region (L2-L4) and vertebrae.

RESULTS

The lowest values of BMD and BMC were in rats with torsion (mean 0.075 g/cm2 and 0.290 g), and highest in the SHAM operated animals (mean 0.142g/cm2 and 0.488 g). Detorsion and orchiectomy subsequent to the torsion had some beneficial effects on the BMD and BMC (mean 0.124 g/cm2, 0.108 g/cm2 and mean 0.516 g, 0.331 g respectively). The sham operated animals had a mean of 388.52 µm of bone cortex thickness, whereas torsion only group had mean 220.16 µm ($p<0.05$). These values of the groups of detorsion and orchidectomy were between them (mean 334.82 µm and 328.37 µm respectively).

CONCLUSION

Bilateral testicular torsion in prepubertal rats may lead to bone loss in their adulthood. Detorsion may prevent the negative effects of torsion on bones in rats.

P050

COMPARISON OF THE EFFECTS OF ALENDRONATE AND RISEDRONATE TREATMENT IN POSTMENOPAUSAL WOMEN WITH OSTEOPOROSIS

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INTRODUCTION

Osteoporosis (OP) is a disease characterized by skeletal fragility, represents a major health problem especially for postmenopausal women. Using several pharmacological agents in OP treatment it is possible to affect inherent pattern disease and decrease the incidence of fractures.

AIMS

This study was performed to compare and to research the effects of once weekly alendronate sodium and once weekly risedronate sodium treatment on bone mineral density (BMD) in postmenopausal osteoporotic women.

METHODS

One hundred and eleven patients were included into this study and randomly classified into two groups. Group I (n=60) received alendronate Na (70mg/week) and group II (n=52) received risedronate Na (35mg/week). All patients took 1000mg calcium per day in addition to this therapies. The study duration was limited by 12 months. Age, body mass index, duration of menopause were recorded. The efficacy of the treatment was evaluated by BMD measurements at lumbar spine and proximal femur at the beginning and 12th months of the treatment. The statistical analyses were done by Shapiro-Wilk test and ANCOVA.

RESULTS

The mean age was 56.65± 8.25 years in the group I and 56.69±7.75 years in the group II. There was no significant difference in baseline characteristics between two groups ($p>0.05$). Significant improvement was found at the end of the treatment in groups itself by lomber spine and proximal femur BMD (Group I: $p<0.05$, group II: $p<0.05$). There was no significant difference between two groups by lomber spine and proximal femur BMD ($p>0.05$).

CONCLUSION

Our results suggest that both treatment protocols provide similar efficient treatments for postmenopausal OP and almost have similar effects in enhancing the BMD.

P051

TRANSIENT BILATERAL OSTEOPOROSIS OF THE HIP IN PREGNANCY: CASE REPORT

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Transient osteoporosis of the hip (TOH) is an unusual clinical syndrome characterized by transient osteopenia, a sudden or gradually onset of pain and disability, with an intact articular surface. Spontaneous recovery is usually within 12 months from the beginning of symptoms. With an unknown aetiology it occurs more often in middle-aged men or in women in the third trimester of pregnancy and is usually unilateral. MRI is the mainstay for the diagnosis of TOH. The authors present a case of a 31 year old woman, referring a sudden onset of bilateral hip pain at the third trimester of a twin pregnancy, without any known precipitating factors. There was gradual symptom worsening, with considerable pain at rest and walking impairment, confining the patient to a wheelchair at the first week after labor. The diagnosis was suggested after MRI examination, which demonstrated a non-specific bone marrow oedema pattern at both femoral heads, further corroborated by normal laboratory blood and urine screenings. Symptomatic treatment was instituted, including restricted weight bearing and analgesic drugs. This case report is presented due to the rarity of bilateral involvement.

P052

THE EFFICACY OF CALCITONIN TREATMENT IN PATIENTS WITH LUMBAR SPINAL STENOSIS

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INTRODUCTION

Lumbar spinal stenosis is characterized with neurogenic claudication secondary to the compression of cauda equina. The most common cause of spinal stenosis is spinal spondylosis. There are studies indicating calcitonin as an effective treatment for this condition.

AIM

This study was performed to evaluate the clinical effects of calcitonin in patients with lumbar spinal stenosis.

MATERIALS AND METHOD

This study was performed to evaluate the clinical effects of calcitonin in patients with lumbar spinal stenosis. For this purpose, we studied 26 patients with lumbar spinal stenosis. Diameters of lumbar central canal and lateral recess were measured with lumbar computerized tomography in order to diagnose spinal canal stenosis. Patients were treated with nasal calcitonin (200 IU / day). The clinical assessments of patients included pain scale, lumbar extension angle, walking distance, and neurological deficit.

RESULTS

An increase in neurogenic claudication distance and lumbar extension angle, and decrease in pain were observed with calcitonin therapy. These findings were statistically significant.

CONCLUSSION

Consequently, it can be concluded that calcitonin should be considered as an option in the treatment of lumbar spinal stenosis.

P053

THE SACROILIAC JOINT PAIN AND THE WEIGHT-BEARING

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AIM

The objective of this work was to determine if weight-bearing were associated with pelvis asymmetry and pain caused by sacroiliac joint (SIJ) dysfunction.

METHODS

32 students volunteered to participate in this study (included 31 females-1 male, mean age: 21 years). Patients received a standardized physical examination, including the assessment of anatomical landmarks of os innominate (superior aspect of iliac crest, posterior superior iliac spine, anterior superior iliac spine). The determination of the side of dysfunction was based on the motion tests, primarily the standing flexion test. After the physical examination we measured the weight-bearing with Neurocom Basic Balance Master with the knee in 0º, 30º, 60º and 90º of flexion. All of the data were subjected to analysis of variance.

RESULTS

Six individuals had reported severe SIJ pain (hereinafter referred to as group SIJ-pain), 4 of the remaining 26 students had symmetric pelvis (hereinafter referred to as control group) and 21 students had pelvis asymmetry without SIJ pain (hereinafter referred to as SIJ-pain-free group). There were no significant differences in weight-bearing in groups at total knee extension. The weight-bearing was significantly higher on the contralateral leg to the side of SIJ-dysfunction in group SIJ-pain with knee in 30º and 60º of flexion but not at 90º of flexion. We did not found significant differences in the weight-bearing on legs in SIJ-pain-free and control groups.

DISCUSSIONS

We concluded that the SIJ-pain significantly influences the weight-bearing in special degrees of flexion (30 and 90o). However, regardless of SIJ findings, the weight-bearing nearly equal on both of leg with extended knee or knee in 90º of flexion. Since the 30º of flexion is an important degree of flexion in knee joint during its function (gait), these changes might have important role in the further deterioration of sacroiliac and other joints of the lower extremities. In order to clarify the role of SIJ in weight-bearing further investigations are needed.

P054

CERVICAL PAIN AS PRESENTATION OF PANCREATIC CANCER – CASE REPORT

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INTRODUCTION

Cervical pain is one of the most frequent symptoms in PRM practice today. Fortunately, most of its underlying etiologies are self limited and benign. However, neoplastic diseases often can present with pain indistinguishable from more benign causes.

CASE REPORT

We present a case of a 49-year-old man who recurred to a PRM consult for cervical pain lasting for several weeks. Physical exam was unremarkable and the X-ray normal. He started a course of rehabilitation treatment but one weak later, referred irradiation of the pain to his left arm in the territory of C8. He stopped immediately treatment and underwent a cervico-dorsal MRI that revealed osteolitic lesions in the vertebral bodies from C6 to D2. He was then admitted in the Hospital for diagnostic procedures. Blood analyses revealed high alkaline phosphatase and toraco-abdomino-pelvic scan several images suggestive of metastases in the liver, suprarenals and kidneys and an image in head of pancreas suggestive of a primary tumour. Percutaneous needle biopsy of a liver metastasis allowed the diagnosis of undifferentiated carcinoma. The patient underwent a course of radiotherapy and chemotherapy, but died after 3 months.

DISCUSSION / CONCLUSION

Approximately 40-80% of patients who die from cancer have bony metastases at the time of the dead, with spine being the most common metastatic skeletal location. The most common tumours that metastasise to the spine are prostate, breast, lung, renal cell and gastric carcinoma, being pancreatic cancer less frequent. However, the most common clinical presentation of spine tumours of any origin is back pain. Neurological deficits secondary to spinal cord or roots compression can also be part of the presentation. Therefore, back pain must be always considered as a diagnostic challenge. Differential diagnoses of degenerative processes, infections, muscular strains, neurologic impingements and neoplastic processes must be considered.

P055

A CASE REPORT: DEFECTS OF POSTERIOR ARCH OF THE ATLAS

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INTRODUCTION

Congenital anomalies of the posterior arch of the atlas (cervical -1) are very uncommon but well-documented anomaly. This condition is usually asymptomatic and discovered incidentally. Nevertheless some patients present in some degree transient or chronic neuro-

logical symptoms following minor cervical or head trauma.

CASE REPORT

A 43 year-old woman presented with occipital headache. Her symptom is worse with hyperextension of her neck. She denied any neck pain and other neurological complain. On examination, the only positive finding on physical examination was moderate upper cervical and occipital region pain throughout neck extension. Her cranial nerve examination was unremarkable, and her motor and sensory examinations were normal. Plain radiographs of the cervical spine revealed bilateral defects in the posterior arch of atlas. CT taken in flexion and extension showed no displacement and no inward mobility of the posterior tubercle during extension of the cervical spine. No evidence of compression of the cord was shown on MR image.

CONCLUSION

Congenital defects of posterior arch of atlas are rare and most of them are found incidentally. This anomaly of atlas is thought to be due to failure of chondrogenesis. The defects of the posterior arch of atlas were classified into five types, depending on presence of posterior tubercle. Because of the neurologic presentation is related on type of defect, it is worthy to recognize and classify the defect.

P056

BILATERAL PATELAR TENDON RUPTURE IN HAEMODIALYSED PATIENT

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The patelar tendon rupture is a rare condition, affecting two kinds of patients. The majority is seen in elderly patient (>60 years), showing a predisposing medical condition, such as obesity, diabetes, gout, chronic renal failure, hyperparathyroidism, lupus erythematosus or prolonged use of steroids. The second category of patients consists of the younger athletic population where tendon injury is often the end stage of a chronic inflammation of the extensor mechanism. Basketball, volleyball, rugby, soccer, high-jump, body-building and weight lifting are the mainly involving risk sports. The authors present a case of a 25 years old woman, with a chronic renal failure of undetermined aetiology and long-term haemodialysis, who suffer two successive patelar tendon rupture, the first in 2004 involving the right limb, the second during 2005 affecting the left limb. In both cases the treatment was surgical consisting of a direct suture at the site of rupture, patelar tendon plasty using the semitendinosus tendon, and growth factors; followed by a rehabilitation program including range-of-motion exercises and quadriceps strengthening. Beside the fact that sudden violent contraction of the quadriceps mechanism with the knees semi-flexed is the mainly mechanism of injury, decreased elasticity, degenerative changes in collagen fibres and decreased vascular supply would probably play a major role in the pathogenesis of the bilateral patelar tendon rupture of this patient. The authors discuss the importance of connective tissue change like elastosis, occurring in acidosis state during renal failure, which may weaken the tendon structure and explain the frequency of tendonitis and tendon rupture in patient with chronic renal failure.

P057

TENNIS LEG COMPLICATED BY THROMBOPHLEBITIS

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Muscular injuries are frequent among people who practice sport activities. The causes can be intrinsic or extrinsic to muscle and lesions can be classified from stage I to IV, ranging from muscular cramp to complete rupture. There are few data of thrombophlebitis occurring after a muscular injury. Indeed immobilization can be interpreted as the most important pathophysiological cause of deep vein pathology, such as thrombophlebitis and thrombosis. Also, there are some clinical cases where muscular rupture mimics a thrombophlebitis, or vice versa, delaying diagnosis and treatment. The authors present a clinical case of 49 years old man, who suffers a muscular rupture of the gastrocnemius muscle occurring during a squash game. During recovery and rehabilitation program, the onset of acute thrombophlebitis wasn't diagnosed delaying treatment and the return to sport activities. The review of the literature showed that this is a seldom reported situation, and we could only find one clinical case. The authors discuss the importance of diagnosis, treatment, and prevention of deep vein pathology occurring after muscular strain.

P058

POSTERIOR KNEE DISLOCATION – A CASE REPORT

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OBJECTIVES

Describe the clinical aspects concerning knee dislocation, namely the rehabilitation issues.
Case Report 50 year-old, Female, that had a low-energy traumatic posterior knee dislocation secondary to a fall. She was submitted to a closed reduction in the emergency room. Vascular and nervous lesions were properly excluded. The rehabilitation program started in the acute phase and included a 6 weeks period of immobilization, progressive muscular strengthening and pain and inflammation management. Afterwards ROM increasing techniques, gait and proprioceptive

training, were also added to the rehabilitation strategy. Achieving satisfactory knee stabilization was a main concern. RMN showed ACL and PCL complete ruptures and partial tears of both collateral ligaments and inflammatory findings. With conservative treatment, final functional status was rather satisfactory accordingly to the patient expectations concerning her daily life activities.

DISCUSSION

With this case we describe the most important aspects of this rare clinical entity, dealing with diagnosis, red flags, and treatment options.

P059

SEVERE BLUNT TRAUMA OF THE THIGH – CASE REPORT

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Acute traumatic injuries occur secondary to direct blunt trauma or excessive tension applied to the muscular system. An understanding of normal anatomy and biomechanics of the musculoskeletal system of the inferior limb is necessary to treat these lesions. Three discrete categories of acute injuries to the musculotendinous unit can be defined: muscle contusion, myotendinous strain and tendon avulsion. Among the quadriceps muscles the rectus is the most susceptible to injury at miotendinous junction due to its superficial location, predominance of type II fibers, eccentric muscle action and extension across two joints. Among the muscles of pes anserinus, the sartorius is the most susceptible to strain injury due to its superficial location and biarticular course. This is a case report of a 28 years old caucasian male without pathological antecedents who suffered violent trauma of the left thigh. This injury resulted in complete section of vastus medialis and sartorius associated with thrombosis of left superficial femoral artery. In 1st April 2006, he was submitted to left femoral-popliteal bypass (using the internal saphenous vein) and to the suture of vastus medialis using the sartorius (after disconnection of its tendinous attachments). He was evaluated by PM&R in 9th May 2006 and initiated the rehabilitation program in 10th May 2006 with functional improvement. This case highlights the importance of an adequate rehabilitation program in the outcome of severe trauma injuries of the inferior limb.

P060

EFFECTIVENESS OF ELECTRICAL STIMULATION IN SHOULDER PAIN DUE TO INTRINSIC MECHANICAL SHOULDER PROBLEMS

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INTRODUCTION

Electrical stimulation is a physical therapy modality that is used for muscle stimulation, strengthening and training.The role of strengthening shoulder muscles by electrical stimulation in intrinsic mechanical shoulder problems have not been documented before.

AIMS

The aim in this open, controlled, prospective study was to investigate the effectiveness of neuromuscular electrical stimulation in painful shoulder, resulting from the intrinsic mechanical shoulder disorders.

METHODS

45 outpatients with pain and limitation of the shoulder for at least one month were included. All patients had one or more causes of intrinsic mechanical shoulder pathologies such as impingement syndrome, rotator cuff lesions, biceps tendonitis and associated degenerative arthritis documented by imaging techniques (X-ray and magnetic resonance imaging). All patients received 20 sessions of classical physical therapy and exercise program, including hot pack and interferential current to the painful shoulder, and shoulder mobilization and strengthening exercises. 20 patients in the electrical stimulation group received additional Russian current electrical stimulation to supraspinatus and deltoid muscles, while other 25 patients receiving only classical therapy served as the control group. All patients were assessed before and after the therapy with regard to pain intensity (VAS), range of motion (goniometry) and functional status (UCLA scale) of the shoulder.

RESULTS

Electrical stimulation and control groups did not differ significantly regarding age, sex, occupation, duration of pain, and imaging findings ($p>0.05$). All assessment parameters showed significant improvements in both electrical stimulation and control groups ($p>0.05$). When the two groups were compared regarding the percentage of improvement at the assessment parameters, none of the parameters showed statistically significant difference between the two groups ($p>0.05$).

CONCLUSION

We concluded that Russian current type electrical stimulation, applied to supraspinatus and deltoid muscles did not provide extra benefit to classical physical therapy and exercise program; therefore was found to be ineffective in shoulder pain resulting from the intrinsic mechanical shoulder problems.

P061

RUPTURE OF THE PECTORALIS MAJOR MUSCLE

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Total rupture of the pectoralis major muscle is a rare injury; only about 200 cases heve been reported in the world literature. The lesion is more often found in young males and it usually occurs during sports activity. In the elderly this kind of injury is even more uncommon. The majority of the reported cases were found in nursing home patients occuring during procedures such as positioning and transferring with sudden forceful overload causing excessive muscle tension. The diagnosis can be made on clinical grounds alone being the ultrassonography a quick and useful method to confirm the diagnosis. We describe the rupture of pectoralis major in two elderly and functional dependent patients with hemiparesis secondary to stroke.

P062

PULMONARY FUNCTIONS, RESPIRATORY MUSCLE STRENGHT AND ENERGY EXPENDITURE IN ANKYLOSING SPONDYLITIS

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INTRODUCTION

It is known that a restrictive ventilatory defect is the most common pulmonary function defect in ankylosing spondylitis (AS). The weakness in respiratory muscle expect due to the restriction of chest wall. Also decreased spinal mobility in AS patients may be result in increased energy expenditure in daily activities.

AIMS

To compare the pulmonary functions, respiratory muscle strength and energy expenditure in AS patients with healthy controls.

METHODS

Twenty-two AS patients (mean age 42.4±9.9 years) and 22 healthy controls (38.6±9.4 years) were recruited this study. Chest expansion was recorded. Pulmonary function tests, maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP) were measured. Exercise capacity of patients were assessed by 6-minutes walking test. Energy expenditure while walking was assessed by physiological cost index (PCI).

RESULTS

The chest expansion, FVC, FEV1, MMEF, FEF50 and FEF75 values in AS patients were significantly lower than control group ($p<0.05$). While 9 of the 22 AS patients had normal pulmonary functions, 6 patients had restrictive lung disease and 2 had small airway obstruction. Two AS patients had both restrictive and obstructive pattern. Pulmonary function tests of control group revealed normal pulmonary functions in 20 subjects, small airway obstruction in 2 subjects and restrictive lung disease in one subject. There was no significant difference in MIP and MEP values between AS and control group ($p>0.05$). Six minutes walking distance and PCI were found significantly lower in AS patients than controls ($p<0.05$).

DISCUSSION

Although our AS patients had markedly limited movement of the chest wall and restrictive lung disease, their respiratory muscle strength was not influenced by this restriction. We found that exercise capacities and energy costs of AS patients were lower than healthy subjects similarly the previous studies. This reduction was not related to respiratory muscle performance but it may be consequences of general muscle deconditioning. As a result, rehabilitation programmes should be directed not only to improve spinal mobility but also to increase cardio-respiratory fitness in AS patients.

P063

THE EFFECT OF HOME-BASED EXERCISE ON RESPIRATORY MUSCLE AND ENERGY COST IN ANKYLOSING SPONDYLITIS

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INTRODUCTION

Ankylosing spondylitis (AS) is a chronic systemic inflammatory disease that primarily affects the axial skeleton. Significant improve in exercise capacity with regular exercise program in AS patients was reported previous studies. However there was no study which investigate the effect of specific pulmonary exercises in AS patients. Also the influence of exercise therapy on the aerobic capacity of patients was not evaluated.

AIMS

To investigate the effect of six weeks home exercise training on pulmonary function, respiratory muscles strength and exercise capacity in AS patients.

METHODS

Twenty-two AS patients (mean age 42.4±9.9 years) were recruited this study. Chest expansion, tragus-wall distance and flexion of the lumbar spine (modified Schober test) were measured. The assessment of functional ability of patients was performed by using The Bath Ankylosing Spondylitis Functional Index (BASFI). Pulmonary function tests were performed. Maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP) were measured using a digital mouth pressuremeter. Exercise capacity of patients were assessed by 6-minutes walking test (6-WT). Energy expenditure of patients while walking sub-maximal speed was assessed by physiological cost index (PCI).

Breathing exercises and upper extremity exercises were instructed patients. Patients were asked to practice these exercises at home individually for six weeks and telephoned by researchers every week. All measurements were repeated after the six weeks home-based exercise training.

RESULTS

Chest expansion, MIP and MEP values and BASFI scores were increased significantly after six weeks ($p<0.001$). There were no significant difference in pulmonary function tests except TLC after the six weeks home-based exercise training ($p>0.05$). Also 6 minutes walking distance and PCI were not changed the end of the 6 weeks ($p>0.05$).

DISCUSSION

This study showed that exercises improve the clinical variables (chest expansion, MIP, MEP and functional capacity) but not exercise capacity and energy expenditure in AS patients. Home-based exercises may be less effective that supervised training. However, specific pulmonary exercises should be recommended the AS patients as a part of any exercise programmes.

P064

FREE VASCULARIZED FIBULAR AUTOGRAFT AFTER TIBIAL AND FIBULAR SHAFT OPEN FRACTURES – A CLINICAL CASE

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19-year-old male patient who suffered a car accident on the 12/09/2004 with subsequent right tibial and fibular shaft open fractures. He was submitted on the same day to surgical debridement followed by fracture external fixation. He started a rehabilitation program in the Physical Medicine and Rehabilitation department, Hospital Senhora da Oliveira, Guimarães, E.P.E., on the 19/01/2005. Due to right tibial chronic osteomyelitis he was submitted on the 27/09/2005 by the Plastc Surgery department, Centro Hospitalar de Vila Nova de Gaia to a free vascularized fibular autograft. Restarted the rehabilitation program on the 22/11/2005. At present the patient has no pain complaints, global right lower limb muscle strength testing 4, walk unaided and fully independent in activities of daily living.

P065

INCIDENCE OF HETEROTOPIC OSSIFICATION IN HEMIPLEGIC PATIENTS

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AIM

To investigate the incidence of Heterotopic Ossification (HO) in patients (pts) with hemiplegia due to cerebrovascular accident (CVA).Correlation with risk factors and assessment of functional outcome with or without resection of the HO The incidence of HO is much more rare in CVA pts than in brain injuries (11%-76%) and in spinal cord injuries (16%-53%).

METHOD

We studied 433 CVA pts who were hospitalized in our department during a period of seven years (1999-2005), the presence of HO was studied with x-rays and bone scanning on admission. All pts with HO underwent treatment with disodium etidronate p.os. and 2 pts underwent surgical resection for the H.O.

RESULTS

11 patients developed H.O. (2.54%). Nine of them were males and two females, with a mean age of 56 years. Six pts had an ischemic lesion and five a hemorrhagic one. Three pts had right hemiplegia and presented global aphasia (27%) and six left hemiplegia with neglect (54%). Hospitalization in an intensive care unit (I.C.U.) was reported in 6 pts (54%). Seven pts developed H.O. in one joint and four in more than one. The hip was the most often affected joint, followed by shoulder and knee. The localization of the H.O. was always contralateral to brain lesion. In cases of bilateral lesion H.O. were found at the joints of the more severe affected side of the body. The average period of their rehabilitation program was 5.39 months compared to 2.6 months of pts without H.O. Three pts achieved functional ambulation with orthosis, 3 pts achieved therapeutical standing position and ambulation with orthosis, 5 pts remained wheelchair users.

CONCLUSION

The duration of hospitalization in our rehabilitation department was longer in pts with H.O. and hemiplegia and only 28% of the pts achieved functional ambulation with orthosis. These observations could be explained by: a) the increased difficulties of the mobilization of the pts due to the decreased range of motion in the affected joints and pain syndrome, b) the rather seriously impaired health status in 8 pts (72% had severe cardiovascular disorders).

P066

HYPERTROPHIC ANKLE SYNOVITIS – A CASE REPORT

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INTRODUCTION

Hypertrophic synovitis is a rare condition with very few articles found in the literature. Some authors present

it as an idiopathic entity, while others present it as a posttraumatic sequel.

AIMS

To report a case of hypertrophic ankle synovitis.

METHODS

The authors describe a case report of a 35-year old male patient, with a history of an ankle sprain with capsuloligamentar lesion one year earlier, that mantained chronic ankle pain, inflammatory activity (synovial effusion and swelling) and functional disability for walking and sports activities during that whole period of time. For diagnostic purposes, it was performed an X-ray, a scanner, a MRI of the ankle and an arthrocentesis.

RESULTS

The physical examination demonstrated periarticular edema and anterior instability of the ankle. The X-ray showed degeneration changes of the medio-tarsus. The scanner revealed degenerative changes of the tibiotarsal articulation and of the medio-tarsus. The MRI suggested a chronic hypertrophic synovitis. The arthrocentesis showed synovial fluid. It wasn't performed a tissue biopsy. The patient awaits surgery (eventually, a synovectomy will be performed).

DISCUSSION / CONCLUSION

Even though they are rarely encountered conditions, when a patient presents with chronic ankle pain, with or without instability of the articulation, and associated with recurrent effusion of the ankle, we have to consider, in differential diagnosis assessment, different forms of synovitis, namely hypertrophic synovitis and PVNS. A MRI that reveals hemossiderin accumulation in the macrophages of the synovial membrane and a hematic arthrocentesis suggest a PVNS and, therefore, demands a close follow-up of the situation.

P067

HYPOALGIC EFFECTS OF TENS (LOW AND HIGH FREKVENCY) IN VARIOUS CLINICAL TYPES OF CERVICAL SYNDROM

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OBJECTIVE

The aim of the study was to asses the hypoalgesic efficiancy two different frequency of TENS, high and low,in the patients with cervical syndrom.

METHOD

The study was randomized and prospective. Patients were divided into III groups by the diagnostic criterium of the pain classification: 10 patients with local cervical syndrom,10 patients with cervical brachialgia and 10 patients with cervical radiculopathia. I group included 10 patients with local cervical syndrom,mean age 56+-7.26years.5 patients were treated with low frekvency TENS (200mikrosec,4Hz) 10 treatments, and 5 were treated with high frekvency TENS (200 mikrosec,110Hz) 10 treatments. II group included 10 patients with cervical brachialgia mean age 52+-6.05. 5 patients were treated with high and 5 with low frekvency TENS,10 treatments. III group included 10 patients with cervical radiculopathia mean age 58+- 5.54. 5 patients were treated with high frekvency TENS and 5 with low frekvency TENS,10 treatments. We have measured pain with Visual Analogue Scale and Mc Guill Pain Questionnare,and range of movement with goniometar. Measurements were taken before the treatment,5th day of treatment and after the treatment.

RESULTS

There were high significant improvement in parameters pain intensity and joint movements between the groups;one way ANOVA test p=0.000<0,01.There were high significant improvement in all parameters, pain intensity and joint movements in all three groupes, on the reapeted measurements ANOVA test p=0.000<0,01.

CONCLUSION

There is no significant differences between the treatment with high and low frekvency TENS in the patients with various clinical types of cervical syndrom.

P068

EFFECTS OF ELECTROMAGNETIC FIELD IN TREATMENT OF PATIENTS WITH FRACTURE OF DISTAL PART OF RADIUS

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In the past thirty years significant results were obtained by using electromagnetic therapy, especially in the domain of orthopaedics and traumatology. The goal of this research is the objective evaluation of the therapeutic effects of the low frequency pulsed electromagnetic field (LFPEMF) and classic physical procedure- IFC in the treatment of patients with fracture of distal part of radius. This examination was made as randomised controlled clinical trial, opened type and included 30 patients (20 females, 10 males). All tested persons had pain and limited movements in the wrist. All patients were divided into two groups. The first (control) group of 15 persons was composed of patients treated with IFC and therapeutic exercises. The second (experimental) group of 15 persons included patients treated with LFPEMF and therapeutic exercises. As observing parameters was used: Lattinen test for the evaluation of the pain sensitivity and active movements in the wrist joint. For statistical analysis of the aquired data was used 2 WAY ANOVA. After therapy the pain was considerably reduced or disappeared in each group, all

patients had considerably improved the area of movements in the wrist joint, but the therapeutic effects of LFPEMF (II group) are statistically more important (p<0,001) than the effects of classic physical procedure (I group) (p<0,05). These results show excellent therapeutic possibilities of LFPEMF in comparison with classic physical procedure (IFC). According to the results of this study it can be concluded that using LFPEMF represents a very efficient therapeutic procedure in treatment of patients with Colles fracture.

P069

INTERMITTENT NEGATIVE PRESSURE TREATMENTS (GREENSAC®) FOR JOINT MOBILITY IMPROVEMENTS:OUR EXPERIENCE

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INTRODUCTION AND AIM

One of the most demanding complications in diabetic patients is caused by microcirculation damage. Improved microcirculation enables better metabolic control and consequently an improved function. In patients (pts) suffering from type 2 diabetes (T2D) over 15 years, using intermittent negative pressure treatments (Greensac®) to the lower limb, we achieved their microcirculation hallmarked with increase of local temperature, diminished swelling and less complaints.

METHODS

We encompassed 35 pts (8 men and 27 women) of average age of 56.2yrs and average of 16.5 years of T2D history. We measured lower limb joint mobility before and after 10 treatments with Greensac® (3 times a week for 30 minutes).

RESULTS

Pre-treatment vs. post-treatment values: Leg – flexion Right leg: 180º/60º vs. 180º/50º. Left leg: 180º/60º vs. 180º/50º; Leg – extension: Right leg: 170º vs. 180º. Left leg: 165º vs. 180º; Foot – flexion: Right leg: 90º/80º vs. 90º/70º Left leg: 90º/75º vs. 90º/60º; Foot – extension: Right leg: 90º/110º vs. 90º/100º. Left leg: 90º/110º vs. 90º/120º; Foot – inversion: Right leg: 90º/60º vs. 90º/50º. Left leg: 90º/60º vs. 90º/60º. Measuring lower limb joint mobility before and after 10 treatments with Greensac® (3 times a week for 30 minutes), we found a significant difference in lower limb and foot joints' mobility, while no difference was shown for hip and thumb joints.

CONCLUSION

We conclude that one month of use of Greensac® (10 treatments) significantly improved lower limb joints' movements in T2D pts. Also, we assume the given treatment should be provided to other pts with diminished lower limb mobility caused by other diseases.

P070

DOSE RELATED EFFECTIVINESS OF LOW LEVEL LASER THERAPY IN PATIENTS WITH TEMPOROMANDIBULAR DISORDERS

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INTRODUCTION

Temporomandibular disorders (TMD) is communal therm which describes problems with masticatory muscles and temporomandibular joint. The main clinical phenomena is pain. The initial managment includes physical therapy. Several reports have documented the possitive effects of low level laser therapy (LLLT) in TMD,s with large range of applied treatment parameters.

AIMS

The aim of this study was to evaluate the clinical effectiviness of LLLT in relation with applied dose in patient with TMD.

METHODS

This clinical trial was perfomed in 32 patients, 24-56 years old, diagnosed with TMD of multiple causes. The patiens were divided by single blind controlled trial in two groups: group A (n= 16) which was treated with following parameters of LLLT: wavelenghth 904 nm, intensity 20mW/cm2, 60 sec per point, frequency 5000 pps, with energy dose 1,0 J/cm2 and accumulated dose of 50 J/cm2 and group B (n=16) which was treated with same parameters except energy dose which was 2,0 J/cm2 and accumulated dose of 100 J/cm2. Both groups were treated once daily in two consecutive weeks on 5 painfull sites. Parameters of clinical effectiviness were pain measured with visual analogue scale (VAS) and total mouth opening measured with milimetar ruler from the incisal of the upper to the incisal of the lower incisors. Parameters were recorded before and after therapies. Results were compared for each individual treatment and for different treatments. Statistical analyses were accomplished using the paired t-test. A p value of <0,05 was considered as statistically significant.

RESULTS

The mean values of VAS before and after therapy in group B were 85±6,5 and 43±4,5 (t=7,95; p<0,001) and in group A were 83±6.2 and 57±6,5 (t=3,24; p<0,001). The mean values of mouth opening in group B before and after therapy were 33,2±6,3 mm and 41±5,5 mm (t=8,45; p<0,001) and in group A before and after therapy were 34,2±6,7 to 37,6±8,5 (t=2,45; p<0,05). Higher statistically significance was recorded in group B.
Conclusions: Both applied doses are effective in improving mouth opening and reduction of pain intensity but better with higher dose of 2,0 J/cm2 and accumulated dose of 100 J/cm2.

P071

THORACIC OUTLET SYNDROME CAUSED BY CERVICAL RIBS – CASE REPORT

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Thoracic outlet syndrome (TOS) is a controversial topic in the literature. TOS involves compression, injury or irritation to the neurovascular structures at the root of the neck or the upper thoracic region, bounded by the anterior and middle scalenes; between the clavicle and first rib; or beneath the pectoralis minor muscle. The frequency is unknown because TOS is very often overlooked or misdiagnosed. Females are diagnosed more commonly with TOS than males. Age of onset is from 2nd to 8th decades. Symptoms are varied and may be neurogenic or vascular in origin. TOS most likely has multiple causes. Some authors have described cervical ribs associated with TOS predisposing the site to narrowing and compression. A cervical rib is a rare, congenital, bony abnormality that may give rise to vascular or nerve compression. This is a case report of a 23 years old female without pathological antecedents with history of cervical pain, numbness and tingling of the right arm that began in the childhood and got worse after the pregnancy (3 years ago) when she initiated lipothymies with the hyper abduction of the right arm. The X-ray identified a right cervical rib. She was submitted to surgical removal of the right cervical rib in 24 th May 2006 and was evaluated by PM&R in 26th May 2006. The rehabilitation program started at 7th June 2006 with functional improvement. Prognosis of TOS is generally good for the majority of the cases. Most patients obtain relief of paresthesias and numbness with a return of strength or activity tolerance

P072

THROMBOCYTOPENIA – ABSENT RADIUS SYNDROME CLINICAL CASE

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INTRODUTION

Thrombocytopenia – absent radius (TAR) syndrome is a rare association of thrombocytopenia and bilateral radial aplasia. The expression varies and includes abnormalities in skeletal, gastrointestinal, hematologic and cardiac systems.

CASE REPORT

The authors describe a case of a 12 years old girl, presenting the classical features of this rare syndrome.
Discussion: The authors show the role of Physical Medicine and Rehabilitation on the acquisition and development of functional activities, in a patient who become independent, despite serious hand malformations.

P073

CONGENITAL MUSCULAR TORTICOLLIS (CMT): RETROSPECTIVE STUDY OF 64 CASES

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INTRODUCTION

CMT is the third most common congenital musculoskeletal condition. Its etiology and management is still debatable. The success of conservative management of CMT has been well documented. If left untreated cervical function and facial cosmesis may be compromised.

OBJECTIVES

Define clinical patterns and characteristics of CMT. Search for clinical associations with other musculoskeletal conditions. Define types of conservative treatment and its results.

MATERIALS AND METHODS

The present study is a retrospective evaluation of CMT cases, from the Physical and Rehabilitation Medicine Department of Dona Estefania Paediatric Hospital, in Lisbon. Children diagnosed since 2005, during the first year of life were included. The data were collected from the clinical records, and a database was created. Other torticollis aetiologies were excluded.

RESULTS

Of the total 64 patients, 43 (67%) were of the postural clinical subgroup; 10 (16%) had tightness of the sternocleidomastoid muscle but no tumor; and 11 (17%) had a palpable tumor. 34% were diagnosed during the first month of life. Euthocic delivery was recorded in 20 (31%), vaginal vacuum extraction in 7 cases (11%), vaginal forceps in 4 (6%) and 33 (52%) were born by caesarean section. Nineteen cases (30%) were detected in primary care, 30 (47%) in hospital practice and 15 (23%) were sent from other sources. Plagiocephaly, facial asymmetry and hip dislocation were present in 25 (39%), 20 (31%) and 2 (3%) of patients, respectively. Only one patient (2%) had brachial plexus lesion and 4 (6%) had collar bone fracture. The majority of the patients (65%) were first born children. Of the 64 cases, 27 (42%) completed treatment, all with total recovery. Three patients abandoned treatment. The remaining 34 cases (53%) are still under treatment and 31 (91%) of them already show some degree of recovery.

CONCLUSION

Diagnosis is made early in most cases, and conservative treatment provided good results. Although CMT is a benign situation, exclusion of associated musculoskeletal conditions is essential.

P074

FIBRODYSPLASIA OSSIFICANS PROGRESSIVA (FOP) – A CASE REPORT

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BACKGROUND

FOP is a rare and disabling disease, characterized by benign heterotopic calcification which leads to mature bone formation in the musculature, ligaments, tendons, and joint capsules. Hallux Valgus deformity is another characteristic feature of this condition. The disease can be inherited in an autossomic dominant way (complete penetrance, variable expression) but most patients are considered to have new mutations.

AIMS

We present a clinical case of FOP with the purpose of making a brief review of the diagnosis and treatment of this clinical entity.

CASE REPORT

18 year-old caucasian woman, referred to consultation for bilateral hip swelling and pain. She had alopecia, bilateral deafness, enlargement of the hips with important limitation in ROM and deficiency in coordinate gait. No characteristic facies and no bone deformities confirmed by X-ray. CT-scan of the hips was performed and showed calcification of the soft tissues, sparring cortical bone. Lab studies showed no anomalies.

DISCUSSION AND CONCLUSIONS

There were clinical and radiological diagnostic criteria for FOP. We diagnosed FOP considering the clinical presentation in the absence of skeletal lesions. She was treated with NSAID´s for pain. For this disease the therapeutic measures are essentially preventive avoiding any invasive procedures of the soft tissues.

P075

BILATERAL REVERSED PROSTHESIS IN ACROMEGALIC ARTHROPATHY – CLINICAL CASE

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The pathogenesis of acromegalic arthropathy involves both excess growth hormone (which induce hypertrophy of cartilage and soft tissues) and secondary degenerative changes. Acromegalic arthropathy is generally non-inflammatory and, in later stages, frequently develops characteristics of osteoarthritis. Virtually all joints can be involved. Peripheral arthropathy is common in the large joints such as the shoulders and knees. Severe osteoarthritis with crepitus and, eventually, pain, limited range of motion and deformity occur. Rotator cuff tear is characterized by the permanent loss of the rotator cuff tendons and the normal surface of the shoulder joint. Individuals with irreparable rotator cuff tear, osteoarthritis and a functional deltoid muscle are good candidates for joint replacement surgery with a reversed prosthesis. Reverse shoulder arthroplasty was described by Grammont and Baulot in 1993. In this prosthesis the humerus is converted to a socket and the glenoid to a ball. The goal of shoulder arthroplasty with a reversed prosthesis is to restore limited function to the joint by providing stability and a fulcrum against which the deltoid muscle can help elevate the shoulder to a level where some basic shoulder functions can be performed. The authors describe a clinical case of a patient, female, 51-year-old, caucasian, with acromegalic arthropathy, irreparable rotator cuff tear and obesity. She had pain and severe functional impotence on both shoulders; she was unable to feed herself. In April 26th 2005, the patient was submitted to the right shoulder arthroplasty with a reversed prosthesis. Six months later, the same surgery was performed on the left shoulder. The rehabilitation program began early, during the hospitalization. The patient went through cinesitherapy and hydrotherapy with improvement of passive and active range of movement in both shoulders and became independent in activities of daily living although spending more time doing them: motor FIM – 87. The shoulder arthroplasty with a reversed prosthesis does not totally restore the function of the degenerated rotator cuff tendons, but a post-surgical rehabilitation program is helpful in increase strength, range of motion and function of the shoulder.

P076

CHRONIC TOPHACEOUS GOUT – CASE REPORT

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Gout is a common disorder of uric acid metabolism that can lead to recurrent episodes of joint inflammation, tissue deposition of uric acid crystals and joint destruction if left untreated. A definitive diagnosis can be made using joint aspiration and synovial fluid analysis. If treated early and properly and if patient compliance is good, the prognosis is excellent. However, if left untreated, chronic tophaceous gout can develop and lead to severe joint destruction, with functional impairment. We present a case of a 51 year old patient, with history of cervical injury in 1988 (arthrodesis C1-C2-C3) without neurological deficits, dyslipidemia, arterial hypertension, long standing hyperuricemia and episodes of acute gout attacks in the last 10 years. Due to tricompartimental gonarthosis of right knee submitted to total arthroplasty in 2003 (synovial fluid analysis identified urate crystals). Three years from now refers insidious installation of range of motion limitation of both tibio-tarsic (TT) joints, submitted to arthrodesis of right TT joint (due to irreducible pe equino) in 2004. Actually with irreductible pe equino and spontaneous

anquilosis of left TT. Refers mechanical polyartralgias in upper limbs (elbows with tophaceous deposits, wrist and fingers)as well as lower limbs (knees an TT) with range of motion limitation but functionally independent in all Activities of Daily Living, walking with 2 crutches. Medication was instituted to prevent acute flares and lower uric acid levels, with reduction of the episodes of acute crisis. A plan of hydrocinesiotherapy and gait training was initiated, with diminishing of pain and ameliorating walking capacity. This case illustrates the importance of early detection and treatment of gout, in order to prevent progression to chronic complications.

P077

ROTATOR CUFF TENDINOPATHY AS A COMPLICATION OF LYMPHEDEMA

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Lymphedema of the upper limb is a complication that frequently follows the management of breast cancer. Rotator cuff tendonitis is the most common upper-extremity tendonitis. Although patients with lymphedema frequently experience shoulder pain, rotator cuff tendonitis has seldom been documented in the literature as a complication of lymphedema. The authors present a clinical case of lymphedema following mastectomy, in which the patient presented bilateral rotator cuff degenerative pathology with tendonitis signs and functional impairment only in the affected limb. The authors review the literature and present a clinical report that highlights the possibility of a rotator cuff tendinopathy presenting as a complication of lymphedema.

P078

DEFORMITY OF THE LOWER LIMB IN NEUROFIBROMATOSIS VON RECKLINGHAUSEN: A CASE REPORT

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INTRODUCTION

Neurofibromatosis Type I (NF-1) is a progressive disease best known for its heterogeneity and variability. NF-1 is an autosomal dominant disease and it can manifest in many different ways in many different tissues. Its incidence is 1 per 3.000 births. Skeletal malformations, including scoliosis and bowing of the lower legs, are about 20 to 40%. Congenital pseudarthrosis of the tibia is present in approximately 1-2% to 13% of patients with NF-1.

CLINICAL CASE

We describe the case of a 4 years-old patient diagnosed with NF-1 who presented ocular and retroperitoneals neurofibromas. He presented a congenital bowing of the left tibia during the perinatal period, and referred to Rehabilitation Department for orthosis prescription (PTB orthosis). At 9 months-old he started walking and when he was 18 months-old had independent walking. At 3 years and 10 months old he suffered an incomplete fracture of left tibia without traumatic antecedent and therefore he did not walk alone. At 4 years and 5 months old, after fracture consolidation, he presented 30.º of varum and 70.º of antecurvatum deformity for which osteotomies were performed and Fassier-Duval nail was used. Nowadays, he walk with help. He has a painful knee and developed a 30.º flexum. He iniciated treatment in our department with physical therapy in order to recover complete mobility and obtain independency for gait.

DISCUSSION AND CONCLUSION

Congenital pseudartrhosis of the tibia in neurofibromatosis type I supposes an important orthopaedic problem. There is little information about pathogenia and prognosis of the congenital pseudarthrosis of tibia1 in NF1. It is considered that the prognosis is worse as soon as fracture and pseudarthrosis occurs. The appropriate handling in these children will allow to obtain an independent gait.

P079

IMPROVEMENT OF LOWER LIMB JOINT MOBILITY USING GREENSAC® IN A DIABETES PATIEN – CASE REPORT

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A female patient aged 62 years with a 19 years old history of type 2 diabetes (T2D) complained of calf pain (8/10) occurring at distances less than 150m. The patient also complained of lower limb joint discomfort and diminished range of movement. Measuring lower limb joint mobility before and after 10 treatments with Greensac® (3 times a week for 30 minutes), we found a significant difference in lower limb and foot joints' mobility (Table 1), while no difference was shown for hip and thumb joints. Right leg flexion pre-treatment was 180º/65º, left leg flexion was 180º/55º while post-treatment values were 180º/40º and 180º/50º, respectively. Pre-treatment leg extension was 160º for the right leg and 155º for the left while, while post-treatment it was 180º degrees for both legs. Pre-treatment flexion of the right foot was 90º/80º and 90º/65º for the left foot, while post-treatment it was 90º/70º and 90º/60º respectively. Pre-treatment right foot extension was 85º/110º and the left one's 90º/100º, while post-treatment values were 90º/110º and 90º/100º, respectively. Pre-treatment, right foot inversion was 90º/60º, left one's was 90º/55º, while post-treatment values were

90º/50º and 90º/60º, respectively. We conclude that use of Greensac® significantly improved lower limb joints' movements after already only 10 treatment sessions.

P080

IS BASDAI A USEFUL INDEX OF DISEASE ACTIVITY IN ANKYLOSING SPONDYLITIS?

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OBJECTIVES

The aim of this study was to assess the disease activity of patients with ankylosing spondylitis (AS) using an easy and reproducible index.

METHODS

40 patients with AS, according to the modified New York criteria, were randomly selected. 24 were male (60%) and 16 female (40%), mean age 39,3 iÀ 9,9 years. 88% had mixed disease. The authors included patients on treatment with NSAIDs alone or combined with corticosteroids or sulfasalazine. Clinical evaluation included assessment of disease activity, using a visual analogical scale (VAS), VAS spinal pain, BASDAI, BASMI, BASFI, tender joint and swelling joint count (68 joints). In the statistical analysis Spearman's correlation was used.

RESULTS

Mean BASDAI was 4,3 (iÀ2,2). 24 patients (60%) had a BASDAI il 4. BASDAI showed a good correlation with VAS activity disease (p<0,001), VAS spinal pain (p<0,001), BASFI (p=0,001), tender joint count (p<0,05) and swelling joint count (p=0,01).

CONCLUSIONS

According to BASDAI, active disease was present in 60% of patients, justifying a more aggressive treatment. BASDAI seems to be a reproducible and useful tool in monitoring disease activity.

P081

EVALUATION OF COGNITIVE IMPAIRMENT WITH MMSE AND PCT IN AGED HEALTHY, STROKE AND FRACTURED SUBJECTS

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INTRODUCTION

Cognitive impairment is a negative prognostic factor of functional outcome and survivorship and its evaluation is an important tool in order to obtain good results in rehabilitation. The gold standard method in cognitive evaluation is the Mini Mental State Examination even if it is not always simple to administer, especially in subjects with lower level of education.

The aim of our study is to compare MMSE with the Point Clock Test in healty aged subjects, in post stroke patients and in post-hip-fractured patients.

METHODS AND MATERIALS

We recruited 45 patients (19 M and 26 F), mean aged 75 years old (15 in good health, 15 post-stroke and 15 hip-fractured). All patients were underwent to the following evaluations: – MMSE, – Point Clock Test.

RESULTS

total healthy subjects post stroke patients hip-fractured patients MMSE 20,87 25,60 19,87 17,13 PCtest 7,18 7,80 4,73 1,93 The mean time of administration was 6 minutes for MMSE and 1 minutes and 25 seconds for Point Clock Test.

CONCLUSION

The Point Clock Test seems to be a reproducible, valid and simple test for evaluating the global cognitive status of different kind of patients. The time of administration is significantly lesser than MMSE. The PC test seems to be a valid alternative to MMSE particularly for patients with lower level of education

P082

NUM CHIN SYNDROME – THE SYNDROME THAT ALL MEDICAL DOCTORS AND DENTISTS SHOULD KNOW ABOUT!

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The authors describe a single case of Mental Neurophathy diagnosed in January 2006 in a 67 years old man. This rare syndrome usually reflects the presence of an abnormality in the mental or inferior alveolar nerve that, if not as a result of a dental cause, obliges to an aggressive diagnosis, since the most common cause is from an underlying neoplasm (manifestation of metastatic malignancy). Prognosis of NCS in patients with cancer is poor, and survival is usually measured in months. It manifests as sensory symptoms, represented primarily by numbness of half of the lower lip and chin. The authors would like to provide information on numb chin syndrome, making a literature review, and describe this case, in which the final diagnosis was a Schwannoma.

P083

FEMORAL NERVE INJURY FOLLOWING TOTAL HIP ARTHROPLASTY

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INTRODUCTION

Femoral nerve paresis is a strange complication of total hip prothesis. Its symptoms are knee and leg weakness, difficulty to go up and down stairs, and sensibility disorders. The diagnosis is confirmed with the EMG. We are going to talk about two clinical cases.

CLINICAL CASES

1- Woman 75 years-old that begins with paresthesia in right thigh and quadriceps paresis after total hip replacement. The EMG shows signs of acute partial denervation in the femoral nerve territory with discreet signs of regeneration. 2- Women 70 years-old who presents lack of movement in psoas and quadriceps as a result of hip surgery. The EMG shows denervation in right quadriceps and axonal and demyelinizant femoral neuropathy. In both cases it's prescribed electroestimulation, kinesiotherapy and walking reeducation. Nowadays the first one walks with two crutches and will continue with the rehabilitation until its stabilization, and the second one walks without help but she has difficulty to raise stairs.

CONCLUSION

The objective of the rehabilitation treatment is to maintain the muscle trophism while the nerve regenerates, to improve mobility and reeducate on walking.

P084

THE EFFECTS OF APPLYING LMWH (CLEXAN) ON MORTALITY OF ISCHEMIC STROKE-EPIDEMIOLOGIC STUDY

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The aim of the study – to establish the effects of NMWH on mortality from ischemic stroke.

THE MATERIAL AND METHOD

The retrospective study included all the patients of St. Sava Hospital during the 01.01.2004-31.12.2005.The mortality and an early complications was compared for the period 2004. when UFH was still applied (in practice), and the period of 2005., when at the end of the 2004. LMWH (Clexan) was introduced regularly.

THE RESULTS

During 2004., 4180 patients were admitted at the intensive care, with the diagnosis I63.0-I63.4. The mortality was 14.569%. In 2005., 5194 patients were treated with the mortality of 10.49%. There is significantly lower degree of mortality in the course of 2005 than in 2004. Also, there was smaller percent of early complications.

DISCUSSION

the results show that application of LMWH significantly reduces mortality in the case of icshemic stroke as well as the number of early complications.

P085

EFFICACY OF BOTULINUM TOXIN-A INJECTIONS ON THE TOLERANCE OF ORTHOSIS DURING THE GAIT IN C.V.A. HEMIPLEGIC PATIENTS

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BACKGROUND

Botulinum Toxic A (BTX-A) is widely used for the reduction of spasticity in hemiplegic patients secondary to cerebrovascular accident (C.V.A.), since its effectiveness has been established from the findings of several hundred studies.

AIM

To determine whether the reduction of spasticity, by BTX-A injection, improves the function of the hemiplegic patient and whether his functional rehabilitation is being positively affected.

METHODS

Ten hemiplegics – secondary to cerebrovascular accident (ten males age range between 17-65) were found eligible to participate in the present study. They were experiencing severe lower limb spasticity, were walking with the aid of a metal walker, and were wearing a Klezak type ankle foot orthosis (AFO). The measurements used, were the Modified Asworth scale for patients' hypertonia and the Functional Independent Measure (F.I.M.). One BTX-A injection performed to gastrocnemins, posterior tibialis, and sollens muscles. (Patients were allocated in two groups according to their age, above or under 50 years old). Evaluations were conducted prior and three months after the injection.

RESULTS

There were statistically significant differences in the improvement of spasticity and the patients' function.

P086

EFFECT OF BOTULINUM TX-A ON CORTICAL SOMATOSENSORY EVOKED POTENTIALS IN SPASTIC PATIENTS WITH STROKE

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INTRODUCTION AND AIM

It is estimated that thirdy-nine percent of the patients develop spasticity within the first year of having stroke. The purpose of this study is to assess the effect of botulinum toxin-A (BTx-A) (Dysprot®) on cortical somatosensory evoked potentials (SEPs) in patients with stroke.

METHODS

Twelve spastic patients with dynamic equinovarus foot were included in this study. 400-500 IU BTx-A was injec-

ted into their spastic plantar flexors. Muscle tone and the motor functional level of patients were evaluated before injection and at the second week of the injection by using Ashworth Scale, Brunnstrom Motor Assessment Scale (BMAS) and Barthel Scale, respectively. In addition, 10 m walking time was measured before and after the injection. SEPs were obtained by posterior tibial nerve stimulation, and cortical surface electrodes were used for recordings. The electrode replacement was performed according to the 10/20 International systems. Active and reference electrodes were located at CzĐ and Fz points, respectively. The tibial nerve was excited at the ankle in the affected side. The stimulation level was painless and powerful enough to switch the related muscles.

RESULTS

The mean age of the patients was 62.6±9.3 years. After injection, improvement was statistically significant for the Ashworth Scale scores, 10 m walking time and BMAS scores ($p<0.05$). We found that the cortical SEPs' latencies were noticeably decreased after BTx-A at the end of the second week ($p<0.05$). There was a negative correlation between SEPs' latencies and Brunnstrom scores in both before and after injections ($r=-0.65$, $p=0.03$; $r=-0.70$, $p=0.02$, respectively).
Conclusions: We have concluded that the improvement of spasticity via BTx-A injections could decrease cortical SEPs' latencies. We have also observed that the bad motor level was correlated with long SEPs' latencies in our study.

P087

FUNCTIONAL EVOLUTION IN STROKE PATIENT WITH LEFT VENTRICULAR DYSFUNCTION

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INTODUCTION

Stroke patients have low resistance to physical exercise, with highest energetic costs and deficient functional evolution; these patients have difficulties adapting to a stressful physical exercise. If they have a cardiac disease, this problem is an obstacle in initiating rehabilitation, being a limitative factor to effort tolerance. Although the concomitance of cardiac disease and cerebrovascular disease in the same patient is encountered relatively frequent, there are few studies trying to establish guidelines of functional assessment and clinical rehabilitation.

AIM

to determine the impact of left ventricular dysfunction on functional prognosis of stroke patients enrolled in rehabilitation programs (stage I).

MATERIAL AND METHOD

in this study were enrolled 201 patients with sequels after recent stroke (less than 3 month); on echocardiography basis, patients were divided in to groups, one (125 patients) with normal left ventricular ejection fraction ant the other group (78 patients) with an ejection fraction less than 50%. Clinical assessment was done at admission, during hospitalization and at release based on functional measurements. Their evolution was analyzed in strict correlation with the presence of left ventricular dysfunction.

RESULTS

An abnormal left ventricular ejection fraction was responsible for the delay in starting a rehabilitation program and for therapy compliance and functional evolution on short term (1 month); at six month functional assesment was about the same.

CONCLUSION

Functional prognosis of stroke patients on short and medium term is not influnced by a low left ventricular ejection fraction (between 30% and 50%).

P088

CONSTRAINT INDUCED MOVEMENT TECHNIQUE IN REHABILITATION PROGRAM OF STROKE PATIENTS

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INTRODUCTION

The disabilities after stroke have strong familial, medical, social and economic impact; the rehabilitation team need more efficient methods to work with. Improving quality of patient's lives is a basic principle of rehabilitation programs

AIM

Quantification of constraint induced movement (CIM) technique efficiency in functional rehabilitation of paralyzed hand in stroke patients admitted in rehabilitation programs (stage II)

MATERIAL AND METHODS

This clinical, prospective randomized and controlled study included 50 stroke patients enrolled in a rehabilitation program (stage II). Stroke patients were divided in two groups; the group A (25 patients), in addition to a standard rehabilitation therapy, had their affected hand restricted by the use of a glove without fingers for four hours every day. Demographically, neurological and functional data were recorded at the beginning of the study, at two weeks and six month, and the data were statistical analyzed.

RESULTS AND DISCUSSIONS

The groups were relatively homogenous regarding age, sex, stroke type, spasticity, and disability in the beginning of the study. At the end of the study the difference

of disability scores was in favor of group A. After six month, the difference, although statistical insignificant, was still in favor of group A for FIM and Brunnstrom, and even for quality of life measure. The patients icluded in group A continued CIM therapy after hospital release.

CONCLUSIONS

1. Functional recovery of paralyzed hand in patients with stroke is faster and better in patients from group A, patients with CIM therapy; results were recorded on a period of six month 2. The condition for CIM therapy in the presence of a good cognitive score

P089

FUNCTIONAL PROGNOSIS IN DIABETICS POST STROKE SURVIVORS

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INTRODUCTION

DZ is often present in patients with cerebrovascular disease; this medical condition is a risk factor for stroke, but for recidiva and for after stroke mortality too. Some studies clam that DZ is also a negative predictor for functional prognosis in post stroke survivors.

OBJECTIVE

To determine the influence of diabetes mellitus on the functional evolution in post stroke survivors Material and method: We compared the medium and long term functional evolution of two groups of patients with post stroke sequels, accepted in medical rehabilitation program: group A with 87 diabetic patients and group B with 53 non-diabetics. We measured demographic, medical and functional parameters (FIM, Barthel index, EuroQOL) at the admittance, at six months and after one year. All the patients were included in standard rehabilitation program; diabetes mellitus imposed some precautions in group A.

RESULTS

FIM and Barthel index had signifiquant lower values at six and twelve months at the patients in group A; they had lower initial cognitive and global FIM scores, too. ¾ of all the patients also had dislipidemia, but functional prognosis wasn't influenced by that for group A, neither for group B. By the other hand, DZ was strongly associated with pain, shoulder-hand syndrome, urinary infection, skin wounds and, consequently, with poorer life quality.

CONCLUSION

Diabetes mellitus had a negative influence on both medium and long term functional evolution in post stroke patients included in rehabilitation programs; this kind of evolution could have had multiple causes.

P090

INTRA-ARTERIAL BASILAR THROMBOLYSIS AND VERTEBRAL ARTERY STENT IN VERTEBROBASILAR STROKE-CASE REPORT

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Patients with acute basilar artery occlusion have a mortality rate greater than 85% and most survivors have severe persisting disability. Advances in thrombolysis and endovascular therapy may increase the survival rate and limit the disability rate. We present a case of a 70 years old male, with history of dislipidemia, hypertension and atrial fibrillation that was admitted to our hospital in November of 2005 due to rapid onset of vertigo and vomiting followed by decreased level of consciousness, internuclear ophthalmoplegia and right hemiparesis. Cerebral angiography was performed showing basilar artery stroke, and he was treated with basilar intra-arterial thrombolysis and a right vertebral artery stent was placed. He was transferred from Neurology to our PRM Department, where he was submitted to a rehabilitation program, with functional improvement, traduced by Modified Barthel Index (32 at admission and 55 at discharge) and in Functional Independence Measure (62 at admission and 78 at discharge). This case illustrates the importance, in selected cases, of this therapeutic option, indicating that good functional outcome could be expected in patients treated with intra-arterial thrombolysis. More randomized controlled trials are needed to establish the efficacy of this therapeutic modality.

P091

PURE SENSORY STROKE AND RELATED DEFICIT OF MOTOR CONTROL IN A YOUNG ADULT CONSUMER OF ILLICIT DRUGS

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Pure sensory stroke (PSS) is a well defined clinical entity in which hemisensory symptoms predominate without other major neurological signs. Because of their small sizes, the lesions producing PSS are often difficult to identify. Although the computer tomography (CT-scan) may be helpful it is often unable to confirm the lesion, but with magnetic ressonance imaging (MRI) small strokes causing PSS are more easily identified. Somatosensory deficit is among the most frequent outcomes of cerebral lesions and to date, despite its clinical relevance, little attention has been given to the rehabilitation of somatosensory function. Nonetheless, several studies have shown that rehabilitation treatment spe-

cifically aimed at restoring sensory deficit and related disabilities can lead to significant functional improvements. Anatomic and physiological studies show that the neural underpinnings of normal motor performance consist of both sensory and motor systems, thus is no surprise that patients with somatosensory deficit present with motor control deficits that bring altered grasping and manipulation of objects, as well as severe disabilities of daily hand activities. The type and degree of sensory loss varies and is usually incomplete. It can occur impairment of pain, temperature and touch detection, and more commonly, marked deficits in the interpretation of sensory experiences such as passive movement recognition, texture discrimination and stereognosis. Stroke in the young adult is an infrequent clinical entity and about 33% of cases are associated with consumption of illicit drugs. Several case reports have linked the abuse of the popular recreational party drug 3,4-methylenedioxymethamphetamine (MDMA or "ecstasy") to the occurrence of cerebrovascular accidents, probably induced by alteration in the serotoninergic system. The authors describe a clinical case of a patient 35 years old with pure sensory ischemic stroke with right hemisensory symptoms and deficit of motor control, without any motor paresis, and the role of rehabilitation of somatosensory function. At the time of the stroke he was a consumer of cannabis and sporadic abuser of MDMA. The lesion had no representation in the initial CT-scan, but a subsequent MRI showed a small left posterior parietal lesion.

P092

DYSTONIA AFTER STROKE – CASE REPORT

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Dystonia refers to a syndrome of involuntary sustained or spasmodic muscle contractions involving co-contraction of both agonist and antagonist muscles. The movements can be slow and often painful and occur in a repetitive and patterned manner, frequently leading to twisting and other abnormal movements and postures. Dystonias can be classified according to the age of onset, aetiology and anatomic distribution. Dystonia has been described with deep infarcts in the contralateral subthalamic and putaminal-pallidal regions and the posterolateral thalamus but this appears to be rare compared to other specific symptons and signs. This is a case report of a 54 years old caucasian male with a past medical history of arterial hypertension who suffered several lacunar strokes and developed hemidystonia on the left side. The CT scan confirmed the diagnose (hypodensities in the right semi-oval nucleus, right talamus and posterior arm of the internal capsule corresponding lacunar strokes). He began the rehabilitation program with functional improvement. He also started pharmacological treatment with trihexyphenidyl 2 mg tid. We present this case to highlight that dystonia (and other involuntary movement disorders), although uncommon, can be present after stroke, mainly when the lesions affect the basal ganglia.

P093

MOBILITY STATUS AFTER STROKE REHABILITATION

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INTRODUCTION

Mobility of a patient is always effected after stroke. Improving the poor mobility status after stroke is one of the most important aim of the rehabilitation team. In this prospective study,we evaluated the changes in mobility status of inpatient stroke patients after rehabilitation programme.

MATERIAL AND METHODS

One hundred and fifty stroke patients,who were under inpatient rehabilitation care of a rehabilitation clinic between 2003-2005,were recruited in this study. The demografic data,time since stroke,eatiolgy of stroke,risk factors,length of hospital stay were evaluated. The mobility status of patients were evaluated by Rivermead Mobility Index (RMI) on admission day and discharge day respectively. The correlation between mobility and age,length of stay,time since stroke were evaluated.

RESULTS

Eightysix of the patients were women and 64 were men with a mean age of 62,36 +_ 11,72 years.The RMI scores at admission and discharge were"4.45+_3.54 and 7.06 +_3.71 respectively and this was statistically significant (p <0.005) There was no correlation between the age of patients and RMI.

CONCLUSION

Mobility is probably the single ability that patients consider most important but the degree of mobility depends on what movements are possible.These cruical points make it necessary to evaluate mobility with a specific and validated rating scale with which to assess the abilities of patients in various common movements.

P094

KINEMATIC ANALYSIS OF HYOID AND EPIGLOTTIC MOVEMENT DURING SWALLOWING IN STROKES

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INTRODUCTION

Although videofluoroscopic swallowing study (VFSS) is widely used to evaluate swallowing function, it is limited to identify the gross findings of aspiration, transit time, and pharyngeal residue.

AIMS

The purpose of the study is to investigate kinematically the movement of hyoid bone and epiglottis, known as an important protective mechanism in stroke patients as comparing to the normal persons.

METHODS

A total of 63 subjects (30 sroke patients and 33 healthy subjects) were enrolled in the study. After each subject was undertaken VFSS, the videotaped images were captured and processed digitally using video-based motion analysis system. Latencies for movement of hyoid and epiglottis were defined as the time consumed until the moments of movement initiation after the head of fluid bolus passed the mandible angle. Durations for movement of hyoid and epiglottis were measured from onset of their movement until return of original position, and hyoid displacement distance and epiglottic folding angle were also measured.

RESULTS

In stroke patients compared with healthy subjects, the maximum and terminal intervals of hyoid elevation were significantly delayed. And total duration of movement was increased in hyoid elevation, but maintained in epiglottic folding. The hyoid bone-food bolus-epiglottis coordinated time sequence was significantly delayed in stroke patients. The maximal amplitude of hyoid bone was increased but the maximal folding angle of epiglottis was decreased in stroke patients. And the severity of dysphagia was related with hyoid bone-food bolus-epiglottis coordinated time sequence and maximal movement of hyoid elevation. ($p<0.01$)

CONCLUSION

This kinematic analysis suggests that the hyoid bone-food bolus-epiglottic coordination movement might play an important role in stroke patients. Further study will be necessary for identifying the pathophysiologic mechanism of dysphagia.

P095

BIOMECHANICAL ASPECTS IN REHABILITATION OF PATIENTS WITH HEMIPARESIS

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INTRODUCTION

The authors investigated by means of isometric measurements a group of spastic hemiparetic patients, with the aim of showing the recovery by functional markers of motor patterns. To respond to this challenge of isometric approach, an easy to use, 48 channel force-torque measuring instrument was developed in the scope of the Alladin-project of the 6th Framework Programme of the European Commission. It samples data about the performance of functional activities of daily living in stroke patients.

MATERIALS AND METHODS

Modern sensors on the Alladin instrument measure forces and torques exerted by the patient during six different activities of daily living (drinking, turning a key, lifting a bag, taking a spoon, reaching for a bottle, moving a bottle from one side to another). Measured data are also graphically represented.

RESULTS

The measurements of two individual patients were sampled over a 5 week period. The patterns of the graphs give useful results for the comparison of functional recovery during the process of rehabilitation. The patients were also tested from clinical aspects using the Fugl-Meyer (modified by Lindmark) and the Motor-Assessment Scales. Authors represent a patient with outstanding recovery and another patient with minor recovery.

CONCLUSION

These graphs detected by the isometric measurements on one hand show the development of different levels of functional recovery, and on the other hand can help the physiotherapist make the correct choice of training techniques, selecting those best adapted to functional re-education. Web: www.alladin-ehealth.org Acknowledgements: This work is sponsored by the European Commission's 6th Framework Programme (IST-507424). The project partners are: Arteveldehogeschool (B), Language and Computing NV (B), Budapest University of Technology and Economics (HU), Faculty of Electrical Engineering, University of Ljubljana (SI), Zenon SA, Robotics and Informatics (EL), Multitel ASBL (B), Trinity College Dublin (IRL), National Institute for Medical Rehabilitation (HU), Scuola Superiore Sant'Anna (I), Universita Campus Bio-Medico (I).

P096

ICTUS AND DISABILITY

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INTRODUCTION AND OBJETIVE

Rehabilitation acute stroke treatment reduces mortality, functional deficits, and the need of institutionalization after stroke.

The aim of this study is to test the hypothesis that a specific program rehabilitation of stroke patients in the acute phase is beneficial in reducing death and

dependency and increasing health-related quality of life.

MATERIAL AND METHODS

This is a retrospective study of 30 patients having cerebral infarction, initially treated in the Neurologic unit at the Ramon y Cajal Hospital and follow a specific Rehabilitation program. The time of follow-up was 12 months. Stroke severity,comorbidity, and demographic information was recorded. Among survivors, handicap was assessed with the Barthel index. Disability, physical impairment, were documented.

RESULTS

There were 30 cases of first-ever stroke treated with specific rehabilitation, with a first phase of home rehabilitation and follow at the rehabilitation unit in Ramón y Cajal Hospital., institutionalized at the end of treatment was 2%, disability with help was 4%, and independent 94%. Disability defined by a Barthel Index score in activities of daily living was 30%. Patients with a BI score of,50 before rehabilitation had significantly better outcome in the program at home rehabilitation.

CONCLUSIONS

Acute rehabilitation of stroke patients with a specif rehabilitation program improves outcome and reduces disability. Home rehabilitation allows for great flexibility so that patients can tailor their program of rehabilitation and follow individual schedules. These arrangements are often best suited for people who lack transportation or require treatment by only one type of rehabilitation therapist.

P097

MOVEMENT IMAGERY IN PATIENTS WITH A SUB-ACUTE STROKE: MEASURING VIVIDNESS OF MOVEMENT IMAGERY

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INTRODUCTION

In sports movement imagery (MI) is used to enhance physical performance (1). In chronic stroke patients the effect of MI on performance has been investigated (4). By using the Vividness of Movement Imagery Questionnaire (VMIQ) (3) the liveliness of MI, either from one's own perspective (1st) or from a third person's view (3rd) may be assessed (2, 3). The score varies between 24 (excellent imagination) and 120 (no imagination).
Aim of the study was: assess whether sub-acute stroke patients who may benefit from MI-training can be identified, using the VMIQ.

METHODS

In this cross-sectional study 18 stroke patients from 2 Dutch hospitals participated. Inclusion criteria: 1) first, unilateral, non-haemorrhagic stroke, 2) no severe visual of phatic impairments, 3) MMSE>22. Patient characteristics, demographic and VMIQ data were collected. Statistical analysis included (paired) T-tests and linear regression analysis.

RESULTS

In this study 29 patients were eligible to participate. Eighteen stroke patients, mean age of 65.3(sd:13.5) participated. Average post-stroke time was 21.6 days(sd: 12.0). Lesion location: occipital(n=2), parietal(n=5), basal ganglia(n=3), cerebellar(n=2), other(n=6) Patients with a parietal or a basal ganglia lesion had a lower score on the VMIQ-3rd (mean: 25.2, sd: 2.0) than patients with a lesion in other locations ($p<0.02$). For the whole group, average scores for the VMIQ-1st and VMIQ-3rd differed significantly, amounting to 37.9(sd: 14.1) and 31.6(sd: 9.9) respectively ($p<0.02$).

CONCLUSION

Patients with a sub-acute stroke seem to be able to perform MI, especially from a 3rd person's view. Subpopulations of sub-acute stroke patients who may benefit more from MI-training may be identified using the Dutch version of the VMIQ. In contrast to reports in Anglo-Saxon literature, age does not seem to have an effect on the MI-ability. More insight into the relation between VMIQ scores and specific brain lesion locations necessitates a larger research population.

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P098

HOME COUNSELLING IN HEMIPLEGIC PATIENTS

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INTRODUCTION

We describe our PMR inpatient Service procedures in Hemiplegic patients, before discharging from the Hospital.

AIMS

Acting as a multidisciplinary team we focus the rehabilitation in the patient and his family support. In order to continue the rehabilitation program and, before discharge from the hospital, we make a "family training session" regarding the procedures in transfers, bedding,

mobility and bathing. We have also develloped some visual supporting information in an handbook with additional "home patient exercices". The "home visit" is another procedure of our multidisciolinary action, in order to evaluate and resolve the accessibility conditions and activate the social and community framework.

METHODS

Not applicable

RESULTS

Participation of all professionals in the rehabilitation program, and patient´s satisfaction in our multidisciplinary action.

CONCLUSION

The success of the rehabilitation program, is based in the skills of the patient, family support and also community framework. As a Rehabilitation team, we try to develop this aims, envolving all the professionals of our Service.

P099

BASIC ASSESSMENT OF STROKE PATIENTS IN ITALY

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INTRODUCTION

The heterogeneity of results available in the literature regarding Post Stroke Rehabilitation have prevented the complete generalisation and application of the data. So, in the last year the Italian Society of Physical Medicine and Rehabilitation (SIMFER) promoted a specific bedside protocol of evaluation (Minimum Stroke Evaluation Protocol) of stroke survivors. SIMFER has recently cooperated with the Italian Health Ministry and other Scientific Societies for devising guidelines for Stroke care.

AIMS

to obtain a minimum data set on characteristics of patients who underwent to rehabilitation in Italy.

METHODS

Protocol includes three different sections for data collection: the first section for functional evaluation in acute phase (patients admitted to Stroke Unit or Neurological/General Medical wards), the second section for functional evaluation for patients admitted to hospital rehabilitation and third one for evaluation of patients in outpatient rehabilitation centre (ambulatory, community-based, etc.). Protocol includes for each section: a historic section; an evaluation of impairment, limitation of activity, restriction of participation and quality of life; a registration of comorbidities; and list of treatments performed. The data will be collected in a unique National server, to enrol a large case series. The possibility of participating to the data collection does not imply fees and every centre and colleagues can participate.

RESULTS

At present, the protocol is used by 43 Italian rehabilitation centres. The first data analyses is scheduled for September 2007 Discussion This protocol will enable the standardization of therapeutic interventions throughout the Country and will be a substantive base for future research.

P100

DEVIC`S DISEASE – CASE STUDY

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Devic´s disease or Neuromyelitis optica is a demielinizating disorder characterized by optic neuritis and transverse myelopathy without clinical or imaging signs of brain involvement or oligoclonal bands in the cerebrospinal fluid (CSF). If it is a variant of Multiple Sclerosis or a distinct neurological entity, remains a controversial issue. Pathophysiology remains unknown but it seems to exist a strong association with autoimmune disorders and tumors. Presentation may be monophasic or relapsing, being this one associated to a worse prognosis. The authors describe a case of a 51 years old female, with Myasthenia Gravis since 1982 and timectomy in 1994. Between 1996 and 2002 she had 2 episodes of neurological deficits (left hemiparesis and spastic paraparesia), with parcial recovery. By 2002 it was diagnosed an optic neuritis that evolved over two years to right amaurosis. In January of 2006 there was a worsening of the paraparesia and she became unable to walk. She was admitted at the Neurological Unit of our hospital. Brain and spinal cord MRI revealed envolvment of the spinal cord between C2-C4 and D7-D10. She was diagnosed having Devic´s disease. She was transferred to our PRM Department with spastic paraplegia ASIA B with sensitive neurological level D5, continuous bladder cathetherization, poor trunk control and totally dependent for transfers. After a bladder function evaluation she started voiding training and became able to do voluntary voiding. After a rehabilitation program there was a small improvement in motor and sensory deficits and a better posture and equilibrium in the sitting position was achieved, but with little functional improvement. During the stay in our department she was diagnosed with a Folicular

Adenoma. She was transferred to another department and submitted to a thyroidectomy. Three weeks later she suffered a new relapse. Her sensitive level became D4 and lost voiding sensation. After a new urodynamic study she started doing intermittent catetherization. This case illustrates a relapsing form of Devic`s disease, with its typical clinical evolution.

P101

INFLUENCE OF BALANCE DISORDERS ON GAIT PARAMETERS IN MULTIPLE SCLEROSIS PATIENTS

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INTRODUCTION

Physical exercise is a component of multiple sclerosis therapy. The effects are beneficial for patients regarding disabilities and neurological deficits.

AIMS

To determine the balance disorders incidence in patients with multiple sclerosis, tested on balance platform. – to determine the relation between balance parameters and gait parameters and balance improvement in multiple sclerosis patients enrolled in rehabilitation programs.

MATERIAL AND METHOD

This is a prospective, controlled, clinical and statistical study of 35 patients known with multiple sclerosis for less than ten years, medium age 40+- 9 years; all patients were in clinical remission. The group was homogenous regarding age, sex distribution and spasticity level. We recorded demographic parameters, neurological deficit parameters (muscular strength, balance parameters, spasticity), secondary deficit parameters (joint mobility) and functional deficit parameters (Kurtzke, FIM index, and Cooper test). The parameters were determined at the beginning of the study and after 3 weeks.

RESULTS AND DISCUSSIONS

Patients were divided in two groups on the basis of balance measurements on computerized platform; group A (20 patients) included patients with balance problems. They followed a standard program; in addition, they had a special training with visual biofeedback for balance and stability. The improvement was significant greater for group B (15 patients). Group A presented an improvement of balance parameters at the end of the study.

CONCLUSIONS

Balance problems incidence in patients with multiple sclerosis (about 70%) has a definite impact on gait and rehabilitation results. Balance parameters are correlated with short-term functional evolution.

P102

SPINAL MUSCULAR ATROPHY: A CASE REPORT

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INTRODUCTION

Spinal Muscular Atrophy (SMA) is a genetic autosomal recessive, motor neuron disease caused by progressive degeneration of motor neurons in the anterior horn of spinal cord. The incidence estimated is 1/10.000 live births. It's one of the most common genetic causes of death and disability in childhood. Clinical main characteristics are hypotonia, limb weakness worse proximally and absent muscle stretch reflexes. Respiratory, bulbar and paravertebral muscles are characteristically affected. SMA is classified into on of three types, based on age at onset: type I (infantile SMA or Werdnig-Hoffmann disease), type II (intermediated SMA) and type III (juvenile SMA or Kugelberg-Welander disease). Some consider a type IV (adult-onset SMA). Diagnostic tests: molecular genetic analysis, electromyography (EMG) and muscle biopsy. The management of these patients depends of clinical features. The principal prognostic factors are scoliosis and respiratory failure.

OBJETIVE

Report a clinical case of a patient with SMA.

CASE REPORT

Female child with 10 years old and 7 months, remitted to our Rehabilitation Department for vertebral deformity evaluation. SMA diagnosed at the age of 6 months. Antecedents of repeated respiratory infections. No relevant family history. Motor development retraces. On examination presents: tong fasciculation, no cephalic nor trunk control, articular limitation of the elbows and hips, genus and feet valgus, limb weakness, hypotonia, absent muscle stretch reflexes, 30 mm thoracic gibbus. She has already used a trunk orthosis (not specified) with bad tolerance. Locomotion with wheelchair. Radiographic exams (decubit) show a 39.º right thoraco-lumbar scoliosis and bilateral hip dislocation. Surgical correction of scoliosis is being considered.

CONCLUSIONS

Scoliosis and respiratory failure are the main problems in SMA. Preventing respiratory infections and scoliosis progression is vital. Scoliosis treatment is controversial. Some authors recommend trunk orthosis in early phases (delay scoliosis progression and helps trunk control) others don't (restrictive effect). Most authors recommend surgical correction, for progressive scoliosis, after the age of 10 years old and above 35.º. It improves quality of life, respiratory function and esthetics.

P103

VOIDING DISFUNCTION IN PATIENTS WITH TRAUMATIC THORACOLUMBAR VERTEBRA JUNCTION LESIONS

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INTRODUCTION

The type of vesico-urethral dysfunction depends essentially on the site of the cord lesion and on its extension in the thoracolombar junction injuries. There is no cohorence between the clinical findings and urodynamic results.

AIM

To find the association between urodynamic findings and urination characteristics of patients with thoracolombar junction injury. We analysing the variability of the type of neurogenic voiding dysfunction, because it may be difficult to predict urodynamic dysfunction merely on the basis of the vertebral body involved.
Material and method: Between the years 2000 and 2005, 26 patients with spinal cord injury in thoracolumbar junction were evaluated. Neurological examination, ASIA motor scores, bladder function with urodynamics were determined.

RESULTS

The mean age of the patients was 35.34±12.52. The mean SCI time was 7.12 months and the mean age of injury occurred was 34.98±12.88. 19 of the patients were ASIA A. 7.69% of patients were spontaneously urinating, 61,5% were doing clean intermittant catheterization. 42,3% of the patients had detrusor areflexia, 34,6% detrusor overactivity, 23% detrusor sphincter dyssynergia 3,8% sphincter insufficiency, 11,5% hypocompliance.

CONCLUSION

Bladder findings can be variable in the thoracolombar junction lesions and it is required to evaluate the urodynamic findings and clinical findings together.

P104

BONE MINERAL DENSITY AND BONE TURN-OVER MARKERS IN SPINAL CORD-INJURED PATIENTS

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AIM

To determine bone mineral density (BMD) and bone turn over markers in patients with spinal cord injured patients (SCI) and to investigate the relation of BMD with clinical parameters, neurological level, Functional Impairment Measurment (FIM) scores, and activity level.

SUBJECTS AND METHODS

43 patients (26 Male) with spinal cord injury and 29 healthy subjects (17 male) were included in the study. clinical parameters, neurological level, Functional Impairment Measurment (FIM) scores, and activity level were recorded. Patients were classified according to the ASIA. Bone mineral density and Z scores were measured at lumbar spine, femur neck and distal radius using DEXA. Serum and urinary bone turn over markers were also measured.

RESULTS

The mean age of male and female patients were 38± 16.2 and 33.3±10.0 years. Time since injury was 14.9±28.4 months in females and 16.2±25.6 in males. Forty-one percent of females and 46% of males had complete lesion. All female patients were paraplegic where seventeen were paraplegic and nine tetraplegic in males. Mean serum vit D level was lower (p= 0.031) and mean urine calcium level was higher (p= 0.001) in female patients than those of the female controls. Serum phosphorus and alkaline phosphatase levels were higher (p=0.0001, p=0.017 respectively) and serum calcium (p=0.006), serum alkaline phosphatase (p=0.017), and serum parathormone level were lower in male patients (p= 0.0001) than those of the male controls. There was a significant difference in the mean distal radius Z score (p=0.021) between male patients and controls. Femur neck bone mineral density was decreased in male patients but was not statistically significant. There were no correlations between BMD and complete lesion, FIM scores and ac. There was a significant negative correlation between duration of complete immobilization and femur BMD in both female and male patients.

CONCLUSION

In this study, there was a significant difference in distal radius BMD values between male patients and control group only, but there was an indication of increased bone resorption. These results suggest that SCI patients should followed and evaluated in long term for the increased risk of of osteoporosis.

P105

THE FREQVENCY OF BACTERIURIA AND URINARY TRACT INFECTION IN 70 SPINAL CORD INJURED PATIENTS

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INTRODUCTION

Injury to the spinal cord can lead to dysfunction of the urinary system, which in turn leads to an increased risk for the development of conditions such as urinary tract infection (UTI) and stones, vesicoureteral reflux, bladder diverticula, increased urinary residue, urinary obstruction and renal failure.

METHODS

this study was conducted on 70 patients, with spinal cord injury. Complete laboratory tests, including urine culture and antibiogram were performed for all patients.

RESULTS

Out of the 70 patients in our study, 48 (68,6%) were found to have UTI. Escherichia Coli (26,2%), Proteus mirabilis (18%) and Pseudomonas aeruginosa (15,4%) were the most common finding bacterias. Escherichia coli was the most common organism resistant to routine drugs. Maximum resistance existed towards Amoxicillin (87,4%), Cephalexin (72,3%), and Trimetoprim – sulphometoxasol (54,2%) and least resistance towards Imipenem (3%) and Gentamicin (24,4%).

CONCLUSION

our study shows that a considerable number (88%) of the patients had some form of drug resistance which is probably due to the indiscriminate use of antibiotics in patients with SCI. It is recommended to treat patient with spinal cord injury suffering from UTI, with the more available and cheaper antimicrobials such as Gentamicin and Imipenem in the first line and resort to more costly antimicrobials for special cases.

P106

SPASTIC HAND IN INCOMPLETE SPINAL CORD INJURY: SEVEN YEARS OF TREATMENT WITH BOTULINUM TOXIN. A REPORT CASE

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INTRODUCTION

78% of patients affected with spinal cord injury can develop spasticity one year after injury. This percentage rises up to 91% in tetraplegic patients, being most frequent and severe in incomplete spinal cord lesions. The use of botulinum toxin in the treatment of spastic hand secondary to spinal cord injury offers therapeutic possibilities superior to other pharmacological measures because it does not have general effects due to its selective action over the muscular groups directly involved in the spasticity.

OBJETIVES

To evaluate the efficacy of the treatment with botulinum toxin in one patient affected with spastic hand secondary to incomplete spinal cord injury along seven years of treatment.

CASE REPORT

Twenty three years old patient who suffered a motorcycle accident in 1996 presenting an incomplete spinal cord injury with level C4 right central cord syndrome secondary to C3-C7 compression fractures associating spinal cord hemorrhagic contusion. Two years after the spinal cord injury the patient was sent to our unit for the evaluation and treatment of spastic right hand he used as auxiliary. The spasticity of palmaris and flexor digitorum muscles (Aschwort 3/5) associated with diminishing strength of wrist dorsiflexion muscles and extensors of the fingers making prehension and hand grip difficult. Botulinum toxin type A was used to infiltrate periodically palmaris, pronator teres, flexor digitorum superficiales, profundus and lumbrical muscles improving the functionality of the hand. Nowadays, the patient can perform termini terminal pinch with 1st and 2nd fingers, termini lateral pinch with 3rd finger, tower of coins and writing.

CONCLUSION

Selective infiltration of spastic hand muscles after an spinal cord injury reduces spasticity of the involved muscles without diminishing the global strength of the hand improving its functionality.

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P107

CAUDA EQUINA SYNDROME INFLUENCE ON QUALITY OF LIFE – CASE REPORT

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INTRODUCTION

Cauda Equina Syndrome is a severe neurological disorder caused by compression of nerve roots forming cauda equina. Specific signs: a sharp radicular pains, "saddle anesthesia", lower extremity weakness, decreased or absent deep tendon reflexes, disorder of bowel or bladder function, sexual dysfunction. If this combination of symptoms occurs suddenly: urgent (surgical) operation in order to avoid permanent nerve damage! If it occurs gradually, the main warning sign may be urine retention! The most common cause is compression: midline disc herniation.

AIMS

To present the influence of CES on quality of life: patients are often unable to continue with their work (strong pains, a loss of muscle strength, problems with incontinence or combination), social life (the loss of sphincter control, urinary infections, the loss of sexual function leads to problems in partners' relations and depression, strong analgesic drugs may have side effects (obstipation), neurogenic pain has influence on sleeping, weakness in legs.

METHODS

M.M, 40 years old, worker, in Italy. Discomforts appeared in November 2004, by sudden weakness of lower extremities, radicular pains, saddle anesthesia, incontinence and impotence. Operated on December 16, 2004, because of disc herniation at L4-L5 level. Because of incontinence, operated on again on August 30, 2005 – implantation of definite urine bladder stimulator. After that, complex balneophysical treatment was carried out.

RESULTS

The result of timely manner treatment: no strong pains, established colon control, urine bladder control established with the help of stimulators, walks without aid.

CONCLUSION

Prompt surgical intervention and adequate physical treatment enabled the patient's recovery and return to social and work environment. HOPE FOR NEW LIFE!

P108

STREPTOCOCCUS MITIS SPONDYLODISCITIS – UN UNCOMMON CASE

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CASE REPORT

The authors describe a case of a 62 years old male, who suddenly presented complete paraplegia with a neurological level at T4. MRI showed an epidural haematoma at T4 level. Urgent decompressive surgery (T3-T6) was performed, along with drainage of a small abscessed area, from where a Streptococcus mitis sp was identified, although the source of infection is unknown. Antibiotic therapy was started. After 1 month, MRI showed no improvement. Patient didn't undergo surgery because of his unstable clinical condition. Triple antibiotic therapy was maintained. At Rehabilitation Department admission, the neurological injury (ASIA A) was similar, maintaining flaccid paraplegia. After 9 weeks on antibiotics, MRI showed radiologic improvement, with reduction of spondylodiscitic process. At this time, clinical assessment revealed ASIA B paraplegia with a neurological level at T5. Discussion Spondylodiscitis is being diagnosed with increasing frequency because of the advancement in magnetic resonance imaging (MRI) technology. Signal and enhancement changes can persist after clinical resolution of the infection, and these findings gradually decrease over weeks to months. Infective spondylitis is increasing in frequency in USA. However, nonpyogenic infections of the spine occur more frequently internationally, where organisms such as TB and brucellosis are endemic. With regard to aetiology, pyogenic spinal infections most commonly are caused by Staphylococcus aureus and Enterobacter species;Streptococcus mitis is a rare agent. Mycobacterium tuberculosis causes most nonpyogenic spinal infections. Acute deterioration from epidural abscess used to be a rare complication. However, this complication is increasing in frequency among patients with diabetes, immunosuppression and intravenous drug abuse, which was not the case in our patient. Nevertheless, persistent neurological deficit is not a frequent outcome, but our patient maintains ASIA B paraplegia. Surgical decompression and drainage and prolonged antibiotic use are standard treatment methods for pyogenic spondylodiscitis. Usually, a 6-week course of culture-specific intravenous antibiotic, is recommended, but there are studies where antimicrobial therapy was performed at least for 2 months. Although operative treatment may be required in patients with a neurologic deficit, it didn't happen on our patient because of clinical deterioration in the context of a septic shock.

P109

A RARE CASE OF PARAPLEGIA DUE TO SPINAL INTRADURAL HAEMATOMA IN A PATIENT ON ORAL ANTICOAGULATION

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INTRODUCTION

Spinal intradural haematomas are rare. Most are caused by trauma, anticoagulant therapy, vascular anomalies, hypertension, blood dyscrasias, epidural anaesthesia or, rarely spinal surgery.

OBJECTIVE

To report a rare case of cauda equina compression caused by anticoagulation therapy.

METHOD

A 65 year old woman on oral anticoagulation therapy with cardiac disease presented with acute lumbar pain and progressive loss of sensation with weakness in both legs; there was no history of trauma. Lumbar TC scan showed intradural haematoma compression of the cauda equina. The patient International Normalized Ratio (INR) was 4. T12-L4 laminectomy was performed and a haematoma extending between T11-L1

was found. The examination one month later showed a flaccid paraplegia ASIA A with sensory and motor level T12; motor score 54; pin prick score 80; light touch score 84; knee and ankle jerk reflexes were absent. The patient was with an indwelling catheter and was doing bowel care every two days. The Functional Independence Measure was 64. She was submitted on a rehabilitation program during three months.

RESULTS

At the time of discharge of the hospital the patient showed active movements of the knee and hip and visible contraction of tibialis anterior muscle, presenting motor score 59, sensory level L2 with pin prick score 92 and light touch score 102. The patient was doing intermittent catheterization every four hours and bowel care every two days. The Functional Independence Measure was 95.

CONCLUSION

This case highlights that anticoagulation therapy is not without risk. This is particular concern as the number of patients receiving long term anticoagulation therapy is increasing.

P110

THE ADMISSION COMPLAINTS OF CHRONIC SPINAL CORD INJURED PATIENTS IN THE FOLLOW-UP PERIOD

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Aim: The aim of this study was to evaluate the complaints of the spinal cord injured patients attending the follow-up clinic of a rehabilitation center in Istanbul during 2002-2006.

Material and Methods: Two hundred ninety spinal cord injured patients attending to the out-patient follow-up clinic were included in the study. The patients with less than 6 months of injury were not included. The patients' complaints were investigated from the records. A complete medical history and examination were made; all the patients were examined and classified according to ASIA/IMSOP standards during the visits.

Results: Two hundred ninety patients were enrolled in the study. The mean age was 35.29 ±14.53 years. The mean duration of injury was 61.13 ± 59.89 months (range 6-400 months). According to ASIA classification 46% of the patients were complete (ASIA A), 64% were incomplete (ASIA B,C,D,E). The most common complaint was pain (34%, 99 patients); spasticity or spasms (17%) and urinary incontinence (15%) were seen as second and third frequent complaints. Seventeen percent of the patients admitted for only routine follow up control and did not have any complaint.

Conclusion: Spinal cord injury is a chronic disease affecting the patients' life span. Follow up in the long term is important for these patients. Apart from the data on physical examination, patients own complaints are also important during follow up admission. Pain, spasticity and urinary incontinance were the most prominent complaints in this group.

P111

HYPERHIDROSIS IN SPINAL CORD INJURY – REGARDING A CLINICAL CASE

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INTRODUCTION

Sweating mechanism is controlled by sympathetic nervous system. In spinal cord injuries above T6, there may be found severe dysfunction of autonomic nervous system, leading to hyperhidrosis, among other complications. Regarding a clinical case of hyperhidrosis, the authors review the main clinical aspects and treatment for this condition.

MATERIAL AND METHODS

The authors present an inpatient clinical case of a 23 years old man with C6 quadriplegia ASIA A, due to a diving accident occurred in 2002. Short after the lesion, he started severe and annoying sweating of the left side of his body, worsen by the development of a pressure ulcer.

RESULTS AND CONCLUSION

Excessive sweating in a spinal cord injured patient may be a major concern that can predispose to skin breakdown, causing discomfort and interfering with social interaction. After plastic surgery of the pressure ulcer and medication with alpha-blockers, the patient improved significantly.

P112

HETEROTOPIC OSSIFICATION: REGARDING A CLINICAL CASE

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INTRODUCTION

Heterotopic ossification is defined as the presence of lamellar bone at locations were bone normally does not exist. The condition must be distinguished from dystrophic calcifications in tumours. It is a frequent complication following central nervous system disorders (spinal cord injury, brain injury, tumour, and encephalitis), multiple injuries, hip surgery and burns. Pathogenesis and aetiology are not well described; initial clinical symptoms are uncharacteristic, specific laboratory findings do not exist. Heterotopic ossification in more frequent in hips and knees and may contribute to pain,

further reducing the range of motion; also it directly contributes to an unbalanced positioning on the wheelchair, increasing the risk for pressure ulcers.

MATERIAL AND METHODS

The authors describe a case of a patient presenting tetraplegia ASIA A, neurological level C5, following a spinal injury in 1969, due to C4/C5 fracture. For more than thirty years, he was autonomous on an electrical wheelchair; however, in the last years, he developed increased difficulty in tolerating the sitting position. Imagiological exams showed exuberant heterotopic ossifications in both hips. The treatment option was orthopaedic surgery – Gurleston's type. The authors will review the main aspects of this condition.

RESULTS AND CONCLUSIONS

Heterotopic ossification is no trivial complication. A limitation of range of joint motion may have serious consequences for the daily functioning of people who are already severely handicapped due to their neurological lesion. Increased contractures and spasticity, pressure ulcers and pain further compromise the patient's capabilities. Attention should be paid to this condition which may occur throughout patient's life.

P113

VOIDING DYSFUNCTION AFTER TRAUMATIC SPINAL CORD

ANDRADE, Maria João; TRÊPA, Ana; GONÇALVES, Sofia; REIS COSTA, Helena; GUIMARÃES, Filipe; CASTRO, Ana; MOREIA, Jorge

The optimal method of bladder management in Spinal Cord injured patients must be based on urodynamics characteristics to prevent renal related morbidity and mortality. To investigate the effects of bladder management and urological complications, the authors retrospectively reviewed 96 patients with Traumatic Spinal Cord Injury (TSCI), admitted to our department of Physical and Rehabilitation Medicine, between January 1993 and December 2003. Clinical data registered during primary rehabilitation, 1 and 3 years after injury was collected from the hospital charts, namely the neurological status according to the American Spinal Injury Association (ASIA) guidelines, bladder management method, radiographic and urodynamic investigation and urological complications. For analysis, patients were grouped by gender, level and completeness of injury. Our preliminary data supports the need for close surveillance and follow-up after TSCI rehabilitation.

P114

GIRDLESTONES-TAYLOR PROCEDURE FOR CLAW TOES IN SPINAL CORD INJURY

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INTRODUCTION

A claw toe is defined as one with the metatarsophalengeal (MTP) joint in hyperextension and the proximal interphalengeal (PIP) joint and distal interphalengeal (DIP) joint in flexion. The deformity often gives rise to a painful callus on the skin over the IP joints and on the tip of the toe. In an earlier study of persons with spinal cord injury (SCI) 10% were found to have claw toes.
Aim: A combination of review of case notes and outpatient follow up

METHODS

9 patients with claw toe deformities to 27 toes were treated at the PRSIC from 1996 till 2005. These patients were reviewed after examination of their medical records and were assessed for pain, residual deformity and stiffness. They were also asked to give their assessment of the results in terms of their satisfaction with the outcome.

RESULTS

The average age of our series of patients was 43.3 years. The mean time from injury to surgery was 20.4 years and the mean time from surgery to last follow up was 37.3 months. All our patients had good to excellent results, with over 70% of the toes having excellent results.

CONCLUSION

Transfer of the FDL tendon to the extensor expansion alone (modified Girdlestones-Taylor procedure) for the treatment of non-fixed claw toe deformity in patients with SCI appears to be a safe and effective procedure that gives good to excellent results.

P115

THE IMPORTANCE OF USE ASIA CLASSIFICATION IN SPINAL CORD LESIONS. NOT ALWAYS WHAT SEEMS IS TRUTH. CASE REPORT.

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The authors present a case of a female patient who went at urgency because a fall at 16th December 2005. The orthopedic physician diagnoses a malleolar fracture. At this time she referred decreased muscles force in the legs, with sudden aggravation on this day. The radiographic examination revels also a spondylolisthesis L5-S1. The colleges of Orthopedic Department attributed the loss muscles force in the lower limb to neurological deficit associated to spondylolisthesis and to the pain (malleolar fracture). She received conservative treatment, but never recovered the walk. She was referred to Physical Rehabilitation Medicine at 17th March 2006. At

this time she referred partial loss of force in the lower limbs with urgency micturition, leakage of urine and constipation. She present OTR augmented, Babinsky bilaterally and decreased sense of sensations by D8. Because of these clinic presentations authors suspected a lesion of a higher level than L5-S1 spondylolisthesis. The RMI confirmed this suspicion. The authors presented this case in order to call the attentions to the need of always use the ASIA classifications in Spinal Cord lesions, even in not traumatic lesion.

P116

A GOOD PROGNOSIS IN A CASE OF MYELITIS TRANSVERSE

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INTRODUCTION AND OBJETIVE

Transverse myelitis (TM) is a neurologic syndrome caused by inflammation of the spinal cord. TM is uncommon but not rare. Conservative estimates of incidence per year vary from 1 to 5 per million population. The term myelitis is a nonspecific term for inflammation of the spinal cord; transverse refers to involvement across one level of the spinal cord. It occurs in both adults and children. You may also hear the term myelopathy, which is a more general term for any disorder of the spinal cord. TM symptoms develop rapidly over several hours to several weeks. Approximately 45% of patients worsen maximally within 24 hours. The spinal cord carries motor nerve fibers to the limbs and trunk and sensory fibers from the body back to the brain. Clinical case A 47 boy years old with symptoms of weakness with progressive worsening with decrease of force in low members, limb weakness, sensory disturbance, bowel and bladder dysfunction in a fllow-up of two weeks. The MRI show an inflammatory lesion within the cord at D10. The test which is commonly performed is a lumbar puncture to obtain fluid for studies, including white cell count and protein to look for inflammation, cultures to look for infections of various types, and tests to examine for abnormal activation of the immune system and was normal. A treatment with corticosteroids and specific rehabilitation program Recovery within 3 months, with improve in Barthel index 95/100 Conclusions. And individualized rehabilitador treatment is essential to stimulate the maxima functional independence

P117

FIBROMYALGIA IN A PATIENT WITH ASIA A PARAPLEGIA WITH D9 NEUROLOGICAL LEVEL – IS DIAGNOSIS POSSIBLE?

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In 1990 the American College of Rheumatology (ACR) defined the classification criteria for fibromyalgia as the presence of widespread pain for more than 3 months (pain in all 4 body quadrants, as well as in the axial skeleton) and pain in 11 of 18 point sites on digital palpation. In this case report the authors describe a 51 years old female, with an ASIA A paraplegia with D9 neurological level, that complaints of longstanding generalized pain (above the mentioned level), with pain on palpation in 10 of the 12 tender points located above that level, in association with sleep disturbance, depression and fatigue. Finally, the possibility of making a fibromyalgia diagnosis in a patient that cannot meet the ACR classification criteria is discussed.

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NEUROPSYCHOLOGICAL APPROACH TO TRAUMATIC BRAIN INJURY

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The authors described the consequences of a brain injury and the neuropsychological approach in the stimulation and on rehabilitation, physical and cognitive, considering a study case. The case report to 2 years of neuropsychological approach in a 19 year old male, who suffered a severe traumatic brain injury. The magnetic resonance study showed lesions in the first frontal lobe circumvolution, bilateral lesions in the basal ganglia and right side of corpus callosum. The polimodal stimulation and the cognitive rehabilitation process were described in this paper.

P119

INCIDENCE AND TREATMENT STRATEGY OF POSTTRAUMATIC EPILEPSY IN THE REHABILITATION UNIT

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AIMS

to determinate the incidence and the treatment strategy of posttraumatic epilepsy in the neuro-rehabilitation unit.

METHODS

Retrospective analysis of patients' data, treated during 2004 in the Brain Injury Rehabilitation unit of the National Institute for Medical Rehabilitation. 155 patients were treated with severe traumatic brain injury. The time elapsed between injury and admission was 50 (21-177) days. The mean age of patients was 33 (8-83) years. The average length of stay in the rehabilitation unit was 53 (2-144) days, but with the readmissions 75 (2-289) days. The majority of patients suffered traffic accident (116/155).

RESULTS

posttraumatic seizures were observed in 7 cases during the acute care and in 7 cases during the rehabilitation treatment. 3 patients were known as epilepsy cases before the accident. Altogether 31 patients were admitted with antiepileptic drug medication into the rehabilitation unit. The anticonvulsant drug withdrawal was successful in 12 cases, from the 16 law risk patients. The incidence of posttraumatic epilepsy was 14% in our unit.

CONCLUSIONS

posttraumatic seizures are important complications of traumatic brain injury. Anticonvulsant drug therapy is indicated when late recurrent unprovoked seizures are observed in the rehabilitation unit.

P120

INFLUENCE OF REHABILITATION APPROACHES ON THE QUALITY OF LIFE OF PERSISTENT MTBI PATIENTS

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Mild Traumatic Brain Injury (MTBI) constitutes 80% of head injury seen by physicians in emergency rooms. Studies show that approximately 20% of them will develop the chronic syndrome – Persistent Mild Traumatic Brain Injury (PMTBI). This syndrome is character by a variety of complaints in the physical, cognitive and emotional domains. Patients who suffer from PMTBI have trouble resume their occupational, social and familial life and they become a heavy bourdon on the health and welfare services. Nowadays, there are controversies regarding to rehabilitation of this kind of injury Some patients are not referred at all to treatment, while others receive multi disciplinary professional care. This study examines the different therapeutic approaches which exist in regard to this population and whether there is a connection between the treatments one received and the rehabilitative outcome. Adults with a MTBI diagnosis that were referred to Sheba Medical Center for the purpose of a rehabilitation medical evaluation will be included in this study. They will be divided into three groups: (i) Did not receive any treatment after the MTBI diagnosis. (ii) Were referred to rehabilitative psychological/ medical treatment only. (iii) Were referred to the day rehabilitation unit. 6 months to 3 years after the evaluation, they are asked to answer, by phone, the Rivermead post concussion symptoms questionnaire and the SF-36 health-related quality of life questionnaire. Our hypothesis is that regardless to the intervention that was made, patients that received any kind of treatment will report symptoms less severe and a greater perceived quality of life then those who did not receive any rehabilitative intervention at all. The results of this study will improve the understanding of the factors that contribute to the enrooting of the PMTBI syndrome and increase the efficiency of treatment in PMTBI syndrome.

P121

BILINGUAL APHASIA AFTER TRAUMATIC BRAIN INJURY: A CASE REPORT

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Bilinguals are people who use two or more languages to communicate on a regular basis. Bilinguals use different languages for different purposes and settings. They should not be considered as two monolinguals in the same person. Bilingual aphasia following brain damage may be less rare than thought because the number of bilinguals is increasing throughout the world. Language disorders and recovery patterns in these patients allow us to better understand the multi-lingual brain. The authors present a clinical case report of a right-handed, 43 year old man, previously healthy, which spoke Portuguese (L1) and Spanish (L2) fluently at a daily basis at home and work. He sustained a traumatic brain injury and multiple orthopaedic injuries in a traffic accident resulting in right hemiparesis and inability to speak. Early computer tomography showed "large temporal cerebral contusion with shift of the midline" and he underwent a neurosurgery procedure. After a month at intensive care unit he was admitted at our rehabilitation center, where he had daily sessions of physical and speech therapy for 11 weeks. Different patterns of language disorders were sequentially described: acutely there was a global aphasia; at week 6 a transcortical sensory aphasia; and from month 5 onward an anomic aphasia. In spontaneous speech he had problems in word finding and switching and mixing phenomena between Portuguese and Spanish language. The rehabilitation of bilingual aphasics should start with an assessment of the patient's linguistic disorders in the all languages that the patient knew. Usually only one language is rehabilitated. The selection criteria of the language to be rehabilitated could be: the mother tongue, the most useful language in daily living or the least impaired language. The choice should depend on the patient and his or her family's decision. Two years after the injury the patient still has the same pattern of language disorder and continues speech therapy in Portuguese.

P122

EXPERIENCE IN APPLICATION JF TRANSCRANIAL MAGNETIC STIMULATIONBY PAIR STIMULI AMONG AFTER TRAUMATIC BRAIN INJURY PATIENTS

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The possibility of applying the technique of paired stimulation among after traumatic brain injury patients

for the evaluation of clinical forecast. Considering, that the disturbance of cerebral blood circulation leads to a change in the balance of the brake-exciting reciprocal effects in the central nervous system, we investigated the prognostic significance of stimulation by pair stimuli, which together with the technique of silent period reflect the equilibrium of the processes of intra – cortical excitation \ braking. The device "Bistim" and "Viking Quest". Two sequential stimuli through one and the same coil, following each other with the interval of 1-20 ms were sent to the patients' motor cerebral cortex. The motor answer (MA) was received from the hand muscles (m.abductor pollicis, m.abductor digiti minimi). 25 after traumatic brain injury patients (11 women, 13 men) with the duration of the illness from 3 to 6 months at the age of 20-45 were observed. Motor scarcity was at the level of 1-3 point hemi-pares (by 6-point Weiss scale) After obtaining the results of TMS all the patients were divided into 4 groups: 1 – with the signs of the intra-cortical braking decrease (5 people); 2 – with the signs of the intra-cortical braking strengthening (9 people); 3- with the signs of the intra-cortical braking decrease and disturbance of simplification (6 people); 4- with the signs of the intra-cortical braking strengthening and weakening of the process of intra-cortical excitation (4 people). Catamnesis of the change in the clinical picture was tracked in the course of 10-12 months. The criterion was the dynamics of the manifestation of hemiparesis, a change in muscular force. In the groups of patients with the decrease in the process of the intra-cortical braking (irrespective of the presence of changes in the phenomenon of simplification) muscular force increased by 1, 2 points. In the groups where the "retardation" of the motor neurons of the injured hemisphere was noticed (intra-cortical braking strengthening), the completion of motor scarcity to 0, 6 points was observed. In the presence of indicative reductions in the intra-cortical braking on TMS among after traumatic brain injury patients, the forecast of motor functions rehabilitation can be considered favorable; the phenomenon of intra-cortical braking strengthening can be estimated as a sign of unfavorable forecast.

P123

PHYSICAL THERAPY OF PARKINSON'S DISEASE: THE VALUE OF ACTIVITIES OF DAILY LIFE (ADL) SCALE.

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The aim of this work was to determine the reliability of Activity of daily life (ADL) scale for selfestimation of results of physical therapy for Parkinson's disease. Prospective study comprised of 60 patients with Parkinson's disease, aged over 50 years, and 20 healthy controls with the same age. The classification of stages of disease was performed according to Hoehn aned Yahr. Physical therapy was applied according to the stage. ADL scale was used for selfestimation of results of therapy (Nieuwboer A i sar, 2000). This scale showed difficulties in balance and seating, hesitation, festination and blocks during turning and walking, altered axial movements in bed, as well as during performing complex movements. The most important difficulties encountered by the patient were present during performing complex movements. The estimation of patient and physical therapist correlate, with slightly lower degree of alterations documented by patients. It can be concluded that physical therapy causes significant improvement of all the analysed parameters of ADL sale. Selfestimation of difficulties in daily life using ADL scale is reliable and should be used for analyse of patients difficulties and the effect of physical therapy of Parkinson's disease.

P124

IMPORTANCE OF INTRATHECAL BACLOFEN WITHDRAWAL DIFFERENTIAL DIAGNOSIS: A CASE REPORT

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[1]H. PRELADA

INTRODUCTION

Most of intrathecal baclofen complications are transient and not significant; other complications could be severe and even fatal. Baclofen withdrawal is one of the main risks. It most commonly occurs as a result of a problem with the delivery system (pump or catheter). The symptoms are most often limited to return of the patient baseline spasticity but sometimes it results in a life-threatening syndrome which shares some characteristics with several other syndromes such as autonomic dysreflexia, sepsis, meningitis, malignant hyperthermia. Baclofen withdrawal is a life-threatening syndrome which must be diagnosed and treated appropriately. Treatment consists of supportive care, reinstitution of baclofen, benzodiazepines and eventual repair of intrathecal pump and catheter malfunction.

AIM

To report a case of baclofen withdrawal mimicking autonomic dysreflexia.

METHODS

The authors present a case of a 35 –year-old male with incomplete spastic (ASIA B) tetraplegia for the past 9 years, treated with intrathecal baclofen for 2 years, with a good response in the first months. After that his spasticity increased progressively (modified Ashworth and spasm frequency scale at 4/4) and he had several episodes of hypertension, tachycardia and hyperhidrosis that were interpreted and treated as autonomic dysreflexia symptoms. A probable tolerance was suggested.

RESULTS

An intrathecal baclofen test was performed with a successful result on spasticity, excluding a possible tolerance. No signs of pump disfunction were detected. We

concluded that the reason of the problem was a catheter malfunction. The patient underwent surgery during which it was detected that the catheter was out of the subarachnoid space. The intrathecal catheter thus was surgically replaced, following a complete resolution of symptoms.

DISCUSSION

The positive baclofen test excluded a possible tolerance. We concluded that the spasticity worsening was due probably to baclofen withdrawal caused by a delivery system problem and those episodes interpreted as autonomic dysreflexia could be an expression of that. We must analyse of all options of system delivery malfunction and sometimes it must be necessary to replace part or all the system delivery.

P125

INTRATECAL BACLOFEN IN THE TREATMENT OF SPASTICITY

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INTRODUCTION/AIMS

The autors appreciate the effectiveness in the utilization of intratecal baclofen in several spasticity treatment on different types of pathologies.

METHODS

Retrospective analysis of 9 patients for evaluation of the evolution in scales of spasticity (Ashworth and spasm), functionality (MIF, I. Barthel), pain (numerical scale) and satisfaction degree.

RESULTS

9 patients were included (5 spinal cord injury, 2 traumatic brain injury and 2 stroke disability), followed in Physical Medicine and Rehabilitation Department of Hospital Curry Cabral; during the 4 years of the study the autors verified a global improvement in the scales used and in the degree of satisfaction by the patient and the care givers.

CONCLUSION

The obtained results support the efficacy of the treatment of spasticity with intratecal baclofen.

P126

BOTULINUM TOXIN IN VASCULAR HEMIPLEGICS: THE SMFR-HUC EXPERIENCE

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OBJECTIVE

To characterize a group of chronic post stroke hemiplegics treated with botulinum toxin type A.

MATERIAL AND METHODS

36 post stroke hemiplegics were selected from a total of 48 patients treated with botulinum toxin, being the others excluded for having other spasticity aetiologies. A transversal descriptive study was performed, revising 36 patients subjected to a total of 79 treatment sessions from May 2003 to May 2006. It was registered the gender, age, limb, number of muscles injected, number of sessions and the period of time between each session. It was also made a longitudinal study of the 11 patients who were submitted to three or more sessions. After the treatment all the patients were subjected to conventional kinesitherapy for a minimum period of three weeks.

RESULTS

The average age was 56 years (range 27 to 82). Most of the treated patients were male (58,3%). 47,2% received treatment only for the lower limb, 44,4% only for the upper limb and 8,4% for both limbs. The average of the injected muscles was 6 in the upper limb and 3 in the lower limb. The most frequently involved muscles were the flexor digitorum superficialis and the flexor digitorum profundus in the upper limb and the gastrocnemius and the soleus in the lower limb. Each patient made 2 sessions on average, with a medium interval of 6 months.

CONCLUSIONS

It was confirmed a progressive increase in the period of time between the sessions until the third one, stabilizing from then on. The patients who made at least 3 sessions showed similar characteristics, being relevant a progressive reduction in the number of muscles injected.

P127

SPASTICITY TREATMENT WITH BOTULINIUM TOXIN – RESULTS IN CHILD EQUINUS FOOT

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INTRODUCTION

Spasticity is a component of the upper motoneuron syndrome characterized by a velocity-dependent increase in muscle tone. It contributes to functional limitations, pain and deformity. Botulinium Toxin (BTX) is a neurotoxin that blocks neuromuscular transmission leading to reversible denervation. Serotype A (BTX-A) has FDA approval for spastic equinus foot in children with cerebral palsy.

MATERIALS AND METHODS

We have analysed a few cases of spastic disorders followed in Hospital Pediátrico de Coimbra. We collected information of six patients with focal spasticity to whom we manage TXB-A. It was made clinical evalua-

tion (spasticity-Modified Ashworth Scale-MAS, muscular strength – Medical Research Council, goniometry) and functional (gait observation and video recording). The patients were evaluated one week before, one month and three months after manage with TXB-A, recording the evolution in functional skills, spasticity and deformity.

RESULTS

Six paediatric patients were selected, three males and three females, with an average age of 8.3 years old. All of them had spastic equinus foot and gait limitation; four of them with traumatic brain injury, one with cerebral palsy and the other with cerebral tumour. It was not found spasticity reduction in four of the patients and the other had one point decrease in MAS score. All had benefits on equinus and five significant gait improvements. Adverse effects and complications haven't been reported.

CONCLUSION

TXB-A have documented effectiveness in focal spasticity treatment, leading to a functional improvement, delay in the development of deformity and improvement in life quality. In the six cases that we present is relevant the advantage of TXB-A in subjective terms and of the observation and report in video of the gait pattern, although the low impact on the objective scales.

KEY-WORDS

Child spasticity, botulinium toxin, equinus

P128

MANAGEMENT OF SPASTICITY WITH BOTULINUM TOXIN TYPE A IN PATIENTS WITH MULTIPLE SCLEROSIS

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AIM

To study the spasticity management after Botulinum toxin-A (BTA) injection in specific muscle groups and a specialized rehabilitation program in patients (pts) with Multiple Sclerosis (MS).

MATERIAL – METHODS

In the total of pts with MS of our Department during the period 2002-2005, 41 pts (18 males,23 females) with incomplete spastic paraplegia were chosen for BTA injection in spastic muscles of the lower limbs under electromyographic guidance. Mean age: males: 51.5 years, females: 49 years. Mean number of injections: 1.3/patient. Injected muscles: hip adductors, triceps, tibial posterior, digital flexors, harmstrings. The inclusion criteria were mainly functional and the dose of BTA was not determined by mAshworth Scale (MAS) only. Inclusion criteria: Incomplete spastic paraplegia, MAS>2, Difficulties in ADL, Improper posture at sitting position, Pain syndrome, Sleep disturbances, Balance impairment, Risk of falls during ambulation, Abnormal gait pattern, Exacerbation of spasticity induced by standing position,ambulation or fatigue. One week post injection, dynamic AFOs were used in case of rheological changes, followed by a Rehabilitation program. Group A :BTA injection in one lower limb. Sixteen pts (10 males, 6 females). Mean dose/session(Md/s): BOTOX:100 I.U., Dysport:575 I.U. Group B: BTA injection in both lower limbs.Twenty five pts (8 males, 17 females).Md/s: Botox:269 I.U., Dysport:1262 I.U.

RESULTS

None of the pts had side effects.All pts had a reduction of at least 1 grade of the MAS. Sixteen pts with MAS > 2 had a reduction of at least 2 grades.All the pts improved at therapeutical and functional ambulation ability and ADL (basic, indoors and outdoors activities).

CONCLUSION

The BTA use in pts with MS and spastic paraplegia contributes to the enhancement of the rehabilitation program when the pts are selected not only according to the bedside evaluation of spasticity, but also according to functional criteria.

P129

BOTULINUM TOXIN IN THE TREATMENT OF SPASTICITY IN CHILDREN

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INTRODUCTION

Botulinum toxin a (btx-a) is increasingly being used in the management of spasticity in children, with the aim of improving function and delaying surgical correction of deformities.

AIM

To study retrospectively the effects of btx-a in the management of spasticity in children.

METHODS

A retrospective review of clinical records of children treated from january until december, 2005, in an outpatient setting was undertaken at alcoitão rehabilitation medicine center paediatrics' department.

RESULTS

79 patients aged 3 to 20 years were identified; most had spasticity due to cerebral palsy or acquired brain injury. the patients were divided in 3 groups: upper

limbs, lower limbs and hip subluxation. 31 children (22 male, 9 female) were injected in upper limbs. 45 treatment sessions were performed. the most frequently injected muscles were biceps brachii, pronator retes, flexor carpi radialis, flexor carpi ulnaris, flexor digitorum superficialis and flexor digitorum profundus. the primary goal was posture improvement to easier activities of daily living (adls) performance. 71% of patients showed diminished spasticity with improved range of motion (rom). 61 children (38 male, 23 female) were injected in lower limbs. 85 treatment sessions were performed. Gastrocnemius, soleus, adductor brevis, longus, magnus, gracilis, semitendinosus and semimembranosus were most frequently injected. The primary goal was gait improvement. 74% of patients showed diminished spasticity with improved rom and motor function. 8 patients (6 male, 2 female) were treated for paralitic hip subluxation. 17 treatment sessions were performed with the aims of improving hips abduction (and thus facilitate adls performance) and relieve pain. All showed improvement. No serious side effects were recorded.

CONCLUSION

This retrospective review shows btx-a is an effective and safe option in the management of spasticity in children

P130

LATE SPASTICITY TREATMENT OF THE UPPER LIMB TRAUMATIC BRAIN INJURY PATIENT – CLINICAL CASE

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INTRODUCTION

Focal hyperhidrosis is a common condition, with a prevalence of 2,8% and only 38% patients consulting their physician about their excessive sweating. This pathology is mostly confined to the axillae, palms and soles. In some individuals, usually men, appears frontal hyperhidrosis, a major complaint interfering with the person´s quality of life and professional performance. Botulinum toxin has shown to be an effective treatment for axillae and palms hyperhidrosis.

AIMS

To present the technique and response in one patient diagnosed with frontal hyperhidrosis treated with botulinum toxin type A.

METHODS

Injection of botulinum toxin type A, with mesotherapy needle, in symmetrical quadrants distributed over the forehead, preserving the orbicularis oculi muscle, using a total 75 units dose. Follow up assessment by visualization sweat exam and subjective judgement of the patient.

RESULTS

The amount of sweat production was reduced and maintained over time, confirmed in assessment, lasting 6 months. The patient reported a returning to a good quality of life and a normal professional performance. No major side effects were reported (Frontal muscle block, palpebral ptosis or facial paralysis). As minor side-effects only transient and discrete hyperhidrosis increase in other body areas, which doesn´t worried, neither affected the patient relationships or quality of life.

DISCUSSION

In this clinical case, we used our center experience with several and different pathology botulinum toxin applications, to treat a pathology not usually managed by rehabilitation professionals, but which is a cause of incapacity to work and social life restriction. We conclude that another indication of botulinum toxin type A may be the frontal hyperhidrosis treatment in selected cases, being a positive indicator for further studies.

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BOTULINUM TOXIN IN THE TREATMENT OF SPASTICITY IN CHILDREN

BORGES, Ana; AUGUSTO,A.; VICENTE,A.; BATALHA, I.; LOPES, H

CENTRO DE MEDICINA DE REABILITAÇÃO

INTRODUCTION

Botulinum toxin a (btx-a) is increasingly being used in the management of spasticity in children, with the aim of improving function and delaying surgical correction of deformities.

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motion (rom). 61 children (38 male, 23 female) were injected in lower limbs. 85 treatment sessions were performed. Gastrocnemius, soleus, adductor brevis, longus, magnus, semitendinosus and semimembranosus were most frequently injected. the primary goal was gait improvement. 74% of patients showed diminished spasticity with improved rom and motor function. 8 patients (6 male, 2 female) were treated for paralitic hip subluxation. 17 treatment sessions were performed with the aims of improving hips abduction (and thus facilitate adls performance) and relieve pain. all showed improvement. No serious side effects were recorded.

CONCLUSION

this retrospective review shows btx-a is an effective and safe option in the management of spasticity in children.

P132

COMPARISON OF EFFICACAY OF CORTICOSTEROID INJECTION, SPLINT AND PHYSIOTHERAPY IN DIABETIC CTS

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OBJECTIVE

To evaluate the efficacy of physiotherapy, steroid injection, and use of night atel in diabetic carpal tunnel syndrome.

MATERIAL AND METHODS

Total of 54 hands belonging to 35 diabetes mellitus (DM) patients were included in this prospective, single blind, randomized study. Patients were distributed into three treatment groups. One group received a 10-session physiotherapy (US and TENS), one group used a neutral positioned hand atel the night, and one group received 5 mg injections of Betamethason. Patients were evaluated before and 3 months after the treatment. Evaluation parameters were: pain (VAS), Sensory (Semmes-Weinstein Monoflaman (SWM), discrimination test), motor strength (Jamar dynamometer, pinchmeter), function (Sollerman hand function test (SHFT), Boston carpal tunnel syndrome questionnaire (BCTSQ), Health Assessment Questionnaire (HAQ). EMG was repeated in all patients after the treatment.

RESULTS

Significant improvements ($p<0.05$) were determined in all treatment groups in VAS, SWM tests, two points discrimination test, grasping and pinch power, SHFT, BCTSQ. In EMG, significant improvements were observed only in injection group. No significant changes were determined between the groups in terms of improvement rates before and after the treatment in all clinical parameters and electrophysiological parameters ($p>0.05$).

CONCLUSION

The fact that significant improvements were obtained in most of the clinical evaluation parameters in all treatment groups, and that no significant changes were determined between the groups in terms of improvement rates before and after the treatment in all clinical parameters and electrophysiological parameters, suggest that all three methods might be used in the conservative treatment of diabetic carpal tunnel syndrome. However, injection of corticosteroids might be preferred when factors including the significant improvement obtained in EMG findings.

P133

LOW BACK PAIN WITH HERPES ZOSTER SCIATICA: A CASE REPORT

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INTRODUCTION

Herpes zoster infection results from reactivation of the latent varicella zoster virus (VZV) in the dorsal root ganglia spreading along the sensory nerves resulting in radicular pain and dermatomal vesicular rash.

AIM

To report a case of low back pain with herpes zoster sciatica.

METHODS

The case is of a 60 year old male patient presenting a 3 week lumbosciatica inflammatory type pain. Previously submitted a different consultations and medicated with analgesics, anti-inflammatory and muscle relaxants without response. We observed a cutaneous vesicular rash over the territory of a sciatic nerve branch, not valued at the time. The cutaneous reaction was diagnosed as being a herpes zoster infection. He was started on gabapentin and valacyclovir and screened for causes of immunodepression.

RESULTS

The screening for immunodepression was negative. After 4 weeks the pain subsided and the lesion regressed completely.

DISCUSSION

VZV infection is a relatively common cause of sciatic pain and must be considered in the differential diagnosis of radiculopathy, especially in immune-depressed

individuals. It is very important to carefully observe the patient and properly characterize the pain. Screening for immunodepression and other risk factors must be done. The diagnosis and early treatment of VZV radicular infection improves the patients outcome.

P134

LUXATION OF THE ULNAR NERVE

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[1]CFA; [2]H. PEDRO HISPANO SA

The authors present two cases of Luxation/Dislocation of the ulnar nerve, one on the left side, traumatic in aetiology, in a 34 years old woman, and another, apparently congenital or related to developmental laxity of the soft tissue constraints, bilateral, in a 16 years old boy. The ulnar nerve passes through the cubital tunnel where it is contained by the cubital tunnel retinaculum. This has its origin on the medial epicondyle and inserts on the olecranon, covering the cubital groove. It gets tensed and flattened with elbow flexion and lack of it will allow the nerve to sublux. Chronic ulnar nerve dislocation is an abnormal condition characterized by movement of the nerve out of the cubital tunnel. The authors display a systematic review of this pathology, including clinical data and therapeutic options (conservative and surgical).

P135

PRIMARY CUTANEOUS ACTINOMYCOSIS OF THE THIGH

MOTA RIBEIRO, Manuela[1]; ROMANO, Otília[2]
[1]CFA; [2]IPO

Actinomycosis is a chronic and progressive suppurative infection caused by an endogenous Gram-Positive bacterium, typically presenting on the neck, thorax, and abdomen. Primary cutaneous actinomycosis is a rare entity, and the diagnosis requires a high index of clinical suspicion. Primary disease of the extremities is uncommon and sometimes has an association with trauma and bites. The authors report on the case of a primary cutaneous actinomycosis of the thigh in a 16 years old boy, which suffered some complications after surgical resection (inflammatory signs, abscesses with purulent discharge, central necrosis and leakage at suture), with necessity of reconstructive surgical procedures (including debridement and skin drafts). After the last surgery he developed a severe sciatic lesion (partial nerve axonotmesis), associated with stiffen knee and ankle, reason why he was, for the first time, seen on Physical Medicine and Rehabilitation consultation. The patient has done physical therapy by 19 months (during which he did not reveal so much interest in cooperate and after which he abandoned), with not some many results. Many muscles, subcutaneous fat and skin were affected by the suppurative inflammatory process which, in conjunct with the sciatic nerve lesion, the stiffness of the articulations of the limb, and his poor cooperation, limited in much the possibility of recovery.

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REHABILITATION AND FUNCTIONAL RESULTS AFTER HYPOGLOSSAL-FACIAL ANASTOMOSIS: A CLINICAL CASE

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Facial paralysis has enormous consequences to the patient due to facial´s nerve multiple functions, including its motor branches which are responsible for mimetic expression and very important for human comunication. Despite advances in neuro-otological techniques permanent complete facial palsy may still occur in up to 10% of patients undergoing removal of cerebellopontine angle tumours. Hypoglossal-facial nerve anastomosis is a procedure of choice in such patients. The authors report a case of a patient who underwent a neurosurgical exeresis of an acoustic neuroma on Setember 2005, and subsequently presented with a total facial palsy. On October 2005 was submitted to hypoglossal-facial nerve anastomosis and after it, the patient was put to regular facial rehabilitation. Assessment of patient evolution and function recuperation during 9 months was obtained using the House Brackmann Scale and Visual Analogical Scale (for a subjective functional evaluation), and both showed an important improvement. This presentation reports a case of Hypoglossal-facial nerve anastomosis and the pos operatory facial rehabilitation treatment, demonstrating its benefits on the clinical evolution and function recuperation. And emphasises the importance of including a subjective functional evaluation by the patient in these cases.

P137

BILLATERAL BRACHIAL PLEXUS INJURY DURING THORACOSCOPIC SYMPATECTOMY FOR HYPERIDROSIS: A CASE REPORT

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INTRODUCTION

Brachial plexus injury is a very rare complication after thoracoscopic sympathectomy, and a bilateral brachial plexus injury is even rarer. It results from stretching of this plexus or compression from surrounding structures that can cause ischemia in the nerve trunks.

AIM

To report a very rare complication after thoracoscopic sympathectomy.

METHODS

The authors present a case of a 23-year-old man that underwent a bilateral thoracoscopic sympathectomy for hyperhidrosis. Surgery was performed under general anaesthesia with patient in the semi-sitting position with arms abducted. No complications happened during surgery. After surgery, the patient was unable to hold his arms up and described numbness of both arms and forearms. Electromyographic study showed neuropraxy of both brachial plexus. A rehabilitation program was started.

RESULTS

The outcome was excellent, with almost complete recovery 6 weeks after the surgery.

DISCUSSION

The brachial plexus is susceptible to injury by stretch and compression due to its superficial location and its lack of mobility. Position factor which may increase stretching of the brachial plexus include hyper-abduction of the arms. The prognosis for postoperative brachial plexopathy is usually good with conservative management. The authors present this case because, to our knowledge, this is such a rare situation that it is the first case reported in the literature.

P138

SCIATIC NERVE INJURY FOLLOWING HAMSTRING STRAIN: A CASE REPORT

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INTRODUCTION

Injury of the sciatic nerve following hamstring strain is such a rare complication that we couldn't find it described in the literature.

AIM

To report a case of sciatic nerve injury following hamstring strain.

METHODS

The authors describe a case of 65-year-old woman that had a non traumatic hamstring strain. About 3 days after, she presented pain and a large bruise in the posterior face of the thigh and numbness of the whole inferior limb. At clinical examination we observe absent ankle tendon reflex, reduced muscular strength at plantar flexion of the foot, positive straight leg rising, and pain at hamstring palpation. It was administrated an intramuscular corticoid. An electromyographic study (EMG) was requested and she started a rehabilitation program.

RESULTS

The EMG revealed sciatic nerve injury with sensitive predominance, in continuity, and low gravity. Three months later, the pain had diminished, straight leg rising became negative and she was able to walk on toes and on heels. A new EMG showed a normal nervous conduction.

DISCUSSION

The sciatic nerve is the major nerve arising from the sacral plexus and is derived from the spinal nerves L4 to S3. It crosses the hip joint just deep to the piriformis muscle, and continues down from the posteromedial aspect of the thigh, innervating the hamstrings. A number of variations of the course and distribution of the nerve have been reported. In small individuals, the sciatic nerve can be found in the close proximity to the semitendinosus and gracilis tendons, therefore, in these circumstances may be more vulnerable to injury. In the literature it is described injury of the sciatic nerve due to compression, because of extensive haematomas. In this case the patient reported paresthesia and a sudden electrical shock pain along is lower limb just after the occurrence that was on the origin of the strain. The authors believe that in this case the sciatic lesion was due to the direct trauma to the nerve.

P139

BRACHIAL PLEXUS LESIONS–FUNCTIONAL OUTCOME OF 2 DIFFERENT SURGICAL OPTIONS TO RESTORE ELBOW FLEXION

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The paralysis of the upper limb produces major functional impairment and can greatly compromise the ability to perform activities of daily life. Tendon transfers have been used in upper extremity reconstruction for well over a century. A frequent problem in brachial plexus injury is loss of elbow flexion which is often associated with severe paralysis of the entire upper limb, resulting in few muscle local donors. If the pectoralis major or latissimus is functioning, one of these may be transferred to the biceps distally to produce elbow flexion. If the wrist and finger flexors remain strong, the patient may be a candidate for a Steindler flexorplasty. In 1918 Steindler recommended use of the flexor/pronator muscle group which is detached at the medial epicondyle and transposed proximally to attach to the distal humerus so that their moment for elbow flexion is increased enough to permit active control. Mayer and Green modified the original flexorplasty in 1954 by attaching the medial epicondyle to the humerus for a more rigid fixation and Bunnel suggested attach more laterally to decrease the pronator effect. The authors describe the functional outcome of two patients with brachial plexus lesions that were submitted to different surgical options to restore elbow flexion. They were both victims of motor vehicle accident in 2003. One was submitted in October 24th 2005 to Steindler

flexorplasty and the other went through a pectoralis major transfer in February 9th 2006. They are both undergoing a rehabilitation program. Restoration of active elbow flexion remains an important functional goal in patients with paralytic deformities of the upper limb and particularly those with diffuse or upper brachial plexus injuries. The rehabilitation program and the patient motivation are essential for achieve good results.

P140

REHABILITATION IN A PATIENT WITH INJURY TO THE IX, X, XI AND XII LEFT CRANIAL NERVES

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Case Report ASP, female, 64 was submitted to a surgical resection of a left cervical chemedectoma associated with a paraganglioma of the Vagus evolving also the ipsilateral carotid sinus. As sequelae the patient developed left hemiatrophy of the tongue, disphagia, altered vomiting reflex, atrophy and paresis (strength: grade 3) of the left sternocleidomastoid and superior trapezius muscles and a left Horner Syndrome. Other autonomic dysfunction or cardiac abnormalities were not clinically found. The main objectives in the rehabilitation programme were restoring cervical and left shoulder range of motion and muscle balance and also treating dysphagia. She begun hydrotherapy, range of motion and muscle strengthen exercises and also swallowing therapy. After 4 months the results were rather satisfactory. With this case report we want to review the lower cranial nerves anatomy and physiology, and to describe our patient-based rehabilitation strategy.

P141

COMMON PERONEAL INTRANEURAL CYST AND NEUROFIBROMA: A CASE REPORT

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An 11-year old previously healthy boy was referred to our consultation for a left footdrop. There was a history of a peculiar fluctuating pain at the peroneal head on the previous half year, radiating to the anterolateral surface of the leg and dorsum of the foot and related to sporting activities. Two weeks before our examination and immediately after a Basketball game, an intense pain began at the same anatomic region, followed on the third day of symptoms by an acute motor deficit of the peroneals and the tibialis anterior. Physical examination revealed a complete impairment of dorsiflexion and eversion of the left foot, as well as sensory deficit on the anterolateral leg and dorsum of the foot. Neurophysiological examination described a marked global impairment of the muscles innervated by the peroneal nerve. Ultrasound and MRI showed an intraneural lesion in close proximity to the neck of the fibula and extending in a tubular fashion. At surgery, a glassy, irregular intraneural mass in the common peroneal nerve sheath was found and was totally excised (remaining just a thin bundle of nerve fibres with normal appearance). Histology revealed an intraneural cyst, with a combination of fibrous and fibro-lipidic tissue among fragments with morphological and immunohistochemical characteristics compatible with neurofibroma. There are no signs of neurological recovery after seven months, raising the discussion over re-operation for nerve or tendon transfer. The authors present this case report due to its atypical characteristics and rarity of diagnosis.

P142

MERALGIA PARESTHETICA – CASE REPORT

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Meralgia Paresthetica (Bernhardt-Roth syndrome) is a compression syndrome of the lateral femoral cutaneous nerve. This is a purely sensory nerve that supplies the skin of the anterolateral thigh. The point of its exit from the pelvis near the anterior superior iliac spine, where is passes underneath the inguinal ligament, can be a site of a mechanical lesion. The patient complains of burning pain and/or dysesthesia in the anterolateral thigh. The pain occurs in relationship to local factors, such as wearing a belt or clothing which is too tight. There could be a connection with abnormal stress on the abdominal musculature, e. g. during pregnancy, or by standing with the hip extended for a variable amount of time. Coxarthrosis and diabetes may be predisposing. The natural history of this condition is benign and about 25% of the patients become symptom free spontaneously over the course of months or years. The conservative treatment is efficient in the majority of cases. Total recovery from the symptoms can also be found after neurolysis of the lateral femoral cutaneous nerve at its passage through the inguinal ligament. The authors describe a case of a 23-year-old caucasian female, without any past medical history, that presented with a one-year history of pain and paresthesia in the anterolateral thigh. Physical examination showed paresthesia in the same area and a positive Tinnel sign by tapping a point of tenderness medial to the superior anterior iliac spine, reproducing the symptoms. There was no motor weakness or other pathologic findings. Electromyography (EMG) showed no potential of the lateral femoral cutaneous nerve, compatible with meralgia paresthetica. The patient was treated by conservative methods such as TENS e micro-waves with improvement of the symptoms.

P143

PERIPHERAL NEUROPATHY CAUSED BY CARBAMAZEPINE – A CASE REPORT

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INTRODUCTION

The peripheral nerve axon is particularly vulnerable to toxins. Several toxic agents, including antiepileptic drugs, are responsible for neuron damage. Carbamazepine is a rare cause of peripheral neuropathy and has been less described than phenytoin, phenobarbital or valproate neuropathies. Toxic peripheral neuropathies typically present with a glove and stocking distribution of sensory loss followed by weakness in the same area. The disease becomes evident within weeks of toxin exposure, although the presentation may be insidious. Recovery can take place over several months to years following appropriate treatment once the inciting agent is removed.

AIM

To report an unusual case of peripheral neuropathy caused by carbamazepine.

METHODS

The authors present a case of a 30-year-old male with a history of epilepsy since the age of 16 years treated with carbamazepine. Six years before, in the year 2000, the patient presented weakness in the four limbs mostly in a distal distribution as well as a stocking and glove sensory loss, with a subacute evolution. The electrofisiologic studies and the nerve biopsy revealed a sensitive-motor axonal polineuropathy. Despite the extensive studies (immunologic, metabolic, endocrine, genetic) the etiology remained unknown and a toxic cause (carbamazepine) was considered.

RESULTS

after suspending carbamazepine the patient presented considerable improvements particularly in muscular strength, despite maintained sensory loss, including proprioceptive deficits and gait disturbance.

DISCUSSION

In our clinical practice we deal frequently with antiepileptic medicated patients. In these cases when the epilepsy is treated with carbamazepine and there are clinical signs of polineuropathy we must exclude a toxic neurological effect of this drug.

P144

STATISTIC REVIEW OF OBSTETRICAL BRACHIAL PLEXUS PALSY OF THE PMR SERVICE OF S. MARCOS HOSPITAL

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Brachial plexus injuries in newborns mostly occur during difficult delivery. There are four types of paralysis: Erb's palsy (C5 and C6), superior and medial trunk palsy (C5, C6 and C7), Klumpke's palsy (C8 and D1) and total palsy (C5-D1). The diagnostic is clinical and can be complemented by EMG and MRI. The initial treatment is conservative with protective measures. The rehabilitation program usually begins within three weeks and includes education of caregivers, mobilization and recommended postures. The outcome is auspicious with total recover up to 90% of cases after adequate rehabilitation treatment. In cases with precarious evolution (muscular strength grade <3 of biceps brachial, with 3 months of evolution) or with permanent sequels surgery is indicated. We present a statistic study of obstetrical brachial plexus plasy cases that were treated in PMR Service of S. Marcos Hospital between January of 2004 and September of 2006 and focus the rehabilitation protocol indicated for obstetrical brachial plexus palsy.

P145

COMPARISON OF THE EFFICACY OF CORTICOSTEROID INJECTION, NIGHT ATEL AND PHYSIOTHERAPY IN DIABETIC CTS

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OBJECTIVE

To evaluate the efficacy of physiotherapy, steroid injection, and use of night atel in diabetic carpal tunnel syndrome.

MATERIAL AND METHODS

Total of 54 hands belonging to 35 diabetes mellitus (DM) patients were included in this prospective, single blind, randomized study. Patients were distributed into three treatment groups. One group received a 10-session physiotherapy (US and TENS), one group used a neutral positioned hand atel the night, and one group received 5 mg injections of Betamethason. Patients were evaluated before and 3 months after the treatment. Evaluation parameters were: pain (VAS), Sensory (Semmes-Weinstein Monoflaman (SWM), discrimination test), motor strength (Jamar dynamometer, pinchmeter), function (Sollerman hand function test (SHFT), Boston carpal tunnel syndrome questionnaire (BCTSQ), Health Assessment Questionnaire (HAQ)). EMG was repeated in all patients after the treatment.

RESULTS

Significant improvements ($p<0.05$) were determined in all treatment groups in VAS, SWM tests, two points

discrimination test, grasping and pinch strength, SHFT, BCTSQ. In EMG, significant improvements were observed only in injection group. No significant changes were determined between the groups in terms of improvement rates before and after the treatment in all clinical parameters and electrophysiological parameters ($p>0.05$).

CONCLUSION

The fact that significant improvements were obtained in most of the clinical evaluation parameters in all treatment groups, and that no significant changes were determined between the groups in terms of improvement rates before and after the treatment in all clinical parameters and electrophysiological parameters, suggest that all three methods might be used in the conservative treatment of diabetic carpal tunnel syndrome. However, injection of corticosteroids might be preferred when factors including the significant improvement obtained in EMG findings.

P146

THE USEFULNESS OF BAYLEY SCALE OF INFANT DEVELOPMENT IN THE DIAGNOSIS OF CEREBRAL PALSY

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INTRODUCTION

Developmental assessment has great significance in diagnosis and follow-up of various pediatric neurologic disorders. Bayley scale of infant development-second edition (BSID-II) is a diagnostic test rather than screening test. It has been used to reveal characteristics of high risk infants, such as low birth weight, prenatal alcohol and tobacco use. However, it has rarely been used to diagnose the specific disorder. Cerebral palsy (CP) is a disorder of movement and posture that results from non-progressive lesion of the immature brain, and shows delayed development. CP is a clinical diagnosis and its diagnosis can be supported by many other studies including developmental assessment. This study challenges the diagnostic ability of BSID-II for CP.

AIM

We evaluated the usefulness of BSID-II in the diagnosis of CP in the early child hood.

METHODS

We performed BSID-II for 117 children who were referred for neurodevelopmental treatment. Mental developmental index (MDI) and psychomotor developmental index (PDI) were obtained from BSID-II. After excluding 23 children without developmental delay and four with obscure diagnosis, 90 children with abnormal BSID-II were classified into CP or non-CP according to MRI and physical findings. The characteristics of MDI and PDI of BSID-II were evaluated and sensitivity and specificity of BSID-II in the diagnosis of CP were studied.

RESULTS

When comparing MDI and PDI in each group, both MDI and PDI were decreased similarly in non-CP, but PDI were decreased significantly more than MDI in CP. The CP with hemiplegic pattern showed high MDI and PDI compared to those with the other patterns. When abnormal PDI defined as lower than 85 was used as a diagnostic criterion of CP, sensitivity and specificity were 0.88 and 0.41. When abnormal PDI defined as 13 and higher than MDI was used, sensitivity and specificity for the diagnosis of CP were 0.50 and 0.84.

CONCLUSION

The characteristic findings of BSID-II in the CP could be used as a supportive diagnostic measurement. We should interpret carefully in the children with hemiplegic pattern because they had a near normal MDI and higher PDI than functional status of hemiplegic limbs.

P147

BORN AND GROWN-UP WITH SPINA BIFIDA

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There are issues of particular importance for specific age groups with Spina Bifida. Each lesion level group has a general functional expectation. Throughout the life span, it is important to keep in mind the overall picture of needs of the patient and family. The authors present a case report of a 15-year-old female child with spina bifida: Myelomeningocele (D12-L1 level), Hydrocephalus (with ventriculoperitoneal shunt), Arnold-Chiari II malformation and Neurogenic bladder and Syringomyelia (D1-D8). Several surgeries were performed to correct orthopaedic deformities. The patient has a high spinal lesion level (D12-L1), is unable to walk and uses an electrical wheel chair. She has a moderate cognitive delay, goes to a regular school and benefits from special educational support. She does intermittent catheterization on a regular basis. A regular follow-up has been performed, including medical assistance, physiotherapy, occupational therapy and assistive devices. The primary concerns during her growing are to identify and manage spinal and lower limbs deformities and prevent joint contractures, which negatively affect positioning, activity of daily living and mobility. Early orthopaedic attention and intervention to these deformities are essential. The broad spectrum problems encountered with spina bifida requires a multidisciplinary team approach in a comprehensive outpatient setting. The rehabilitation specialist has an important role in preventing secondary impairments, identifying problems and enhancing coordination of care among health care providers.

P148

FAT EMBOLISM SYNDROME

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CME, 24 years old, male, was admitted at São Teotónio's Hospital with a left tibial fracture, after an automobile accident (run over), in 23/04/06. The fracture was reduced and immobilized with cast. He was conscient, orientated and cooperative, refering localized pain in his left leg. 6 hours after admission, he begins temporo-spatial desorientation with progressive deterioration of his condition; a few hours later, he enters a state of coma (GS 8). 2 days later he initiates symptoms compatible with nosocomial pneumonia, and petequial lesions started to appear in his trunk and neck. Admitted in Intensive Care Unit with orotraqueal intubation and mechanical ventilation. Brain CT scan was normal. Brain MRI showed "several high signal focus in FLAIR, with a restrictive pattern in diffusion, confluent, disperse in corona radiata. These lesions are probably ischaemic, in the context of fat embolism". He initiated a rehabilitation programe with physiotherapy, occupational therapy and language therapy. Fat Embolism (FE) is the mechanical occlusion of small blood vessels by fat droplets. These clots are not only formed by fat, but also by platelets, fibrin, leukocytes and eritrocytes. Rarely, a massive fat embolism can evolve to Fat Embolism Syndrome (FES), with acute respiratory failure and neurological changes, that can vary from a simple state of anxiety to deep coma and death. The main causes for FE and FES are femur, tibia and pelvis fractures, hip and knee arthroplasties. The diagnosis of FES is clinical; its treatment is supportive, with mechanical ventilation and hemodinamical stabilization. When neurological changes appear, brain CT scan frequently is normal or reveals only non specific cerebral edema. MRI has a negative predictive value (if normal, it excludes FES). Corticosteroids have shown value in preventing FES, when administrated immediatly after admission of a patient at risk, and during 2-3 days. There is still lack of randomized controled studies to evaluate properly the contribution of other drugs in FES's treatment and prevention.

P149

FAHR'S DISEASE

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VMLLR, 46 years old, female, admitted at CMR-Alcoitão with sequels of ischaemic stroke – global aphasia and right spastic hemiparesis. She was hipertensive, smoker and medicated with oral contraceptives. Familiy history was irrelevant. Brain CT scan revealed "basal ganglia and nucleus dentatus of the cerebellum calcifications, compatible with Fahr's disease". Hemogram showed no abnormalities, and calcium and PTH were normal. Fahr's disease is characterized by non-atherosclerotic calcifications, bilateral and simmetrical, at the basal ganglia, nucleus dentatus of the cerebellum, cerebral cortex, subtalamus and red nucleus. It can appear at any age, but symptoms are more frequent between 30 and 60 years. Its physiopathology is not yet well known. Clinically, it can manifest with distonia, diskinetics, headaches, disarthria, spasticity, Parkinson-like symptoms, psychiatric manifestations. Fahr's disease is idiopathic; most cases have autossomical dominant inheritance, associated to the presence of locus IBGC 1 in chromosome 14q. It is necessary to exclude other methabolic or sistemic diseases that could be responsible for calcium depositions at those locations or similar symptoms. Brain CT scan is the most sensitive diagnostic imaging test. Treatment is symptomatic. Genetic evaluation to detect the presence of locus IBGC 1 is expensive and, if the only treatment available is symptomatic, perhaps its interest is mearly academic. On the other hand, there are some references in literature that some studies are being developed to demonstrate if patients with Fahr's disease have a greater risk of stroke; if this is proved to be true, these genetic tests may be of great value in the future.

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PRIMARY PROGRESSIVE APHASIA: PRESENTATION OF TWO CLINICAL CASES AND LANGUAGE THERAPY CHARACTERISTICS

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INTRODUCTION

Primary progressive aphasia (PPA) is a rare clinical syndrome characterized by progressive deterioration of language for two or more years with preservation of other cognitive functions. that differentiates it from the classical aphasic pictures caused by focal cerebral lesions or dementia.

CLINICAL CASES

We present two clinical cases with progressive word finding and naming difficulty for two years. They had no other cognitive or neurological complaints. There were no problems in activities of daily living. We applied the Boston Test Examination for diagnosis of aphasia and Mini Mental State Examination to rule out cognitive impairment. The SPECT (single photon emission computerized tomography) confirmed left hemisphere hypoperfusion. They both received speech therapy with special training in: recovery words, composition of phrases, and looking for compensatory techniques. There were a slowly but good evolution.

DISCUSSION

Progressive language impairment in patients with relative preservation of other cognitive functions is called primary progressive aphasia. The most important differential diagnosis is Alzheimer´s disease. SPECT is a valuable instrument in guiding the diagnosis. The treatment has been scarcely studied. Our two patients have been treated by stimulation of language with special attention in affected areas and teaching compensatory strategies for communication and they improved the results in Boston Test Examination. Because of that we recommend speech and language therapy in the early stage of primary progressive aphasia.

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RASMUSSEN 'S SYNDROME – A CASE REPORT

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Rasmussen's Syndrome is a extremely rare disorder of the central nervous system occurring in childhood. It is characterized by the development of intractable focal seizures, progressive hemiparesis and increasing intellectual impairment. Its aetiology remains unknown, suggested mechanisms include a abnormal immune response linked of viral infection or an independent autoimmune mechanism (anti-GluR3 antibodies). The diagnostic is clinical and complemented with MRI, EEG, SPECT, PET, CSF examination, serum anti-GluR3 antibodies and brain biopsy. The treatment is medical (anti-epileptic drugs, anti-viral agents, interferon, steroids, immunoglobulin and plasma exchange) and eventually surgical (functional hemispherectomy). We present the case of a 15 years old boy with a 6 years disease evolution that developed left hemiparesis and was submited to hemispherectomy. After surgery he underwent a specific rehabilitation program and achieved improvement in his functional status.

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NEUROFIBROMATOSIS 1 (VON RECKLINGHAUSEN`S DISEASE) – A CASE REPORT

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INTRODUCTION

Neurofibromatosis 1 (NF1) or Von Recklinghausen's disease is a rare autosomal dominant disease characterized by spots of increased skin pigmentation ("café au lait" spots) combined with peripheral nerve tumors (schwannomas and neurofibromas) and a variety of others dysplastic abnormalities of the skin, nervous system, bones, endocrine organs and blood vessels. The responsible gene is located on the long arm of chromosome 17. Tumors of the spinal nerve roots may compress the spinal cord and extend through the intervertebral foramens. The diagnosis is mostly clinical but, in difficult cases, biopsy of a neurofibroma can be required. Magnetic resonance imaging (MRI) and computed tomography are important in the diagnosis of these tumors.

AIM

to report the evolution and discuss the treatment of a case of neurofibromatosis 1 with multiple spinal cord neurofibromas.

METHODS

The authors present a case of a 40-year-old woman with neurofibromatosis diagnosed at the age of 18 years when an occipital plexiform neurofibroma was detected. Ten years later she began a progressively spastic tetraparesia predominantly at the right limbs, ataxia (gradually losing her capacity of gait) and mild urinary incontinence. Several spinal MRI were performed to clarify this situation.

RESULTS

Multiple spinal nerve tumors compressing the spinal cord and obstructing intervertebral foramens were detected at multiple levels. She underwent several surgeries. During this time the patient followed a rehabilitation programme. Currently she presents an improvement in muscular strength of the limbs and recovered gait capacity (with crutches).

DISCUSSION

although there is no treatment for the neurofibromatosis 1 disease, surgical removal of the tumors complemented with physical rehabilitation showed signs of quality-of-life improvement and, therefore, should be considered.

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REHABILITATION AFTER BILATERAL DEEP-BRAIN STIMULATION OF THE GLOBUS PALLIDUS IN GENERALIZED DYSTONIA

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Dystonia is a neurologic syndrome characterized by sustained muscle contractions, frequently causing repetitive twisting movements or abnormal postures. In generalized dystonia both legs and at least one other body region are involved. Severe forms of generalized dystonia respond poorly to medical treatment. Deep-brain stimulation is a recent reversible neurosurgical procedure that is an useful alternative treatment. It is performed by implanting an electrode into a deep nucleus in the brain which delivers controlled electrical pulses and is actually performed in our hospital. The main objective of this presentation is to emphasize the

importance of rehabilitation after this neurosurgery. The authors present the case of a 36 year-old male, with an history of childhood-onset of generalized dystonia with delayed motor skills and normal cognitive development. Different therapeutic approaches were used with limited results. Preoperatively, the patient presented generalized dystonia involving his neck, face, trunk and limbs with limitations on activities of daily life and only walking alone for short distances. The patient was integrated in a rehabilitation program shortly after the surgery which the results the authors pretend to discuss.

P154

NEUROMUSCULAR COMPLICATIONS OF CRITICAL ILLNESS: LITERATURE REVIEW

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HGSA

OBJECTIVE

To review the neuromuscular complications associated with critical illness, regarding the possible differential diagnosis and etiopathology associations, the appropriate diagnosis measures, and implications in management and prognosis.

DATA SOURCES

A review of articles published between January of 2000 and June 2006, identified through a B-ON database search on polyneuropathy, myopathy, critical illness, intensive care unit, neuromuscular disorders / weakness, tetraplegia.

SUMMARY OF REVIEW

Critical illness, defined as the systemic inflammatory response syndrome (SIRS), occurs in 20-50% of patients in major Intensive Care Units (ICU). Weakness of limb and respiratory muscle is increasingly recognized as a common occurrence in ICU, being the difficulty in weaning from mechanical ventilation an early sign. Excluding the pathologies that may have been the primary cause of ICU admission (Guillan-Barré syndrome, myasthenia gravis), this weakness usually is the manifestation of polyneuropathy and / or myopathy of the critically ill. Although patophysiology is not well understood, several conditions or drugs are reported to be involved in the development of this problem. The most frequent associations described are between SIRS / sepsis and polyneuropathy (CIP), and the use of corticosteroids and neuromuscular blockers and myopathy (CIM). Here lies the importance of a good clinical examination, electrophysiologic studies, serum creatine kinase titulation, and eventually muscle biopsy. Thus, early recognition of these conditions is important to prevent further damage removing the offending agent (if possible), and to establish the most appropriate management.

P155

RESTLESS LEGS SYNDROME IN A MAN WITH BACK PAIN AND RADICULOPATHY

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CMR-ALCOITÃO

INTRODUCTION

Restless Legs syndrome is a sensorimotor disorder characterized by an urge to move the limbs with or without sensations; worsening at rest; improvement with activity; and worsening in the evening or night. It may be primary or secondary. It is common, but often unrecognized and misdiagnosed.
Objective: To present a case study of a man with chronic back pain and unpleasant sensations in his legs who forced him at night to do some exercise before sleep.

METHODS

A sixty-two year old man with chronic back pain, unpleasant sensations in his legs that forced him to do some activity, and periodic limb movements in both legs that worst his sleep, came to us. These symptoms started at twelve years ago; he had some medication, but in the lasts months it became worst- it's hard to sleep, because the unpleasant sensations are worst, the involuntary movements are more frequent, sometimes in the arms and during the day. After the observation, T.A.C. and E.M.G., we conclude by a situation of restless-legs syndrome in a patient with chronic back pain and radiculopathy. He started hydrotherapy, medication, and behavioural measures.

CONCLUSION

Restless-legs syndrome is common, hard to diagnose, but yet treatable. It may be primary or secondary. Radiculopathy is not a well-established cause, but is associated to it.

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MOBILIZATION OF ENDOGENOUS PROGENITOR CELLS REGENERATES STRIATAL NEURONS IN HUNTINGTON'S DISEASE

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Ependymal overexpression of brain-derived neurotrophic factor(BDNF) stimulates neuronal addition to the adult striatum from endogenous stem and progenitor cells, while overexpression of the BMP inhibitor, noggin, by suppressing subependymal gliogenesis, potentiates this process. We previously noted that intraventricular delivery of adenoviral (Ad) BDNF and noggin specifically induced the recruitment of new GABAergic medium spiny projection neurons to the globus pallidus in normal adult rats. In the present study, we asked if concurrent overexpression of BDNF/noggin

might be used therapeutically in a transgenic mouse model of Huntingtoni¯s disease, the R6/2 mouse, in which medium spiny neuronal function is typically impaired. The mice were sacrificed the day after the BrdU injection for 4 weeks to tag new mitotic cells, and their brain sections stained for BrdU and either ÐIII-tubulin, DARPP-32, GAD67, enkephalin or substance P. AdBDNF/AdNoggin-treated R6/2 mice recruited approximately 300 BrdU+/ÐIII-tubulin+ neurons/mm3, that developed as enkephalin+ and substance P+ GABAergic medium spiny neurons, and extended fibers to the globus pallidus, as revealed by Fluorogold backfills. We also found that AdBDNF/Noggin-treated R6/2 mice injected at 4 weeks exhibited significantly better rotarod performance than R6/2s given either AdBDNF, AdNull, or untreated by 7 weeks after treatment (niÃ20/group) (p<0.05). Similarly, net open-field activity was significantly preserved in AdBDNF/Noggin-treated R6/2 mice compared to all controls, when assessed at 13 weeks of age (p=0.012; F=4.39). Moreover, AdBDNF/AdNoggin co-treatment significantly extended the survival of R6/2 mice (110.3 i¾ 3.3 days), compared to R6/2s treated only with AdBDNF (102.0 i¾ 2.2 days), AdNull (94.5 i¾ 3.2) or untreated (96.6 i¾ 2.7) (n=10/group) (p=0.011; F=4.45). These results indicated that both the performance and survival benefits associated with AdBDNF/Noggin treatment were dependent upon mitotic neurogenesis. Thus, BDNF and noggin induced striatal neuronal addition, delayed motor impairment, and extended survival in R6/2 mice, suggesting a new therapeutic strategy in Huntingtoni¯s disease.

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INTENSIVE CARE POLINEUROPHATY- CASE REPORT

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INTRODUCTION

Intensive Care Unit Polineurophathy (ICU) is an axonal motor-sensory illness with acute onset. It occurs in patients with multi-organ failure and sepsis, which usually need assisted ventilation. It is the most frequent cause of motor deficit in the intensive care units (ICU). Motor deficits are present in 25-36% of patients that stay for more than seven days at the ICU resulting in an important morbility and mortality. Needle electromiogram (EMG) and nervous conduction study allow an early diagnosis. ICU must be differentiated from Guillain Barré syndrome, metabolic, toxic and paraneoplastic neuropathies and critical illness miopathy. There is no specific treatment. Recovery may take months to years and is often incomplete (mainly in most severe cases).

CASE REPORT

Women, 29 years old, sports teacher. The patient suddenly began with thoracic pain, dry cough, diarrhea, vomits and abnormal behavior. Ten days later she went to the hospital, where she stayed for a couple of months in the UCI with sepsis and multi-organ failure (respiratory, renal, hepatic, haematological and cardiac). Seven days later she an asymmetric quadriplegia, mainly distal, with absent tendinous reflexes. The EMG showed severe asymmetric, motor-sensory, polineurophathy, probable due to ICP. She started a rehabilitation program, with successful results.

CONCLUSION

In this case the multidisciplinary team effort to aggressively treat sepsis and multi-organic failure, the early diagnosis of neurological deficit and the intensive and long rehabilitation program lead to complete recovery of neurological impairment, functional autonomy and integration.

KEY-WORDS

Intensive care, polineuropathy, multi-organic failure.

P158

PARAPLEGIA SECONDARY TO PSEUDOTUMORAL FORM OF MULTIPLE SCLEROSIS: CASE REPORT

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INTRODUCTION

Multiple Sclerosis is a common neurological disease and, in the majority of cases, is associated with accumulating disability. The prevalence of pseudotumoral forms of multiple sclerosis, particularly affecting the spinal cord, is very rare. We report a case of a 53-year-old man with a history of progressive paresis of lower extremities. Laminectomy was performed with open biopsy of the cord lesion and the histological result showed a demyelinated lesion consistent with multiple sclerosis. He was admitted in our rehabilitation unit and started treatment with interferon beta, while performing the rehabilitation program.

AIMS

Discuss the differential diagnostic procedures in subacute myelopathy and treatment strategies adopted in the rehabilitation setting.

RESULTS

Clinical and functional improvement of paraplegia and urinary dysfunction.

CONCLUSION

Pseudotumoral form of multiple sclerosis must be considered as a potential cause of subacute myelopathy presenting as a tumoral lesion in imagiological studies. The rehabilitation program should be included in the management of multiple sclerosis for the improvement of functional status.

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PSEUDOCHOREOATHETOSIS ASSOCIATED WITH A SPINAL CORD LESION

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CASE REPORT

The authors describe a case of a 73 years old female, with vascular epilepsy since 40 years old and no other risk factors. At admission (01/2006), she presented with sub-acute progressive incomplete tetraplegia (ASIA D) with left arm pseudochoreoathetosic movements, proprioceptive position sensibility abolished in the 4 limbs and totally dependent (in a wheelchair). CT scan and MRI revealed a lesion extending from the medulla oblongata to D2 (specially affecting posterior columns) and periventricular leucoencephalopathy, not affecting the basal ganglia. There was initial good clinical response to Prednisolone. The exhaustive study done suggests the existence of one only disease, with cerebral and spinal cord involvement, of inflamatory indetermined aetiology. After a rehabilitation program the patient recovered from a motor score of 40 to 80 (maximum of 100 on ASIA classification) but a pronounced proprioceptive ataxia remained, mainly in the left arm. The usual proprioceptive training programs were unable to improve her autonomy.

DISCUSSION

Chorea and athetosis are involuntary movements associated to basal ganglia lesions. The pseudochoreoathetosis is related to loss of proprioceptive sensibility that occurs at some point of its course from the peripheral nerves to the cortex. It has been described in patients with ganglion neuronopathies, lesions of the posterior columns of the spinal cord (myelitis, syringomyelia and glioma), thalamus infarction and parietal cortex injuries. The physiopathological mechanism postulated consists in failure of sensory-motor aferences integration in the striatum.

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INTRATHECAL BACLOFEN IN THE REHABILITATION OF PATIENTS WITH ACQUIRED BRAIN LESION AND SPASTICITY

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AIM

To study the motor and functional outcome in patients (pts) with spasticity of cerebral origin after a programmable baclofen pump implantation (BPI).

METHODS

Between 2001-2006, 94 pts with brain lesion were treated in our department. Six of them underwent BPI (Medtronic Synchromed II), 4 males and 2 females, 5 pts with traumatic brain injury (mean age:24.6 years) and one 57-year old patient with hypoxic brain lesion. The pts were evaluated on admission to the rehabilitation center [phase A], before BPI [phase B] and at least 3 months after it [phase C], having followed a rehabilitation program (RP). Average period between lesion and BPI:1.7 years. Average follow-up period:13.1 months. Average number of pump refills:4.6. We evaluated:1)the level of consciousness, using the Glascow Coma Scale [GCS], 2)the grade of spasticity, with the modified Ashworth scale, 3)motor skills, 4)swallowing ability and way of feeding, 5)urine continence, 6)difficulties of caregivers during ADL, 7)sleep disturbances.
RESULTS: 1) Mean GCS score in phase A: 7.3/15, B: 8.8/15 and C: 12/15, 2)mAshworth score decreased from 3 or 4 [A and B] to 1 or 2 in phase C, 3) pROM increased in all pts, voluntary motion improved in 4 pts and all pts improved head and trunk balance in sitting position, 4) All pts were supported by tube feeding on admission, 1 patient had accomplished oral feeding in phase B and 4 pts in phase C, 5)All pts had uninhibited voiding in A and B phases.In phase C one patient regained normal control and 3 pts had control during daytime, 6)In all cases, caregivers reported significant facilitation in performing ADL and 7) improvement of sleep disturbances.

CONCLUSION

Patients with acquired brain lesion and severe spasticity seem to have significant motor and functional improvement after BPI. In 2 cases with BPI in an early stage (during the first 12 months post lesion), the patients presented a higher rate of improvement. The proper time of BPI is determined by complications and RP during the acute and subacute phase.

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CONGENITAL LACTIC ACIDISIS, A CLINICAL CASE ON SCOLIOSIS APPOINTMENT

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Congenital Lactic Acidosis (CLA) caused by defects of the pyruvate dehydrogenase complex (PDC) form a group of inherited disorders in the context of metabolic diseases. Al the children are born with some residual enzyme activity since a complete deficiency of PDC is incompatible with life. Infants with 15% or less PDC activity normally do not survive the newborn period. The presentation of this disease is by nonspecific but common symptons of metabolic illness (lethargy, tachypneia,..), psychomotor delay, grown retardation, neurological disorders (hypotonia, seizures, ataxia), by others. The authors report a case of an

17 years old girl with neonatal CLA that has less than 15% of PDC activity that they observed in Hospital Curry Cabral. The patient has several spinal deformaties: lumbar hyperlordosis, thoracic hypokyphosis and lumbar scoliosis. They discuss the possible association between this entities, as well the treatment strategy to adopt.

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MULTIPLE SCLEROSIS AND NEUROPSYCHIATRIC SYMPTOMATOLOGY

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Neuropsychiatric symptomatology is frequently associated to the presence of either physical or cognitive limitations. These symptoms often occur in multiple sclerosis (MS) patients at all stages of the disease. Disorders of mood, affect and behaviour can be present among these patients. The purpose of this study was to characterize neuropsychiatric symptoms in our MS patients. Between 2001 and 2005, sixty eight MS patients (40 women) were observed at least 6 months after diagnosis. Age between 17 and 60 years. Median scholarship 4 years. The MS protocol included an anamnesis questionnaire (age, age at diagnosis, MS type, psychopharmacology and MS treatment) and SCL-90 scale was used as a screening tool for neuropsychiatric symptoms (a cut point of 1.5 was considered for all items). All patients were diagnosed according to McDonald diagnostic criteria (McDonald, 2003) and classified according to EDSS scale (Kurtzke, 1983). Most of patients had their diagnosis between 30 and 40 years (30%). Relapsing-remitting form was diagnosed in 72% of patients. Global severity index was present in 39% of the patients. Significant somatization symptoms were observed in 57% of the patients. Significant obsessive-compulsive symptoms were observed in 75% of the patients, depressive in 61% and anxiety in 43%. Hostility symptoms were present in 31% of the patients and psychotic symptoms in 16%. In the additional SCL-90 items, eating disorders were observed in 67% of the patients and sleep disorders were present in 82%. Thoughts of death were present in 33% of the patients. No statistical association was observed between neuropsychiatric symptoms and any of the studied variables, including disease progression or years of evolution. Severe neuropsychiatric symptoms were present in 39% of the patients. The symptoms ranged from obsessive-compulsive, anxiety to psychotic symptoms. The neuropsychiatric symptoms observed were not associated with the disease variables. General psychiatric is still mostly applied to neurological disorders such as MS, but not always be most effective considering such disorders. Future research is needed for neuropsychiatric sequelae add to the morbidity associated with MS.

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ARTISAN CONFECTION OF AN ASSISTIVE DEVICE TO FACILITATE DONNING STOCKINGS IN PEOPLE WITH DISABILITY TO TOUCH THE FEET

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In a good example of interdisciplinary team approach, the physiatrist and the occupational therapist cooperated and had an idea for a technical aid (assistive device) to facilitate donning stockings in people with disability to reach the feet with their hands. The artisan confection of such device is presented here in a sequence of photographs. Such aids exist in the sale market, but sometimes without immediate availability. We recycled an alcohol plastic bottle for the effect. Therefore, besides saving money, we were ecological.

P164

AN AID FOR PATIENTS AFTER BREAST CANCER SURGERY

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Breast cancer treatment usually includes surgery, radiotherapy, chemotherapy and hormone therapy. These therapies may cause several disabilities.
Our aim was to reduce the functional limitations and other clinical complications, through patients education. We created a leaflet about precautions, daily care, daily exercises and general information. On discharge day all the patients that underwent surgery are referred to Physical and Rehabilitation Medicine Service where they are observed by a Physiatrist, that handles them the leaflet. A Physiotherapist then assists the patient, teaching the right way to use the information in the leaflet. This education tool has been very well accepted by the patients and helps them to keep in mind the need for self care. In this group of patients educational intervention is very important and this leaflet is a simple way of improving patients knowledge, and comunication with the Physical and Rehabilitation Medicine Service team.

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NEUROBLASTOMA AND REABILITATION

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Neuroblastomas are the most common solid extracranial tumours in infancy.They constitute nearly 8% of all pediatric tumours.Seventy-five percent are diagnosed before age of two, and are more frequent in males. Most of these tumours are found in the abdomen(40% in the adrenal gland, 25% in sympathetic ganglia and 15% in the torax. The autors present a case report of a two year-old boy, who at age of two months presented with hipotonia of the inferior limbs.Three months

later he was diagnosed with mediastinal Neuroblastoma invading the medullary cavity, resulting in flacid paraplegia and neurogenic bladder.He is being followed as an outpatient in our department. We highlight the reabilitation program and the adequate aid prescribed for is phase of development and growth.

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MULTIPLE FRACTURES AS THE FIRST PRESENTATION OF MULTIPLE MYELOMA – CASE REPORT

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HOSPITAL SENHORA DA OLIVEIRA GUIMARÃES

Multiple myeloma is a malignant disease of plasma cells can manifest as lytic bone lesions that can cause hypercalcemia, pathologic fractures and spinal cord compression. The proliferation of plasma cells in the bone marrow may interfere with the normal production of blood cells, resulting in leukopenia, anemia, and thrombocytopenia. The aberrant antibodies that are produced lead to impaired humoral immunity, and patients have a high prevalence of infection. Overproduction of these antibodies may lead to hyperviscosity, amyloidosis, and renal failure.Treatment includes supportive treatment and chemotherapy. Patients younger than 70 years can expect a doubling of median survival to 5 years, a 20% chance of surviving longer than 10 years and a 50% chance of attainhing complete morphological and biochemical remission. Bisphosphonate control of bone disease is essencial. Biological treatments, such as thalidomide and bortezomib target the myeloma cell and the bone marrow microenvironment, which plays a crucial part in the disease's pathogenesis. We present a case of a 60 years old female, with history of hypertension, diabetes mellitus type 1 and thyroid disease. She was first evaluated in physiatric consultation in January 2004, in a context of hip fracture after a fall. In October 2004 she had spontaneous costal fractures, without any traumatic event. In November 2004 she is admited to our hospital for investigation of the clinical picture. On examination of the bone marrow it was found 55,9% plasma cells. Laboratory studies showed increased values of serum total protein and beta-2 microglobulin. Computer tomografy showed lytic bone lesions in the skull, femurs, ilíac bones and colapse of several vertebrae. The diagnosis was a IgA multiple myeloma. She was treated with chemotherapy, pamidronate and physiatric supportive treatment.

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MULTIDISCIPLINARY INTERVENTION FOLLOWING SURGICAL TREATMENT OF BREAST CANCER

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INTRODUCTION

Cancer can cause multiple impairment, activity limitations and participation restrictions. At present there is an important number of women with breast cancer, who suffer from functional deficits, persistent emotional and social distress and a reduced quality of life, which may be positively influenced by rehabilitation.

PURPOSE

As the intervention of the rehabilitation team is not always the most suitable and efficient, the authors propose a different form in the rehabilitation of women with breast cancer with the participation of medical doctor, physical therapist, occupational therapist, psychologist, social assistant. The main objective is the education and prevention of the main complications of mastectomy.

METHODS

Groups of 6-8 patients are followed up during 2 sessions per week for 6 weeks. The program of rehabilitation includes: exercise program, active mobilization, self-massage, relaxation exercises, respiratory exercises and multidisciplinary classes

CONCLUSIONS

After the program, the authors expect that these groups don't develop complications and/or know how to manage these situations, women will feel capable to return to theirs lives with much more confidence in the future.

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CANCER AMPUTEES REHABILITATION – EXPERIENCE OF PMR SERVICE FROM HUC

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INTRODUCTION

The survival rates for most tumors, including bone tumors, have been improving due to earlier detection and new treatment strategies. With the improved survival rate, come the long-term effects of disease and treatment. The ultimate goal of Cancer Rehabilitation is the achievement of the highest functional status possible and to improve the quality of life within the limits of the disease and its treatment and the patient's choices.

AIM

Caracterization of the cancer amputees followed at the Physical and Rehabilitation Medicine (PRM) Service from the Hospitais da Universidade de Coimbra (HUC) in Portugal.

METHODS

The authors approach Cancer Rehabilitation, with particular attention on cancer amputees, and share the experience of the amputees consultant of the PRM Service of HUC. RESULTS The results are presented in the form of graphics.

DISCUSSION

This clinical study was conducted in the PRM Service of HUC, by collecting the data from the file of the Amputee Consultation of this Service, until July/2005. 11, 46% of the total 1117 patients are cancer amputees. Most of the patients are male (60, 29%). A significant percentage consists of young people (up to 30 years old), but the majority of this patients are older than 50 years old (22, 79% are between 71 and 80 years old) The most frequent tumors are the osteossarcoma and bone metastases. It was obvious the predominance of lower limb amputation.

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DERMATOMIOSITIS

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JDL, male, 60 years old, initiated in February 2003 global muscle weakness, with simmetrical distribution, predominantly proximal, heliotrop skin rash located to the face and extensor surfaces, and muscle pain. As the clinic kept on deteriorating, with dysphagia, JDL was admitted at São Teotónio's Hospital in 08/04/03. At admittance he presented: -superior limbs: muscle strength grade 1 proximally, grade 4 at the hands -inferior limbs: muscle strength grade 1 proximally, grade 2 knees and ankles -nasogastric intubation -totally dependent on ADL -ambulation on a weelchair, dependent on a 3rd person -CPK 12280 U/L; LDH 2337 U/L; AST 935 U/L; ALT 334 U/L. He initiated treatment with Methotrexate 15 mg once a week and prednisolone 80 mg/day, and a rehabilitation programe that included physiotherapy and occupational therapy. At the present time, he is independent on ADL, with a muscular strength grade 4 proximally and 5 distally, and he returned to his professional activity (truck driver). Dermatomiositis is characterized by the presence of necrosis, degeneration and regeneration of muscle fibers, typical skin rashes, whitch may precede or follow a global muscle weakness, predominantly in shoulder and pelvic girdles. It can occur associated or not with other pathologies, namely neoplastic. Treatment with anti-inflamatory drugs is important to stop progressive muscle deterioration, but an adequate rehabilitation programe is indispensable to recover muscle strength and functional habilities.

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REORGANIZATION OF LANGUAGE AFTER FOCAL LESION IN CHILDREN: DATA FROM fMRI AND LINGUISTIC TESTS

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Abstract- Left hemisphere (LH) focal lesions acquired early in life can induce language re-organization in the undamaged right hemisphere (RH) or re-organization in the perilesional, undamaged tissue in the LH. This study addresses the anatomical correlates of language processing of such individuals. We present preliminary data of five children with a history of single left hemisphere CVA, who were diagnosed with non-fluent aphasia at onset (ages 7-17) and subsequently recovered. All underwent fMRI using three linguistic activating tasks during the chronic stage (at least 3.5 years post onset). Outcomes yielded predominant tendency of RH activations. Ten age & sex matched healthy right handers served as controls. The patterns of activation in the RH in patients showed a striking similarity with the LH patterns of the normal controls. This demonstrates that in patients with early LH focal damage, RH showing activations for language in brain areas homologic to LH regions involved in language processing under normal circumstances. Founded by the Israel Science foundation 1173/05

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JUVENILE LUMBAR DISC HERNIATION – CONTRIBUTION OF A CASE

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INTRODUTION AND OBJECTIVE

Lumbar disc herniation is an infrequent diagnosis in childhood and adolescence. The classical finds of lumbar root irritation occur less commonly than in the adult and additional signs such abnormal posture and gait pattern require additional suspicion. Our objective is to present a rare clinical presentation of lumbar disc herniation and to empathize the role of physical evaluation in Paediatric Rehabilitation.

MATERIAL AND METHOD

We report a 15-year-old patient, without trauma antecedent, complaining of localized left calf pain for the last 6 months. Gradual onset, mixed rhythm, without benefit with rest and oral NSAIDs therapy. On examination there were no inflammatory bland tissues neither weakness of the left leg movements. Back movements, mainly forward bending, were limited and lumbar lordosis was decreased. Straight leg raising test was leading to elevation of the whole trunk, but with no pain. Left lumbar, ischial and crural muscles were tight. Peculiar slow gait with flexion at both knees especially on left side. Imagiologic study was request: Plain radiographs of lower extremity joints were found within normal limits. Anteroposterior plain radiographs showed loss of lumbar lordosis. Magnetic resonance imaging (MRI) of the lumbar spine showed L4-L5 disc herniation. Conservative management with bed rest, heat, massage, analgesic and myorelaxant

therapy produce no clinical improve. Patient was submitted on L4-L5 microdiscectomy. We have re-evaluated the patient 6 weeks after surgery. There was pain relief. It persists tightness of the lumbar, ischial and crural muscles with limitation of forward flexion and abnormal gait pattern. We decided to prescribe a Rehabilitation Program with emphasis on hamstrings stretching exercises.

CONCLUSION

The clinical presentation of lumbar disc herniation in children and adolescents has some particularities. If abnormal gait is present in lumbar disc disease and persists after surgery we should consider thigtness of lumbar, ischial and posterior crural muscles.

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PREMIXED 50% NITROUS OXIDE AND OXYGEN FOR URODYNAMIC EXPLORATION IN PAEDIATRIC PATIENTS. PRELIMINARY STUDY

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INTRODUCTION

Premixed 50% nitrous oxide and oxygen is commonly used in children for a variety of diagnostic and therapeutic procedures. It's an analgesic gas administrated by inhalation, without loss of consciousness. Its use is safe and it's associated with anxious and amnesia. Bladder catheterisation in urodynamic exploration is commonly a cause of iatrogene pain especially in childhood disturbing the proceeding of examination

The aim of the study is to show the contribution of the premixed 50% nitrous and oxygen (Kalinox ®) in urodynamic exploration in children.
Material and method: transversal study including 10 girls mean aged 6 + 2.4, having undergone urodynamic exploration. Among the 10 girls, 7 had a previous painful experience of bladder catheterisation. The children had undergone 2 catheterisations: the first for voiding the bladder before the exam and the second for the urodynamic exploration. Kalinox® inhalation was administrated only during the catheterisations. Pain was evaluated by the medical team and the parents by a numeric scale from 0 to 10 and by the children by a face scale. The medical team satisfaction was evaluated by a verbal scale with for items (not satisfied to very satisfied). The side effects were noted.

RESULTS

All the children had well tolerated the oro-nasal mask and half of them had a self-administration. The average duration of administration was about 7 + 3.27 minutes. Dizziness (side effect) was noted in 4 children. The average of children's face pain scale was 2 + 3.27. Three children had a painful mime during catheterisation but remained peaceful. The average of medical team's numeric pain scale was 1+ 1.89 and that of the parents was 0.75 + 1.39.

DISCUSSION / CONCLUSION

Added pain associated to urodynamic exploration frequently hinders the progression of this exam. The use of nitrous oxide analgesia allows in the majority of case to control pain.

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MARFAN SYNDROME – A CASE REPORT

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The Marfan syndrome (MFS) is an autosomal dominant hereditary connective tissue disorder with variable expressivity characterized by abnormalities involving skeletal, ocular, and cardiovascular systems. In addition to these abnormalities, patient with MFS have also involvement of skin, integument, lungs and muscle tissue. Major cause of death include acute aortic dissection, aortic sudden death, which resulte from congenital vascular fragility. The incidence is estimated to be at least 1 case per 10,000 individuals in most populations. Timely diagnosis and adequate management can substantially decrease mortality in this condition. There are no guidelines for the rehabilitation care of these patients; the treatment should be directed to their disabilities. A case of Marfan syndrome in a 12-year-old boy is described by the authors. The diagnosis was made in the perinatal period. It had serious ocular, cardiac and skeletal alterations. He was referred to our institution ("Serviço de Reabilitação Pediátrica e de Desenvolvimento do CMRA") for postoperative scoliosis rehabilitation (dorso-lombar scoliosis submitted to posterior arthrodesis D8-L4, 30 October 2005) with the goal of achieving and maintaining the individual's maximum level of independence, cardiopulmonary reconditioning to the exercise, and functioning in the community. It had great intolerance to effort. The rehabilitation intervention was geared toward the problems and the needs of the patient and it was implemented by a multidisciplinary team of healthcare professionals. The rehabilitation program aims to improve tolerance to the effort, decrease disability, increase participation in physical and social activities, psychological accompaniment, management of antihypertensive therapy, and improve the overall quality of the life to the patient. These goal are achieved through patient and family education, exercise training, psychosocial and behaviour intervention. Rehabilitation program assists in improving mobility, strength and respiratory capacity, postural re-education, and helping him on the daily activities. The authors present this case not only for its rarity but also for its complexity in terms of medical and social approach.

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ROLE OF CHEMICAL DENERVATION WITH BOTULINUM TOXIN IN THE NEONATAL BRACHIAL PLEXUS INJURIES – REVISION OF 5 CLINICAL CASES

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INTRODUCTION

Brachial Plexus Injury (BPP) is a frequent pathology affecting the newborn child (0,5-4,4 /1000 full term births. It is usually transient, although a small percentage of children continue to have weakness leading to long-term disability from the injury. The mainstay of treatment for these children is physical and/or occupational therapy in concern with a regular home postural and management program. Selected few patients may benefit from botulinum toxin injections which is being used to avoid contractures of shoulder internal rotators.

OBJECTIVE

To describe the usefulness of Chemodenervation With Botulinum Toxin in the treatment of Neonatal Brachial Plexus injuries.

METHODS

Five children were injected, two of them already reinjected, in whom we blocked the muscles latissimus dorsi, teres major and also pronator teres, flexor digitorum superficialis, and adductor policis when a muscular inbalance favored those muscles.

RESULTS

It was observed in all patients an improvement in the full range of upper limb voluntary movements – specially abduction, external rotation of shoulder and forearm supine allowing a better shoulder placing and hand activity.

CONCLUSION

Besides the usefulness of botulinum toxin still is being studied, we conclude that this small sample of cases is a good indicator of its efficiency and it should be considered as an adjuvant in the rehabilitation of the most complex cases.

P175

POST-TRAUMATIC CLAVICULAR PSEUDARTHROSIS, A VERY RARE COMPLICATION OF OBSTETRIC FRACTURE – CLINICAL CASE

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INTRODUCTION

Post-Traumatic Clavicular Pseudarthrosis is a very rare complication of Obstetric Fracture. The differential diagnosis, including Congenital Clavicular Pseudarthrosis, is important because the latter has different clinics and treatment. The majority of post-traumatic lesions require operative treatment due to associated pain and restricted function.

AIMS

To present a very atypic evolution of Obstetric Fracture – Post-Traumatic Clavicle Pseudarthrosis; describing it´s clinic, diagnosis, evolution, treatment options and the importance of early diagnosis.

METHODS

Description of a 3 years old girl clinical case, with obstetric clavicular fracture and an apparent good evolution in her post-partum period, describing the evolution and Post-Traumatic Clavicular Pseudarthrosis diagnosis at her first year of life.

RESULTS

The complaints, clinical and imagiologic exams confirmed the diagnosis and the child was referred to Ortophedic Pediatry.

DISCUSSION

Although Post-Traumatic Clavicle Pseudarthrosis is a very rare complication of Obstetric Fracture, the knowledge of this pathology is important, allowing the majority of the cases being conducted to orthopaedic surgery, which gives a great importance to early diagnosis.

P176

STERNOCLEIDOMASTOIDEUM CHEMODENERVATION WITH BOTULINUM TOXIN IN A LATE STADIUM OF CONGENITUS MUSCULAR TORCICOLLIS

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INTRODUCTION

Congenital Muscular Torticollis (CMT) is a painless condition, usually presenting during infancy with a tight sternocleidomastoideum muscle causing the child's head to be tilted to the tightened side. It occurs in fewer than 0,4% of the newborns, significantly outnumbering orthopaedic, neurologic and ocular causes. Regimen of stretching exercises the most common form of treatment, with positive outcomes for over 90% of cases in the first year of life. However if it persists after 12-24 months of age, the child should be admitted to surgical treatment. Chemodenervation with botulinum toxin type A has recently been shown to be an effective intermediate method of treatment for more resistant cases.

AIMS

By presenting this case, the authors intent to show that Chemodenervation with botulinum toxin type A

may be an alternative to surgical treatment in late stadium of CMT.

METHODS

We describe a case of 22 months old, female child, with right major CMT, initially treated with conservative measures, including cinesitherapy – muscle chain technics. Once the clinical complaints persist at 18 months old, we decided for chemodenervation with botulinum toxin type A (30 units), in the right sternocleidomastoideum muscle, performed under anesthesia because of poor child cooperation.

RESULTS

4 months after injection of right sternocleidomastoideum with botulinum toxin type A the clinic evolution was very positive, gradually improving to sustained cervical balance. At this moment the child maintains physiotherapy program and periodic supervision.

DISCUSSION

The interest in using botulinum toxin type A to relax the tight muscle in CMT has increased lately. Our results with this method were good, showing that it may be a safe and effective alternative treatment for children who are unresponsive to a traditional regimen of physical therapy. More studies are necessary to definitively assess the role of botulinum toxin in similar cases.

P177

BLADDER REHABILITATION AND BOTULINUM TOXIN TYPE A IN MANAGEMENT OF DYSFUNCTIONAL VOIDING IN CHILDREN

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INTRODUCTION

Botulinum toxin type A (BTX-a) is reported as a potent muscarinic receptor antagonist which may reduce involuntary contractions of the detrusor responsible for neurogenic detrusor overactivity and may promote efficient bladder emptying in children with detrusor sphincter dyssynergia. However, there are little data concerning the BTX-a action on functional voiding disorders in neurologically normal children.

AIM

The aim of this study was to investigate the role of BTX-a and bladder rehabilitation in management of children with dysfunctional voiding.

METHOD

Nine female children with dysfunctional voiding and recurrent urinary tract infections (5-11 years old) were included into the prospective clinical study. All children were treated previously with standard urotherapy and alpha-1 adrenergic blocking agents without any clinical improvement. On entrance into the study each patient underwent a history and physical examination, voiding diary, urinalysis and urine culture. BTX-a (Dysport) in a dose of 500 units was injected transperineally into the external urinary sphincter. Bladder rehabilitation (timed voiding, hydratation, optimal posture during voiding) was introduced two weeks after the BTX-a treatment. Uroflow studies with ultrasound residual urine volumes were obtain before and 2-8 months after the treatment. All children have been tested before and six months after the treatment using empirically designed International Reflux Study modified questionnaire.

RESULTS

After the treatment statistically significant differences regarding the postvoid residual urine and uroflowmetry parameters were not found. However, significant symptom score improvement was detected six months after the treatment, being decreased by 5 versus 18 ($p<0.01$). No major side effects occurred following Dysport injection.

CONCLUSION

BTX-a and bladder rehabilitation improved urinary incontinence and urinary tract infections which is in discordance with only slight improvement of uroflowmetry parameters. These results raise hope of keeping high-risk children with bladder dysfunction under conservative control longer.

P178

MUSCULOSKELETAL DISORDERS IN CHILDREN AFTER PROLONGED USE OF COMPUTERS

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AIM

There is an increasing number of children visiting outpatient clinics and complaining for musculoskeletal disorders due to prolonged computer use. The aim of this study is to identify their etiology and propose possible ways of early intervention.

MATERIAL AND METHOD

Twenty-two young patients, 10 to 15 years old were studied. All of them were using computer or electronic games more than 2 hours per day. All patients fulfilled a questionnaire concerning musculoskeletal disorders and ergonomics sych as: the position of the screen, the keyboard, the chair etc.

RESULTS

All patients (14 males, 8 females) reported occasionally, musculoskeletal disorders. Sixteen out of 22 were over weighted (BMI>85). Pediatricians suggested only to 3 patients (BMI>95) to loose weight with special diet and physical exercise, but they did not suggested biochemical tests. Carpal tunnel syndrome was diagnosed in one out of 22 children. Neck pain reported 88% of the children and VAS score varied from 3.9 to 7.2 (mean 4.7), even though it seems that its use with children does not have the same reliability as with adults. No ergonomic awareness was reported and only 3 out of 22 children were informed from their parents about the ergonomics dealing with the computer use.

CONCLUSION

Ergonomic use of computers and allied devices should start from the very early years of life to prevent musculoskeletal disorders. Doctors and especially pediatricians must inform both young patients and their families about the correct use of this type of devices, In addition further research is needed in order to investigate other illnesses related to computer use.

P179

HIPOPLASIA/APLASIA OF THE ANTERIOR CRUCIATE LIGAMENT – CASE REPORT

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A deficiency of the ACL can be congenital or caused by trauma. Congenital aplasia or hipoplasia of the ACL is a very rare condition, with a prevalence of 0,017/1000 live births. It is occasionally reported with other anomalies such as congenital dislocation of the knee, congenital short femur and congenital absence of the menisci. There are few cases reported in the actual literature. The authors will present a case report about a five years old female that at the age of 3 months was send to Pediatric physiatry with the suspicion of a developmental disability. At the clinical examination she had a generalized muscular hypotonic. In the follow up the developmental disability was not confirmed, all exams were normal and she developed in a normal way. At 12 months year old it was detected at bipodal stance, a recurvatum of the knee with valgum deviation along with a lower limb muscular atrophy. The knee examination showed anteroposterior instability and a MRI to the knee was done. It confirmed the inexistence of the ACL, without any other changes. Now, after a rehabilitation program, she presents a functional stable knee and does independent gait.

KEY WORDS

Hipoplasi/Aplasia, Anterior Cruciate Ligament (ACL), Rehabilitation

P180

RECURRENT PATELLAR SUBLUXATION IN TWO DIZYGOTIC TWINS: CLINICAL CASE

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recurrent pattelar subluxation is a common condition in adolescence, especially in girls, and can be associated with a variety of developmental abnormalities such as generalized or localized joint laxity, pattela alta and throclear dysplasia. Although the symptoms can be managed conservatively, sometimes surgery is necessary, usually postponed to the end of bone growth. The authors present a case of two 12 year old girls, dizygotic twins, with a history of knee pain and recurrent episodes of patellar subluxation. They also have a positive familiar history for the same pathology. The patients have been managed conservatively on physical treatment for three years with excellent results, even allowing one of them to join the practice of futsal.

P181

THE EFFECT OF PNF TRAINING ON POSTURAL CONTROL – CASE REPORT

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INTRODUCTION

It is well-known, that the postural control is impaired in the elderly, but it can be improved by several special trainings.

AIM

The goal of this study was to determine the time-course effect of the PNF training on the postural control.

METHODS

An 80-year-old woman with balance disturbances was treated for three months by using Proprioceptiv Neuromuscular Facilitation (PNF). The aim of the treatment was to increase the postural stability by using rhythmic stabilisation, stabilising reversal and to strengthen postural muscles by applying combination of isotonic and dynamic reversal techniques. Functional Reach Test (FRT) and posturography were performed to characterize her motor capacity and postural control. The COP displacement was quantified in Romberg position by using a single force platform under two visual conditions (eyes open and eyes closed). The sway path was calculated in anteroposterior (AP) and mediolateral (ML) directions.

RESULTS

The FRT showed significant improvement in the stability limit immediately after the training, but it decreased one year later and it approximated to the baseline

values. The sway path in ML direction showed significant decrease one year after the training compared with the values measured immediately after the training period, whereas it increased slightly both with and without visual input in the AP direction.

DISCUSSION

The results have shown that the PNF training was an effective method for improving the postural control in this old woman. Our data also demonstrated that the effect of training was different in the AP and ML directions. This might be due to the fact that contrary to the ML direction, there are an increased number of alternative strategies which can be used to cope with instability in the AP direction and the differences may be masked by variations in the control strategy adopted.

P182

PRESERVATION OF POSTURAL REFLEX MECHANISMS IN GERIATRIC PATIENTS BY APPLICATION OF KINESITHERAPY

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System of the control of posture consisting of somatosensor systems (vestibular, visual system) and motor system (muscular and postural tonicity, motor strategies) loose its function at the old age. Loss of the postural reflex mechanisms correlates with elderly people's incidents of falling. In our study a group of 30 patients (10 males and 20 females), aging 65-85 was observed. Tests of static balance include evaluation of body posture in resting position. Tests of dynamic balance evaluate patients' raising in the upright position. With all the patients, changes were recorded both in static and dynamic balance. Exercises for balance and body posture and for the increase of muscle strength, flexibility and coordination were applied in the period of one month. The subsequent repeated analyses of static and dynamic balance showed a significant improvement in both static and dynamic parameters. The exercises lead to increase of muscle strength of the old people, more as a result of neural effects than of muscle hypertrophy. If practiced regularly throughout lifetime, the exercises can slow down loss of postural reflex mechanisms or even improve them.

P183

DIABETIC FOOT CLINIC IN THE PHYSICAL MEDICINE AND REHABILITATION DEPARTMENT

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INTRODUCTION

One of the most serious complications of diabetes mellitus is lower limb amputation. In Portugal there are 1200 no traumatic lower limb amputations every year. Foot ulceration is sought to affect 15% of all diabetic patients at some stage of their life. A proper screening for foot problems, foot care education and injury prevention can reduce the incidence of foot ulceration and lower limb amputation. In Garcia de Orta Hospital a diabetic foot clinic was organized by the PMR Department with the participation of the Endocrinology Department. Management guidelines were developed according to risk determination (history of plantar ulcer, protective sensation with 10gm Semmes-Weinstein monofilament, foot deformity/plantar high pressure).

AIM

To present a descriptive analysis of the diabetic foot clinic.

METHODS

A database was created on Windows Access software, from foot clinic day one. The data included patient identification, sex, age, diagnosis and treatment, foot observation and risk category, prescribed insoles and shoes and their cost.

RESULTS

563 patients were seen from February 2002 until June 2006 (547 diabetes 2 and 16 diabetes 1). Sex distribution: 272 female and 291 male; mean age: 65,6 (21-90 years of age); diabetes treatment: insulin in 271 patients, insulin + oral hypoglycaemic agents in 50 patients, oral hypoglycaemic agents in 214 and diet only in 8 patients. Foot deformities were observed in 233 patients, plantar callus formation in 299, history of foot ulcer in 161 patients. There were 110 patients in the risk category 0, 223 were in category 1, 95 in category 2 and in 135 patients the risk category was ii 3. According to the management guidelines patients with risk 0 received education on foot care and footwear selection; for patients in category 1 those measures were implemented plus prescription of soft insoles; for patients with a risk ii 2 prescription of footwear and custom-molded insoles were usually necessary. Every patient received education on foot care and footwear. Molded insoles were prescribed in 240 patients and depth or custom footwear in 234 patients.

DISCUSSION AND CONCLUSION

The main objective of a diabetic foot clinic is to reduce the number of lower limb amputations. The effectiveness of the diabetic foot clinic is due to be assessed at long term. So far, in Garcia de Orta Hospital the data shows a reduction in lower limb amputations in 2005 (25 amputations, compared to 36 in 2004 and 29 in 2003).

P184

CERVICAL SPINAL CORD INJURY IN FOOTBALL PLAYERS

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INTRODUCTION

Sport and recreational activities are the third commonest causes for spinal cord injury amongst patients admitted to the North West Regional Spinal Injuries Centre, Southport, United Kingdom. We report two male football players, who sustained injury to cervical spinal cord and developed tetraplegia as a direct result of the sport.

CASE 1

21 year old, fit and healthy football player was tackled from behind while running with the ball. He lost his balance and landed on his head. This resulted in a burst fracture dislocation of C5/C6 associated with immediate onset of complete tetraplegia.

Case 2

24 year old, fit and healthy football player collided, head first, with his own team goalkeeper. The accident happened as he was running full speed back to his net and dived for a cross ball. As he was in full extension, heading the ball away, his forehead collided with the thigh of the goalkeeper, causing hyperextension to the neck. He immediately felt severe pain to the back of his neck, felt pins and needles in his arms, and was unable to move all four limbs.

DISCUSSION

Injury to cervical spinal cord is known to occur in certain sports. In rugby for example, over a period of three decades the rules of the game have been changed in order to minimise the risk of neck injury. What is not appreciated is that playing football, a very popular sport, may cause injury to the cervical spinal cord with dire consequences. Professional football players are likely to have adequate insurance, which will enable them to get reasonable compensation in case of serious injury with life-long paralysis. However, semi-professional football players, as exemplified by case number 2, do not usually have adequate insurance to cover serious and permanent disability. Patient number 2, as we understand, was entitled to a maximum compensation of one thousand pounds only. Patients with C5 tetraplegia require physical assistance for their activities of daily living, for their entire life. These two cases raise another important question. Should there be a review of the rules of the game and refereeing? Should players be discouraged to use their head while playing football? Many people may not be aware of the potential danger of neck injury when the players attempt to head the ball. We should remember that during evolution, nature did not devise our neck bones for this purpose.

P185

REHABILITATION RESULTS FOLLOWING LIGAMENT PLASTIC SURGERY LCA

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The objective of this paper is presentation of the results of medical rehabilitation after ligament plastic surgery ACL, comprising 32 subjects treated in Special Hospital "Ribarska Banja" during the year 2005. Male patients (90,6%) of average 26,6 age with the youngest subject being 18 and the oldest one 50 years old were mainly included. The injuries occurred in recreational sports activities (78,1%) and about 19% were operated on within first two months with more than a half in the first year following the injury. Partial meniscectomy medially was done in 56,3% of patients simultaneously with ligament plastic surgery LCA. Considering the interval between the operation and arrival to our hospital it is in average two months. The treatment took 20 days in average. Therapeutic physical procedures covered kinesis, working and hydro therapy were applied in all patients, in 56,3% IMP and IFS, and in 21,9% kryo therapy. Most of the subjects (63,3%) have discarded walking aids in the second month following the operation. Treatment results were estimated by observing objective parameters (swelling, painful PFK reduced patellar motion, bowels evacuation ability, proper walk, measuring the extent of operated knee motion and m. quadriceps muscle strength according to MMT) as well as subjective difficulties (pain, weakness or poor control of operated leg, troubled walking the stairs...). After the treatment improvement has been achieved in all subjects, especially regarding reducing swelling and pain, increasing operated knee joint active movement and more regular walking, decreasing subjective feeling of operated leg poor control and its muscle strength increase.

P186

INCIDENTAL FINDING OF ATRIAL FIBRILLATION IN TETRAPLEGIC SPORTSMAN

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ABSTRACT DESIGN

Case report of atrial fibrillation in asymptomatic tetraplegic athlete diagnosed on routine pre-op ECG.

OBJECTIVE

To raise awareness that spinal cord injured patients may develop cardiac arrhythmias without any obvious underlying cause or discernable symptoms.

CASE REPORT

37 year old, C6 complete (ASIA A) tetraplegic following a RTA in 1996 was diagnosed with AF during pre-operative routine ECG for elective replacement of intrathecal baclofen pump. There were no symptoms, no recent history of infection or alcohol excess and no past history suggestive of underlying cardiac pathology, as his previous ECG, echocardiography, thyroid function test and electrolytes

were normal. After anticoagulation, cardioversion was successfully carried out after failure of treatment with amiodarone and flecainide for 4 months. Currently he is in sinus rhythm, not taking any medication and resumed normal physical activity and competitive sports.

DISCUSSION

Spinal Cord Injured may be at increased risk of developing AF. This form of arrhythmia will probably have a negative affect on cardiac performance and if left untreated can increase the incident of cerebro vascular events that could further impair the patient's functional status and reduce their life expectancy.

P187

EFFECTS OF MAGNESIUM ON EXPLOSIVE STRENGTH IN ELIT SOCCER PLAYERS

RIO, Carlos

Magnesium is a major mineral involved in the reaction of more than 300 enzymes in the body. The majority of magnesium (60%) is found in the bones, others are found inside cells of body tissues and organs. Magnesium is required in a long list of body functions. It is necessary for the nerve/muscle function, regulation of body temperature, DNA/RNA synthesis, detoxification, energy metabolism and the formation of healthy bones and teeth. It is also vital for cardiovascular healthy. It helps thin the blood, relaxes blood vessels, lessens the risk of heart attacks and moderately reduces blood pressure. Sixty four male elite portuguese soccer players, mean age 25,41 years old (Min.= 19; Max.= 33); height 173,82 cm (Min.= 166,00; Max.= 185,00) and weight 71,17 Kg (Min.= 70,39; Max.= 76,39), voluntarily participated to the study. Each subject was instructed on the protocol and signed an informed consent to participate to the experiment. Anthropometrical methods were used in the evaluation of body composition and Wingate test for anaerobic capacity. Subjects were divided into two groups: Group A with 6 tablets (2+2+2/day) of 500 mg lactate of magnesium each one; Group b with 3 tablets (1+1+1/day). Media at the beginning (iºBeforei±) and at the end (iºAfteri±) of 3 weeks treatment: Six tablets/day – Weight (Kg) B 71,17; A 70,39 (ii 0,78); Wingate test (W/cm2) B 9,31; A 10,41 (iü 1,10); Body Mass Index ¨C BMI – B 23,49; A 23,24 (iý 0,25); Body Fat Mass (%) ¨C BFM – B 11,50; A 11,88 (iü0,38); Body Muscular Mass (%) ¨C BMM ¨C B38,26; A 37,39 (iý 0,87) decrease of media weight, BMI, BMM and increase of capacity power, BFM. Three tablets/day – Weight (Kg) B 70,44; A 69,90 (iý 0,54); Wingate test (W/cm2) B 9,40; A 9,09 (iý 0,31); Body Mass Index ¨C BMI – B 23,31; A 23,13 (iý 0,18); Body Fat Mass (%) ¨C BFM – B 9,25; A 9,54 (iü0,29); Body Muscular Mass (%) ¨C BMM ¨C B 41,77; A 40,37 (iý 1,40) decrease of media weight, anaerobic power, BMI, BMM and increase of BFM.

KEY WORDS

Magnesium; Anaerobic capacity

P188

CHILD BURN REHABILITATION: ABOUT A CASE REPORT

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Burn injury presents a special challenge with respect to early management and rehabilitation. For patients who are hospitalized for burns, rehabilitation begins very early and it's a fundamental part of their care. The goals of rehabilitation are to achieve wound healing, functional recovery, and good cosmetic results. The authors present a case report of a 12-year-old male child that suffered a high voltage electrical discharge, producing 2nd and 3rd degree burns, involving 50% of body surface, including the trunk, left upper and left lower limbs. He was admitted to the intensive care unit on 25/01/2006 and transferred to the surgical unit 2 months later. While in hospital he was submitted to the following procedures: fasciotomy, escharotomy, debridement and wound closure by skin grafting. The patient was closely monitored by a rehabilitation specialist with a daily rehabilitation program, consisting in positioning, splinting, ambulation, pressure therapy and exercises, according to the different evolutive phases of scaring and medical patient condition. He was discharged 4 months later. Currently he continues treatment in terms of a comprehensive burn rehabilitation program with medical assistance, physiotherapy, occupational therapy and the use of compressive material with silicon sheets. He has had a favourable evolution of the scar with little functional limitation. The management of burn injured patients involves communication between the different specialities, with an important role played by the Physical and rehabilitation medicine specialist.

P189

RESPIRATORY DYSFUNCTION IN GUILLAN-BARRÉ SYNDROME

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Respiratory dysfunction in Guillan-Barré Syndrome Guillain-Barré syndrome (GBS) is the most common cause of nontraumatic acute paralysis in industrialialized countries. The combination of multiple clinical factors culminates in Respiratory failure in up to 30% of the patients. Progression to mechanical ventilation it is more common in patients with rapid disease progression, bulbar dysfunction, bilateral facial weakness, or dysautonomia and pulmonary function tests like vital capacity, maximal inspiratory pressure, maximal expiratory pressure should be measured. The early recognition and treatment of respiratory complications in GBS could reduce the morbidity and mortality of this condition.

Good clinical outcome depends to a large extent on the anticipation and management of ventilatory failure and its complications. The object of the authors with this work is to discuss respiratory and others clinical features associated with progression to respiratory failure.

P190

CLINICAL OUTCOMES AFTER CARDIAC REHABILITATION PROGRAMME AFTER MYOCARDIAL INFARCTION

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INTRODUCTION

Cardiac Rehabilitation programmes (CRP) improve functional capacity and quality of life after an acute myocardial infarction (AMI).

AIM, METHODS

We present a prospective study with 103 patients who enrolled in our CRP, eight week, 3 times/week, as external patients. It include 1 hour of physical exercise, changes in life style with educational lessons and psychological approach. Patients made an ergometry (Bruce protocol) before and after the programme. We analyze the first year post infarction.
Results. Mean age 48 years. Gender: 92% male. Time to enrol in the CRP from the injury: mean of 6 weeks (1-48). Cardiovascular risk factors are: 71% smokers, 57% hypercholesterolemia,35% hypertension, 25% diabetes,18% stress, 6% cocaine addiction. Most frequent localization of the AMI were: 32% postero inferior;28% anterior. 49% of the patients were medicated with fibrinolísis (77,5% RTPA;22,5% TNK). This medication was used outside the hospital in 25%. 73 patients needed a catheterism. All the patients used one or two antiplaquetelent drugs (acetyl salicylic acid, clopidogrel), one statins and beta blockers. Others added to this treatment, angiotensin enzyme inhibitors (30,2%) or ARA II(9,3%). Coronary risk was: 74% low, 20% medium, 6% high. 21% had erectile dysfunction. We obtain statistical significance in functional capacity (METS pre 9,6; after 11,5) p <0,001. Total Cholesterol, LDL and weight reduction level were no significant (p 0,07 ; p 0,08 and p 0,9 respectively).70% of the patients were non smokers one year later. Osteomuscle complications were low (11,7% low back pain, 9,8% shoulder pain).26,4% of the patients suffered from at least one angina pectoris pain and 6,6% suffered from another AMI. 77% of the patients return to work (mean: 27,5 weeks). 80% of the patients made more than 5 hours of exercise and the end of the phase II and 60% and the end of the first year.

CONCLUSIONS

CRP helped the patients to improve their functional capacity, improving their knowledge about how to live in a healthy way and to make daily exercises.

P191

ROLE OF REHABILITATION IN PROGNOSIS OF PATIENTS AFTER MYOCARDIAL INFARCTION

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INTRODUCTION

Important criteria of efficacy of multimodal treatment such is rehabilitation, are mortality and morbidity of patients after myocardial infarction (MI).

Aim of this study was to evaluate the role of organized rehabilitation and physical training (PT) in patients with myocardial infarction by determining mortality and morbidity of those patients.

METHOD

The prospective clinical study involved 230 patients after MI. Patients were divided into two groups: group A (180 patients) had organized intrahospital, posthospital and prolonged rehabilitation at home, that consisted of individually adopted PT during 48±6.4 months. Intesity of physical training was recommended to be 70% of maximal hearth rate obtained safely at exercise test. Control group (50 patients) did not have organized rehabilitation or PT. The first clinical examination and exercise test was performed for patients of group A after posthospital rehabilitation 129±12,8 days, and for control group patients after 191±16,4 days. In both groups the last control was performed after 48±6,4 months of myocardial infarction. We studied the percent of dead rate and reinfarctation during the period of four years in patients after myocardial infarction.

RESULTS

In group A patients during the follow-up period of 48 months, death rate was 5,5% and 7% of patients had reinfarctation. In control group death rate was 12% and 15% of patients had reinfarctation. The difference between two groups was not statistically significant, so we calculated the efficacy. The efficacy was 54% suggesting that organized rehabilitation with PT probably reduced the death rate by 54% and reinfarctation by 56%.

CONCLUSION

Long-lasting organized rehabilitation with PT is useful for reduction of mortality and morbidity of patients with MI. Multicentral studies with larger groups of patients are needed for definitive conclusions.

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CARDIAC SHOCK-WAVE THERAPY FIRST EXPERIANCE

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INTRODUCTION

We used new treatment modality for patients with coronary arteries disease (CAD) – cardiac shockwave therapy (CSWT) – for the first time in the Eastern Europe. CSWT is a therapy with the series of focused shock waves impacted to the myocardium segments with reversible ischemia. Shock-wave generator was positioned by ultrasound scanner. Sock-wave impact was applied in early diastole phase with ECG control.

MATERIALS AND METHODS

Thirteen patients (11 men, 2 women) received full course of treatment. Mean age was 59.6±6.9. All the patients had myocardial infarction in anamnesis, all had angina. Mean CAD class was 2.2±1.2. Before and after the treatment all was examined with stress-echocardiography and cardiopulmonary exercise test (CPET). Patient filled Seattle angina questionnaire (SAQ). After stress-echocardiography there were determined reversible ischemia zones (mean contractility index 4.6±1.7). Therapy was last for 9 weeks in 9 sessions (3 sessions in 1, 5 and 9 week). Every session included 300 shock-wave impulses (totally 2700 impulses). Treatment tolerance was good, there were no complications.

RESULTS

Mean CAD class after treatment was 1.5±0.8). Mean maximal oxygen uptake increase was 18.5% (11.9±2.2 and 14.1±2.8 ml/kg/min). Mean contractility index after treatment 3.2±1.5). There was decrease in physical activity limitation (by SAQ): 42±11 and 56±13 before and after the treatment.

CONCLUSION

Our first experience showed hopeful results for patients with CAD. It is non-invasive and safe for patient. So this method can be the new branch in the cardiac rehabilitation. We continue our study and intend to include more patients and evaluate the results less severe patients. And it is necessary to study the remote effects of this treatment.

P193

ENHANCED EXTERNAL COUNTERPULSATION EXPERIENCE IN REHABILITATION TREATMENT OF HEART FAILURE PATIENTS

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The enhanced external counterpulsation (EECP) is a new treatment method for the patients with coronary arteries disease (CAD) and heart failure (HF). ECG-controlled compression-decompression of the lower extremities by means of pneumatic cuffs lasts for 1 hour. Twenty five patients (21 men, 4 women) have passed the complete course of treatment (35 procedures by 1 hour) in our Center with TS3 system of Vasomedical, Inc company. Mean age was 57.2±8.4. Twenty patients (80%) had myocardial infarction in the case history (7 of them had 2 myocardial infarctions). Eight (32%) patients had HF class I, 12 (48%) class II, 5 (20%) class III NYHA. During treatment there were no complications, procedures tolerance was good. Before and after the course of therapy all the patients were examined by echocardiography, cardiopulmonary exercise test (CPET), non-invasive computer hemodynamic examination by method of volumetric compression oscillometry (VCO), heart rate variability analysis (HRV). After EECP course all the patients marked significant improvement in physical activity tolerance, and also decrease of requirement of drug therapy. By CPET time to stop increase was 25% (445±133 s and 556±171 s before and after accordingly), increase in the maximal oxygen consumption was 12% (23.27±6.02 ml/kg/min and 26.02±8.8 ml/kg/min accordingly, p<0.05). By results of VCO theincrease in systolic index (+16% mean, 44.38±9.20 and 51.38±13.43 ml/m2) and cardiac output (+8% mean, 2.72±0.33 and 2.94±0.69 l/m2) were registered, but were not significant (p>0.05). According to HRV there was the 81% increase in SDNN (standard deviation) – 24.50±9.26 and 44.25±13.69 ms, 189% increase in RMSSD (root of the mean of the sum of the squares of differences between adjacent RR intervals) – 11.00±3.37 and 31.75±9.11 ms, 162% increase in total spectrum power – 1304±956 and 3412±2089 ms2(p<0.05). This may be one of ways that EECP reduces mortality from sudden death in these patients. After EECP treatment following distribution of patients by HF class was seen: 12 (48%) patients had class I, 7 (28%) – class II, 1 (4%) – class III NYHA, 5 (20%) had no HF. Positive of the EECP use define necessity of the further studying of effects, mechanisms and the delayed results of HF patients treatment. EECP is a very interesting and perspective method of severe cardiac patients treatment and may be used wider in clinical practice of our cardiology and rehabilitation.

P194

EFFECT OF INTERFERENCE CURRENT ON MYOFACIAL PAIN SYNDROME: A PRELIMINARY STUDY

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INTRODUCTION AND AIM

Myofascial pain syndrome (MPS) is a chronic local or regional musculoskeletal pain disorder that may involve either a single muscle or a muscle group. The standard treatments include medications, physical therapy and exercise. Vacuum-Interference Current (VIC) is one of the physical modalities that can be used for this condition. The purpose of this study is to investigate the effect of interference current on MPS.

METHODS

Seventeen patients were included in this double-blind controlled randomized prospective study. All patients met American College of Rheumatology criteria for MPS. Patients were randomized into two treatment groups as vacuum alone and VIC groups. All patients were received their therapy for ten sessions. The subjects were assessed with Visual Analogue Scale (VAS), algometric measurement, Patient Global Assessment, Physician Global Assessment and Beck Depression Scale at baseline and immediately after treatment.

RESULTS

The mean age of the patients were 43.5±15.6 and 35.2±12.5 in vacuum alone and VIC group, respectively. There was a significant decrease in VAS scores, patient global assessment and physician global assessment scores before and after treatment in both groups ($p<0.05$). The vacuum group had a better pain status at baseline according to the algometric measurement. The difference was statistically significant ($p<0.05$). In VIC group the algometric scores were relatively good after treatment. However, this result is not statistically significant ($p>0.05$).

CONCLUSION

As a result, we found that there was a significant improvement in both vacuum and VIC groups in terms of pain level. The study results can be changed in increasing number of subjects.

P195

EFFECTS OF HEAT AND COLD IN SPASTICITY OF HEMIPLEGICS POST-STROKE

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INTRODUCTION

The use of thermal agents in hemiplegic patients has been a case of intense debate between some authors. The effects of prolonged used of this agents can benefit the motor function of this patients.

AIMS

The main purpose of this research is to evaluate, analyse and discuss the effects of thermal agents, heat and cold respectively, in the muscle tone and motor function of the affected upper body of hemiplegics post stroke (vascular origin) with more than twelve months of evolution, assessing, simultaneously, the efficacy of each agent and comparing to a control sample.

METHODS

Twenty one patients where submitted to the following research: Time 0 (T0) – randomization in three groups: A- experimental heat group, B- experimental cold group, C- control; Time 1 (T1) – assessment of the three groups; Time 2 (T2) – during three weeks the experimental groups did an application of the thermal agents T2a (A-heat; B-cold) on elbow flexors in the spastic arm, for an established period of time and temperatures equally controlled; T2b – all groups effectuated a classical physiotherapy program of exercise; Time 3 (T3) – follow-up assessments of the three groups. For the assessment of the two periods the Modified Ashworth scale was used to perceive how heat and cold influenced muscle tone and the Rivermead Motor Assessment tool was used to see if the motor function of these patients improved with the exercise program during three weeks.

RESULTS

The use of Kolmogorov-Smirnov and Shapiro-wilk tests has demonstrated that the sample had an abnormal distribution ($p< 0.05$). Test showed some statistic significance between T1 and T3. With the Wilcoxon test the results showed an improvement in both experimental groups however only the group B ($p< 0.025$) had statistical significance regarding the muscle tone evaluation. The same happened with Mann-Whitney test, only in the final assessment has showed some statistical significance ($p< 0,050$) between groups A and B.

CONCLUSION

This research did not found any motor function improvement with the use of thermal agents. It is, in our view, necessary to conduct more research in this field, using bigger samples and/or larger periods of thermal agent's application, each day or during more days. It is also possible that more sensitive and accurate assessment tools are needed.

P196

THE INCIDENCE OF UROLITHIASIS IN PATIENTS WITH SPINAL CORD LESION

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AIM

To study the incidence of bladder lithiasis in patients with spinal cord lesion (SCL) during their initial admission in rehabilitation center.

METHOD

We studied 86 patients with SCL who were admitted to our department during the last 2 years, 61 males and 25 females, mean age 44.3 years. Traumatic lesion 14 pts (77%), non traumatic 4 pts (23%). MS pts were excluded.The mean time of admission of rehabilitation center was 3.5 months post lesion. Bladder

lithiasis was evaluated with plane X-rays and U/S on admission and at regular intervals during the first 6 months post lesion. We also studied urine analysis (pH, calciuria, infections), specific type of neuropathic bladder disorders, the method of bladder emptying, the completeness and the level of SCL and the presence of heterotopic ossification.

RESULTS

Out of 86 pts 18 presented bladder lithiasis (21%), 24.6% of males and 12% of females. Eight of them with complete lesion and 10 pts with incomplete, 17.5% of paraplegic pts(11/86) and 30.5% of tetraplegic pts (7/86). The mean time of urolithiasis diagnosis was 3 months post lesion. The majority of pts (84%) had indwelling catheter for a mean time of 5 months post lesion. In 7/18 pts (39%) there was also heterotopic ossification development. Symptomatic recurrent urinary tract infections in 16 pts (89%). In 12 pts (66%) there was detrusor overactivity with different degree of dyssynergia. Thirteen pts (72%) with urine pH < 6 and 5 pts (28%) with urine pH > 6. In 61% of pts there was hypercalciuria.

CONCLUSIONS

In patients with lithiasis the mean time of admission was longer and the removal of indwelling catheter was delayed. The rather high incidence of heterotopic ossification and the hypercalciuria may reflect significant calcium metabolism disorder in this specific group of patients, a fact that should be further investigated.

P197

THE EFFICACY OF PHYSICAL MEDICINE IN PATIENTS RECEIVING LONG-TERM HEMODIALUSIS THERAPY-presenting of several aspects

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The hemodialysis (HD) treatment of patients with end-stage renal disease (terminal uraemia) represent a process wherein the efforts and aimed to make up for the kidney's function in the most adequate and acceptable manner. During regular hemodialysis plasma level of uremic toxins rapidly decrease. On the other hand, intracellular concentration remains higher than plasma concentration. In condition when plasma concentration of calcium and phosphates are elevated, the salt complex is created and deposited in the interstitial soft tissues and with dialysing amyloidosis by deposited of beta 2 micro globulins can makes a frequent cause of very severe chronic pain. Endocrine abnormality during HD can change bones function and structure as important metabolic and mineral deposit. All those changes require long-term medications which can increase the risk of toxic side effects in patients with terminal uremia. All those things may have variety of medical problems and complications that interfere with their level of function and general deconditioning. The aim of this study was to showed the efforts of physical medicine for supporting the better adequacy of hemodilysis process with controlled physical activities, improvement of function by blocking the pain, and physical activities for saving the rapidly loss of bone mass density. We covered 117 patients of both sexes (27 to 84 years old) treated by chronic hemodialysis program at Institute for Renal Diseases, UCC Zvezdara-Belgrade, during the period from January 2002 to January 2006. Patients were divided in to several groups according to field of problems: blocking the pain (physical therapy and block injection), osteoporosis and HD adequacy. Blocking the pain with physical therapy were efficacious in younger group of patients and in patients at the beginning of HD. Block injections are safe and efficacious method for treating the chronic pain syndrome in all HD patients. Controlled physical activity (PA) can potent the rate of "dialysis" accirose in cellular membrane and overall HD efficacy. In addition, PA during regular HD may improve cardiovascular stability. All those pilot study programs are successfully applied with satisfactory beneficial effects of reducing the risk of fracture, decreasing the pain, better dialysis adequacy and tolerance, slower muscle atrophy with improving the better quality of living.

P198

SPECIAL STRATEGIES TO IMPROVE TIME ORGANISATION FOR A PERSON WITH SEVERE VISUO-PERCEPTUAL DISORDER

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Dr. Gaston Nguyen, medical specialist, brain injury rehabilitation unit, liverpool sydney, nsw australia introduction: a 34 yo man who sustained traumatic brain injury has been left with significant cognitive deficits including severe visuo-perceptual difficulties. He had problems with recognising alphabet letters and numbers, hence with understanding written words, and numeric data such as dates and times. He had problems identifying some objects and determining their usage. He improved over time after undergoing intensive rehabilitation. However he continued to experience major functional problems and required carers' directions and supervision.

AIM

To improve his time orientation and organisation of activities. Because his cognitive and visual processing ability is limited, he is unable to use a standard diary. An alternative approach was explored, capitalising on all of his visual recognition and memory skills.

METHOD

A visual recognition-based diary has been devised and trialed with the subject. customised as a weekly time-

table, this format presents information with only 2 day view at a time, to minimise confusion. However it could also be unfolded to give a full week view, providing a sense of continuity when required. Since his colour differentiation skills are intact, key colours are used to assist quick identification of the days of the week. Two options of time are shown with conventional clock faces and numbers. The bold grid design delineates the relevant hourly periods, and morning/afternoon parts of the day. Different planned activities are depicted by suitable photos, selected to give instantly recognisable cues. during the trial period, more photos were gradually added to fill up the day.

RESULT

with repeated explanations, he has been able to familiarise himself with this timetable, and refer to it consistently. He could use it to orientate himself to correct day of the week and be reminded to perform the required activities timely. He is now reliably initiating these, and he has therefore become less dependent on carers for reminders and prompts. discussion: this demonstrates that even with severe visuo-perceptual difficulties, such individuals could be trained to overcome some of resulted limitations with alternative strategies. There is potential to expand this diary format to a monthly timetable for this subject. This could be replicated and customised for other individuals with similar disabilities.

P199

MULTIPLE SCLEROSIS AND DETERIORATING COMPLICATIONS OF UPPER URINARY TRACT

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AIM

Symptomatic bladder dysfunction occurs at some time in most patients (70-75%) with multiple sclerosis (MS). Detrusor hypereflexia and detrusor-sphincter dyssynergia are the main dysfunctions. The aim of this study is to investigate the risk of developing vesicoureteric reflux and deterioration of upper urinary tract in patients suffering from MS.

METHODS

Data were derived from 51 patients (20 men and 31 women) with MS, with mean age 49.7 years, who visited the Neuropathic Bladder Unit of our department during the last two years. They undertook blood and urine tests, X-ray of kidneys-bladder, ultrasound of upper and lower urinary tract, radiographic cystography, urodynamic study and specific radionuclear tests.

RESULTS

In the total of 51 patients, we diagnosed reflux in 7 (13.7%) patients (4 men and 3 women) with mean time from the diagnosis of MS 15.2 years. At their initial examination, 1 was being self intermittent catheterized and 6 were passing urine without voluntary control. Frequent infections were mentioned by 15.7% of the patients, whereas 54.9% of them had lesions in radiographic cystography, such as thickness of bladderÐfs wall and diverticula.

CONCLUSIONS

The rather high percentage of reflux might reflect the delayed diagnosis and management of neuropathic bladder dysfunction. A management program should be designed early enough to promote continent, low-pressure bladder storage and controlled emptying while minimizing symptoms in a manner that promotes improved quality of life and self-esteem.

P200

INTRAVESICAL ADMINISTRATION OF SODIUM HYALURONATE SOLUTION IN PATIENTS WITH SPINAL CORD INJURY

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AIM

To study the effectiveness of intravesical administration of Sodium Hyaluronate solution (SHS) at the prevention of the recurrent urinary tract infections (UTIs) in patients (pts) with neurogenic bladder after spinal cord injury (SCI).

PATIENTS – METHODS

The study included 20 pts (3 females,17 males) with diagnosed neurogenic bladder disorders as a result of SCI, out of which 15 were paraplegics and 5 tetraplegics. Mean age:42.6years.The pts were under intermittent catheterizations and anticholinergics. Inclusion criteria of the study were the frequent UTIs with clinical symptoms (more than 1 UTI/2 months) without the presence of urolithiasis. Mean follow up period:6.9 months before the administration of SHS and 4.8 months post treatment.The dose of SHS was 40mg/50ml once a week for the first month and afterwards once monthly for a period of 5 months (9 sessions in total).

RESULTS

A reduction of the frequency of UTIs was noticed. Mean number of UTIs before treatment: 2.1 /2 months, mean number of UTIs post treatment:0.65/2 months.The total number of days under antibiotic therapy mon-

thly was significantly reduced from a mean number of 12.44 days/patient before therapy, to a mean number of 0.65 days/patient post therapy.

CONCLUSIONS

Recurrent UTIs with clinical symptoms are a common complication in pts with SCI. Regular bladder emptying with no urine residual and maintenance of low intravesical pressures are the appropriate methods of preventing those complications. In case of recurrent UTIs the intravesical administration of SHS contributes significantly to the reduction of symptomatic UTIs and decreases the period of the antibiotic treatment needed.

P201

COMPUTERIZED POSTUROGRAPHY AND REHABILITATION

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Balance dysfunctions, often leading to falls, are a significant cause of morbidity and mortality. The authors highlight some of the main characteristics of posturography, related to its equipment and procedures. Using a Neurocom Balance Master, patients are assessed for impairments (weight bearing/squat, modified test of sensory interaction on balance, unilateral stance, limits of stability, rhitmyc weight shift) and functional limitations (such as sit to stand and walk across). After the assessment, the same equipment is used for the rehabilitation of patients, using adequate training protocols. Reassessement of these patients show improvement in parameters such as limits of stability and walk across, clinically related to an improved functional level and a reduction in the incidence of falls. A few clinical cases are used to demonstrate these procedures and improvements, as far as diagnosis and treatment are concerned.

P202

THE EFFECT OF TYPE I DIABETES ON THE POSTURAL CONTROL

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INTRODUCTION

The somatosensory information plays an important role in the postural control which may be deteriorated in type I diabetes influencing the displacement of the centre of pressure (COP).

The aim of the study is to compare postural mechanisms identified by using single force platform in healthy subjects and diabetic sensory neuropathy patients under different visual conditions.

METHOD

9 type I diabetes patients and 9 healthy control subjects took part in the study. The COP displacement was quantified in Romberg position by using a single force platform under two visual conditions (eyes open and eyes closed). First the sway path was calculated in anteroposterior (AP) and mediolateral (ML) directions. Secondly the data were analysed by fast Fourier transformation and compared with the control group in various frequency bands (low:0.1-0.3 Hz; middle low: 0.3-1 Hz; middle high: 1-3 Hz; high: 3-8 Hz).
Results: The diabetic group showed a significantly longer sway path in AP direction than the control group without visual control. In the low and middle low frequency bands both in AP and ML directions the lack of visual input significantly increased the frequency power and the diabetic group showed significantly higher values with eyes closed than the control group. However in the higher bands higher values can be seen only in AP direction with eyes closed.

DISCUSSION

The significantly higher sway values seen in case of the diabetic group without visual input suggest the involvement of somatosensory system. The frequency analysis revealed a significant increase of frequency power in AP direction at each frequency band whereas the increase of power in ML direction was characteristic of only the two lower frequency bands.

P203

PHISICAL THERAPY- TREATMENT OF THORACIC OUTLET SYNDROME

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INTRODUCTION

Thoracic outlet syndrome (Sy TOS) as a result of specific anatomic-vascular structures of the upper aperture of thorax and the modern way of life which causes compression in the muscles of the cervical region and reduced circulation of the region.

BACKGROUND/PURPOSE

Comparison of the efficiency of methods ultra-sound (US) with US and kinesitherapy in the conservative treatment of the patients with Sy TOS

MATERIALS AND METHODS

We have treated 90 patients (45 male, 45 female), aged 20-60. The first group of 45 patients were undergone the US treatment the second group of 45 patients were undergone the US and kinesitherapy treatment in a period of 28 days. All the patients have been ergonomically educated and were given complete neurological and physiatric examination. They also had indicative radiological ima-

ging of the cervical region, oscilography and electromyoneurography (EMNG) of the upper extremities.

RESULTS

Pain in the shoulder and scapula region, arms numbness, headaches, vertigo have been significantly reduced (p=0,001) during the therapy, although, statistics have shown that there is no significant difference (p=0,025) with the patients treated by US with combination US and kinesitherapy over the 28 days period.

CONCLUSION

The multidisciplinary diagnostics (neurologist, physition and radiologist) is necessary for discovery of the Sy TOS. Primarily, conservative method should be applied with regular kinesitreatments and ergonomic education.

P204

THE INFLUENCE OF WHOLE BODY VIBRATION ON MUSCLE STRENGTH, FLEXIBILITY AN ANAEROBIC CAPACITY

RIO, Carlos

Exercises for strength and flexibility are a main component of the training process in most sport disciplines. They determine both the general and specific bases for skillful performance. Vibration applied to muscle or tendon induces a non-voluntary muscular contraction termed the "tonic vibration reflex" and the effects of whole body vibrations on the mechanical behaviour of human skeletal muscles were studied in 42 physically active subjects randomly assigned to the experimental (E) or control (C) group. Group E was subjected to 10 sets of vertical sinusoidal vibrations lasting up 60 s each, for 10 min. daily, for a period of 10 days. The control subjects were requested to maintain their normal activity and to avoid strength or jumping training. The subjects were tested at the beginning and at the end of the treatment. The Wingate test, quadricips isometric strength ("Ergometer") and harmstrings flexibility was evaluated. Marked significant improvements were noted in Group E in the strength, flexibility and power output (W/cm2). In contrast no significant variations were noted in Group C. It was suggested that the effect of whole body vibration elicited a fast biological adaptation associated with neural potentiation.

KEY WORDS

Vibratory stimulation exercises; Muscle power and flexibility.

P205

EVIDENCE FROM GREEK SUBJECTS WITH VARIOUS NEUROLOGICAL DISORDERS ON FOUR DYSPHAGIA QUESTIONS

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The research work presented here has been performed at a rehabilitation center in Greece. Patients of the center with various neurological diseases were presented with four questions of major importance about dysphagia and their responses were statistically processed. The first question examines whether the patient feels any difficulty in the throat while he/she is eating, the second examines whether the patient feels that he/she is drowning or is having coax while eating, the third examines whether the patient needs to melt the food in order to eat it and finally the last question examines whether the patient needs to drink water after each deglutition. 86 Greek subjects, with various neurological diseases (Stroke, Parkinson, M.S., S.L.A, Hemorrhagic Brain Injury, Alzheimer), participated in the present research with the majority of participants having suffered fro stroke. The subjects were divided into two groups: group A, which includes patients in the age range of 13 – 60 and group B in the range 60 – 95. Analysis of the results showed that the most ´´critical´´ questions appeared to be the second and third, since 69.4% of the patients in group B and the 51.8% of the patients in group A had problems of coax. The findings indicated that the patients in group A present less difficulties compared with patients in group B. More specifically, in the first question 14.8% of group A (age 13 – 60) responded positively compared to 23.7% of group B (age of 60 – 95). In the second question there was only a slight difference between the two groups with 37% in group A and 37.2% in group B. In the third question the results for the two groups were 14.8% and 32.2% for groups A and B, respectively; finally, in the fourth question there was only a slight difference between the two groups with 22% and 25.4%, for groups A and B, respectively. This research can be useful for identifying the frequency of dysphagia problems in neurological patients and more specifically of swallowing as well as coax and drowning symptoms. The findings can also be used for establishing individual treatment and rehabilitation programs.

P206

STROKE AND APHASIA QUALITY OF LIFE-39: SPANISH TRANSLATION AND CROSS-CULTURAL ADAPTATION

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INTRODUCTION

Quality of Life has been defined by the World Health Organization Quality of Life Group as "individuals" perceptions of their position in life in the context of the culture and value systems in which they live in relation to their goals, expectations, standards and concers". The assessment of health-related Quality of Life (HRQoL)

has becoming an important measure in patients with stroke but yet valid assessment is not possible when patients present communication problems. Hilari et al. developed the Stroke and Aphasia Quality of Life-39 (SAQOL-39). It consits of 39 questions that cover four domains: physical (17 items), psychosocial (11 items), communication (7 items) and energy (4 items). The response format for these questions is a five-points scale. The SAQOL-39 demonstrated good psychometrics properties in the application in aphasic people.

OBJECTIVES

This study presents a translation and cross-cultural adaptation to Spanish from the Stroke and Aphasia Quality of Life-39.

METHODS

We adapted to Spanish the original version of the SAQOL-39 following the translation and back-translation method recommended by majority of experts. It has the following steps: 1.Two independent translations by clinical and linguistic specialists. 2.Synthesis of the translations. 3.Back-translation by a linguist with English as his mother language. 4.Expert committee review. 5.Pretesting:20 people with chronic aphasia after stroke have been tested.

RESULTS

We found semantic and conceptual equivalence between both versions. We show the preliminary results of the application of our Spanish version of SAQOL-39 and its reliability and acceptability in clinical use.

P207

RELIABILITY AND VALIDITY OF THE TURKISH VERSION OF THE ECOS-16 QUESTIONNAIRE

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AIMS

The aim of this study was to translate and adapt the ECOS-16 (Short osteoporosis quality of life) questionnaire into the Turkish language and evaluate its reliability and validity.

METHODS

The original ECOS-16 was translated and adapted following international guidelines. One hundred and twenty eight patients diagnosed with primary osteoporosis and a random sample of 106 women from the general population (control group) were recruited. We administered the Turkish ECOS-16 and SF-36 to both the patient group and controls. All participants attended 2 visits: at baseline and at 2 weeks. As well as sociodemographic characteristics, bone mineral density and the number of osteoporotic fractures were determined for all the patients. Internal consistency and test-retest reliability were measured with Cronbach's alpha coefficient and the intraclass correlation coefficient, respectively. The concurrent validity was tested by comparing the ECOS-16 with the other indicator of health related quality of life, the SF-36.

RESULTS

Cronbach's alpha for internal consistency was 0.87 for the total questionnaire and 0.81, 0.84, 0.80 and 0.78 for the domains physical functioning, pain, psychosocial functioning and fear of illness, respectively. Test retest reliability of the Turkish ECOS-16 and its subscales ranged from 0.68 to 0.85. The concurrent validity was good. The domains of the Turkish ECOS-16 showed higher correlations with their corresponding domains of the other instrument than the other domains.
CONCLUSION: Empirical data support that the Turkish version of the ECOS-16 questionnaire is a reliable and valid measure to be used in clinical trials including Turkish patients with primary osteoporosis.

P208

PROBLEM BASED LEARNING (PBL)

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BACKGROUND

Since the Bologna agreement, European Universities have faced one of the most important challenges in their history: the creation of the New European Zone of University Education. This new framework endeavours to be a process of harmonization of the systems of higher education of the European Union. In order to do this, it focuses on three fundamental areas: the catalogue of degrees, the system of credits and the educational methodology.

MATERIAL AND METHOD

For years in the Complutense and Extremadura Universities we have been working on the changes of educational methodology, including Problem Based Leraning (PBL) in the curricula of Medicine and Physiotherapy. Through clinical cases distributed in workshops with situations of health similar to those which they will be confronted as professionals, we put within reach of our students, the means necessary to promote critical thinking in them.

RESULTS

The experience has been scored by the students as "satisfactory" in 100% of cases. Conclusions: With PBL in University training we are contributing to the obtain

of medical assistance that lends services of maximum scientist-technique quality

P209

SPINAL CORD INJURY AND THE PRESENCE OF PAIN

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Unfortunately pain is a common secondary complication following Spinal Cord Injury and according the literature has prevalence estimates ranging from 18% to 96%

AIM of our study was to register the permanence, the severity, the type, aggravating or alleviating factors of pain in persons who had a spinal cord injury.

MATERIAL AND METHOD

84 patients, 67 men and 17 women, aged 19-58 years were recruited for the study. All were treated in our rehabilitation department and had reported the presence of pain during their hospitalization. Main inclusive criteria were age over 18 years, the presence of pain and that at least 1 year had passed from the injury time. All patients were assessed according American Spinal Injury Association for the motor, sensory, and completeness of the injury,and all demographic characteristics were registered. For pain classification was chosen the International Association for the Study of Pain model (IASP). We used for pain registration the Visual Analog Scale, the Numerical Rating Scale, a list of pain descriptive adjectives and a body map.

RESULTS

No differences between ages, gender. Light prevalence between incomplete injuries. Spasticity, over activity, stress, weather changes are common aggravating factors. Educational level, socialization, relax, were mentioned as alleviating factors.

P210

STUDY REGARDING THE PSYCHOMOTOR AND THE EVOLUTION OF CHRONIC PAIN IN YOUNG ADULTS

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INTRODUCTION

"The young adult" represents an apparently healthy age group, but certain objective and professional factors (mechanical repetitive actions, same monotonous position, excess weight), psychological factors (personal conflicts, family and intimacy) all reflect and have their role in the increase of subjective persistent pain with chronic tendencies. Occurrences which need to be recognized and identified in their early stages and treated, in terms to prevent it from becoming chronic and evolving with all its functional, economic, social and professional consequences (implications).

MATERIAL AND METHODS

We have conducted a clinical and psychological prospective trial on a lot of 47 patients, aged between 28-48 years old, admitted in the Rehabilitation Clinique for somatic musculoskeletal pain (cervical, lumbar, knee and hip). The pain was clinical evaluated on VAS (visual analogue scale), musculoskeletal mobility of the cinematic chains (superior and inferior limbs, lumbar region) and ADL (Activities of Daily Living). A sample of 32 of these patients attended physical therapy and a sample of 15 patients this was associated with psycho-cognitive therapy.

RESULTS

Favorable effects could be seen in both study groups. Effects such as: A diminishing of pain, improvement at the functional level, significant improved performance in the group where physical therapy was applied along with psycho-cognitive therapy.

CONCLUSION

It has been concluded that there is a need for introducing relaxation methods, emotion transfer and communication, into the current therapy.

P211

BACK SCHOOLS AND LOW BACK PAIN

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INTRODUCTION

Back schools have frequently been used for treating patients with low-back pain. A back school is an educational program that teaches patients practical information about anatomy and function of the back, posture, back care, body mechanics, back exercises, and preventing long-term back problems. However, the content of back schools has changed and appears to vary widely today.

OBJECTIVES

The purpose of this study was to assess the efficacy of a Back School (BS) program for patients with low back pain and to evaluate degree of satisfaction.

MATERIALS AND METHODS

We gathered a sample of 80 patients attended in the back school. They had not improved with previous conventional rehabilitation-medical treatment. Back School consisted of 3 lessons in a week. Each lesson was divided into a 1-hour and 30-minute theoretical part and a 30-minute answer back pain questions part. Owestry Low Back Pain Questionnaire was completed by the patients at first day. Six months after initiation of the program, Owestry Questionnaire and a satisfaction questionnaire was carried out.

RESULTS

Of the 80 patients had attended in the back school, only 28 completed Owestry Questionnaire and a satisfaction questionnaire at six months. Mean score of the Oswestry Questionnaire before back school was 30.16 and at six months was 26.82 (P > 0.05). 64% of the patients reduced the used of analgesics. 100% of the patients reported being satisfied after taking part in the back school.

DISCUSSION AND CONCLUSIONS

1.- Back School is a good alternative to low back pain patients. 2.- Oswestry Questionnaire score decreased at six months after initiation of the program in relation to the initial score. 3.- Patients attended in the back school report high level of satisfaction. 4.- Back School reduced the used of analgesics and recurrence and severity of new low back pain episodes.

P212

THE STEPPED CARE APPROACH FOR CHRONIC PAIN PATIENTS IN AN OUTPATIENT REHABILITATION CLINIC

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INTRODUCTION

A multidisciplinary cognitive-behavioural rehabilitation program (CBP) is an evidence-based treatment for patients with chronic pain syndromes. Unfortunately it is hard to predict which patients will benefit of such a program. To avoid a disappointing result of the treatment we designed a multidisciplinary stepped care program. The program has 6 steps. First patients are seen by a rehabilitation physician who makes a diagnosis and includes them in the program. In step 2 patients fill in 3 questionnaires: Tampa Scale of Kinesiofobia (TSK), Symptom Check List-90 (SCL-90) and Multidimensional Pain Inventory (MPI). These are screened by a psychologist. Depending on the outcome of the questionnaires psychological consultation takes place (step 3). Step 4 consists of a 2 day screening by a physical therapist and an occupational therapist. The emphasis of this screening is on physical impairments, disabilities and ergonomics. With the use of the Canadian Occupational Performance Measure (COPM) patients set goals for further treatment. The results of all steps are discussed in a multidisciplinary rehabilitation team meeting (step 5) in which a definite treatment advice is formulated. In the last step (6) a CBP takes place. In each of the steps patient and/or physician can decide to go on to a further step or to quit the program.

AIMS

To evaluate the outcome of a stepped care approach for patients with pain syndromes in an outpatient rehabilitation clinic of a teaching hospital Methods: Retrospective evaluation of the medical records. Subjects: In 2004 and 2005 227 patients with chronic pain were referred to our clinic. Results: 57 (25%) patients reached step 4 (multidisciplinary evaluation). 27 (47%) of the patients finished the CBP (step 6). Of the patients finishing step 6, 20 patients(74%) reached their treatment goals. 17 patients (85%) were satisfied with their results and applied the learned principles in their daily living. Conclusion and discussion: The stepped care program seems successful to select patients who benefit from a CBP. On the other hand there is a chance that patients with possible benefits of a CBP are excluded because our criteria for continuing the program are set too high. In our opinion more research is needed to determinate factors which predict good outcome of a CBP.

P213

BACK PAIN / NOTALGIA PARESTHETICA

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INTRODUTION

Notalgia means “pain in the back”. It is a relatively unknown cause of referred pain. It is a sensory neuropathy involving the dorsal spinal nerves.Though theories abound, no clear etiology is known and there is no consenses about the treatment. We describe a 71 years old woman case who was treated with pregabaline and physiotherapy.

AIMS

Determine the efficacy of phisiotherapy in this situation.

METHODS

Case analysis and review of literature.

RESULTS

The treatment purposed provides a clear benefit for the patient.

DISCUSSION/CONCLUSION

Notalgia paresthetica is a patology not frequently reported, with a benign course, if appropriately diagnosed.

P214

EFFICACY OF LASER THERAPY IN PATIENTS WITH ACUTE LOW BACK PAIN IN COMPARISON WITH PULSED ULTRASOUND

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INTRODUCTION

Low back pain is one of the most frequently health problems. Recent studies have shown some possitive results with loe level laser therapy (LLLT).

AIMS

The purpose of this study was to compare the efficacy of LLLT and pulsed ultrasound in patients with acute lumbar pain caused by lumbar discogenic laesion.

METHODS

Clinical study included 50 patients with lumbar discogenic laesion, NMR imaging signed as Macnab II et III group, which were randomly divided in two different groups: A group (n=26) which was treated with pulsed ultrasound to lumbar paravertebral region 1W/cm for 10 minutes and B group (n=24) treated with with following parameters of LLLT: Wavelength 904, Frequency 3000 Hz, at dose 2 J per point, accumulated dose 120J applied to 6 points on lumbar paravertebral region Patients were treated every day for ten days. All patients were having identical treatments (pharmacologically treatment with NSAL, unburdening, protective positions training). Clinical examination, lumbar mobility (fingers-floor distance), straight leg raising test, pain intensity (visual analogue scale-VAS) and parameters of quality of life (Oswestry questionnaire) were performed for all patients prior and after the end of study. Data were analyzed for differences between mean values in the groups using Student,s t test.

RESULTS

Evaluation of results concerning pain measured by VAS have shown improvement, statistically significant for both groups, and a significant difference for group treated with LLLT. Mobility parameters, fingers-floor distance, quality of life parameters as sitting, standing, walking also showed high statistically significant improvement, but without difference within groups.

CONCLUSION

Both medical procedures have shown highly efficiency in treatment of acute low back pain caused by disc hernia, but with better statistically significant reduction of pain in group which was treated with LLLT in relation to group treated with pulsed ultrasound.

P215

MODULATED MIDFREQUENCY ELECTROTHERAPY, MASSAGE/HOT PACKS AND MOBILZATIO AS TREATMENT MODALITIES OF ACUTE LOW BACK PAIN

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INTRODUCTION

Different kinds of therapeutic procedures are useful in the therapy of acute low back pain. While high- and low-frequency electrotherapy are often used for different kinds of pain syndroms the midfrequency therapy is more neglected in this field of research.

AIMS

Our goal was to investigate what immediate effect could be achieved by modulated midfrequency electrotherapy (MET), mobilization techniques or the combination of massage and hot packs.

METHODS

In this pilot study 60 subjects (mean age 53,18 ± 14,95) with acute low back pain where randomly divided into three treatment groups. One group received MET, the second a combination of massage and hot pack and the third manual therapeutic mobilization for twenty minutes for three days in a row. Subjective sensation of low back pain was measured by a visual analogue scale (VAS) with a range from 0 to 100 before treatment, immediately after treatment and each hour afterwards. Additionally the brief pain inventory short form (BPI-SF) was used to evaluate outcome before the start of the study and three days after. The data was analysed using t-test. Inclusion criteria included acute low back pain for at least 48 hours. Exclusion criteria included pregnancy, neuromuscular and neurological disorders, muscle atrophy, leg pain, a history of back pain and pacemaker.

RESULTS

Directly after treatment there was a 63,09% reduction of VAS in the MET-group (p=0,000002), 17,17% in the Mobilization-group (p=0,032) and 20,48% in the Massage/Hot pack-group (p=0,024) in comparison to the prestimulation value. After 4 hours the MET-Group still showed a reduction of 41,83% (p=0,000048) while Mobilization had improved to 42,85% (p=0,000044) and Massage/Hot packs to 31,88% (p=0,000016). After 3 days of treatment we could observe a 67,8% reduction of pain in the MET, 49,07% in the Mobilization and 39,81% in the Massage/Hot pack group.

DISCUSSION/CONCLUSION

All three treatment modalities had an immediate pain relieving effect on the patients of our study while MET showed the best reduction of VAS-score in the first 3 hours after treatment. Further studies should follow in order to investigate and verify these results.

P216

EXTRAVERTEBRAL ORIGIN OF LUMBAR SYNDROME AND ITS TREATMENT BY APPLICATION OF LOCAL ANESTHETIC

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The frequent cause of lumbar pain and/or pain in the extremities are xanthoadipose nodules located in spina illiaca posterior superior, along cristae illiacae and parasacrally, usually on one side. Arteriovenous shunts and the increased number of sensitive endings of sinuvertebral nerve, in comparison to the surrounding area,

are responsible for the pain in the inflamed nodules. We applied 2% lidocaine hydrochloride, knowing that pain/inflamation in these structures, in patients with acute/sub acute lumbar syndrome with unclear clinical symptoms of radicular compression, can be treated by use of local anesthetic. Such metod was applied to 120 patients examined in our Clinic. They all had xanthoadipose nodules previously detected by palpation of the lumbosacral region. According to the number of nodules and the pain intensity, they were treated with 2-5 infiltrations of 5-10 ml of 2% lidocaine every second day. After the infiltration into painful nodules/ trigger points, the patients were resting for a while. As a result, elimination of pain was achieved with 86 patients, while 36 patients had no expected effect. The infiltration into painful xanthoadipose nodules can be a successful symptomatic therapy of lumbar syndrome. For the group of patients where no expected results were achieved, the therapy had a differentially diagnostic significance. Elimination of pain and reduction of lumbar muscular spasm create conditions for earlier application of physical therapy and faster functional recovery of the patients. This method has medical, social and economic values.

P217

UNEXPECTED CONSEQUENCES OF A GRADE II STRAINED ANKLE

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The authors presents a case of a twenty years old woman sent to the PMR Service with a history of a grade II strained ankle. Three months earlier she had a history of a fall with left ankle trauma. Initially she was treated with an air splint during 3 weeks. Her physical examination showed an algodystrophic left limb with an exuberant oedema, brilliant skin, swelling, a fibular skin ulcer and the foot at a plantar flexion posture. Functionally she was able to walk only with total discharge. In her personnel history we found two years earlier a white laparotomia with delayed scar (3 months). At that time a psychiatric evaluation diagnosed a bipolar behaviour with auto-mutilation of the skin. We performed a MRI, a lymphoscintigraphic study and an electromiographic evaluation that were normal. The X-ray and bone densitometry reveal an osteopenic lower limb. We made the definitive diagnosis of Type I Complex Regional Pain Syndrome (Reflex Sympathetic Dystrophy). An intensive rehabilitation program was started and included intermittent sequencial pressure, TENS (transcutaneous electrical nerve stimulation), lymphatic massage drainage with concomitant pharmacotherapy (corticotherapy, nasal calcitonin, antidepressants, vasodilatators and gabapentin). She refused any kind of psychological or psychiatric support. After 18 months we finally achieved a good result with a perimeter limb almost like the contralateral, a grade 4 foot dorsiflexion and an ambulation possible without support. Images of performed studies and evolution of the limb will be presented.

P218

PREGABALIN VS GABAPENTIN FOR CHRONIC NEUROPHATHIC PAIN AFTER SPINAL CORD INJURY: A CASE REPORT

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INTRODUCTION

Chronic neurophathic pain is a frequent complication after spinal cord injury (SCI) with poorly understood mechanisms. It's a major impediment to effective rehabilitation, interferes with daily activities and has important psychological consequences. There is an uncertainty among specialists dealing with pain after SCI. Current treatments employ a variety of pharmacological, surgical, physical and psychological approaches.

AIM

To compare the efficacy of pregabalin versus gabapentin on a patient with chronic neurophathic pain after SCI.

METHODS

The authors present a case of a 58 –year-old male with incomplete (ASIA C) paraplegia for the past 3,5 years caused by D3-D4 pyogenic spondylitis who underwent surgery for cleaning and posterior fixation D2-D7 and, two years later, removal of material. He has been treated with intrathecal baclofen with an excellent spasticity improvement. Recently he initiated a dysesthetic pain through D3-D8 dermatodes which did not respond to non-steroid anti-inflammatory drugs. Pain intensity was measured by patient rating on a 0 to 10 visual numerical scale. It was introduced gabapentin 300 mg/day which was progressively increased until 2100 mg/day. Because the patient's complaints continued, gabapentin was substituted by pregabalin 300 mg/day that was increased until 600 mg/day. Physical therapy was always used (hot paches, massage and TENS).

RESULTS

With 2100 mg/day gabapentin there was a decrease of pain on the numerical rating scale (9.8 to 8). With 600 mg/day pregabalin the decrease was much more significant (visual numerical scale = 5).

CONCLUSIONS

Because of the high prevalence of chronic pain after SCI and its relation to disability, handicap and quality of life, chronic pain represents a significant challenge. There are some reports in literature to the use of gabapentin in these situations but not for pregabalin (only

recently approved by FDA for use in neurophathic pain). This case report describes the successful use of pregabalin in the treatment of disesthetic pain in a patient with SCI and with better results than gabapentin. This suggests that pregabalin should be studied as a therapeutic option for treating central pain post-SCI.

P219

EFFECTIVENESS AND TOLERABILITY OF TOPIRAMATE IN NEUROPATHIC PAIN: A MULTICENTRE STUDY OF 240 CASES.

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INTRODUCTION AND AIMS

The antiepileptic drug Topiramate has shown efficacy in the treatment of neuropathic pain (NP) in different reports. The aim of this study was to review the possible role of this drug in patients with NP from different aetiologies that are frequently seen in the rehabilitation setting.

PATIENTS AND METHODS

We conducted an open, prospective, multicenter study involving 240 patients diagnosed with a long history of NP. The sample consisted of 136 females and 104 males, mean age of 52,2 years old. They were evaluated at baseline and at 30, 60, 120 and 180 days by means of different types of visual analogue scale (VAS), SF-McGill questionnaire and Lattinen test. The patient's general impression of the result was also obtained. Topiramate dosage started with 25 mg at bedtime, increasing 25 mg every week (bid) until a maximum dose of 250 mg/day.

RESULTS

The mean dose of topiramate was 125 mg/day (range 25-250). The average score of the different VAS changed from 6,9 in the baseline evaluation to 2,38 at the sixth month. The score of SF-McGill questionnaire dropped from 14,3 to 3,8, and the Lattinen test from 13 to 4,6 points at the end of the study. Regarding side effects, it appeared in the 41% of cases, specially dizziness, drowsiness and nausea; 35% drop out of the study (11% due to side effects). The patient's opinion with this treatment was scored as 3,7 in a 5 points scale.

CONCLUSIONS

Topiramate can be seen as a therapeutic alternative to be taken very much into account in patients with NP having different etiology; it has a good benefit-risk ratio and is a form of treatment that is well accepted by patients.

P220

SUPERFICIAL ELECTROMYOGRAPHIC MEASUREMENT OF TONUSREDUCTION OF TRAPEZIUS MUSCLE BY MODULATED MIDFREQUENCY ELECTROTHERAPY

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INTRODUCTION

Cervical pain syndrome is usually associated with high muscle tonus in the upper trapezius. This tonus can be measured by superficial electromyography (EMG). Modulated midfrequency electrotherapy (MET) could be used to regulate muscle tonus and therefor reduce painful conditions

AIMS

Our goal was to investigate if 20 minutes of modulated midfrequency electrotherapy has an immediate effect on muscle tonus in the cervical spine area.

METHODS

In this pilot study so far 10 subjects (mean age 46 ± 17,61) received MET on the trapezius muscle. Before and after treatment, EMG of the trapezius was measured. Additionally subjective sensation of neck pain was evaluated by a visual analogue scale (VAS) with a range from 0 to 100 before and after treatment. Inclusion criteria included chronic or acute neck pain. Exclusion criteria included pregnancy, neuromuscular and neurological disorders, muscle atrophy and pacemaker.

RESULTS

We could observe a reduction of muscle tonus from 27,4 ± 23,93 to 8,04 ± 5,13 micro volt which is a reduction of 70,66% (p=0,0014). The mean VAS-score could be reduced from 5,5 ± 1,3 to 2,1 ± 0,9.

DISCUSSION/CONCLUSION

The MET seems to reduce pathological high muscle tone in the trapezius muscle. There is also a benefit regarding pain sensation. More patients are needed in order to evaluate these findings.

P221

EFFECTIVENESS OF NEUROFEEDBACK IN FIBROMYALGIE SYNDROME

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INTRODUCTION

Neurofeedback (NFB) or EEG Biofeedback is an operant conditioning procedure whereby an individual can learn to change his or her main brainwave patterns.

AIM

The aim of this single blind, randomized, and controlled study was to find out the therapeutic effectiveness of NFB training in patients with fibromyalgia syndrome (FMS).

METHODS

Sixteen patients with FMS were included in the study. Patients were randomly assigned to NFB or control groups. NFB group consisted of 9 patients who each received 10 sessions of sensory motor rhythm (SMR) training, whereas control group consisted of 7 patients who each received escitalopram treatment. Visual Analog Scale (VAS) for pain and fatigue, Hamilton Depression and Anxiety Inventory (HDI, HAI) questionnaires, Beck Depression and Anxiety Inventory (BDI, BAI) questionnaires, SF-36, and Fibromyalgia Impact Questionnaire (FIQ) were recorded in all patients at baseline and on the 2nd and 4th weeks of treatment protocols.

RESULTS

No significant difference was found between NFB and control groups at baseline regarding all these recordings ($p>0.05$ for all parameters). Although improvements were achieved in all these parameters in both of the groups ($p<0.05$ for all parameters in both groups), VAS for pain was found to be significantly lower in NFB group on the 2nd and 4th ($p=0.049$, $p=0.001$), VAS for fatigue on the 4th ($p=0.001$), HDI and HAI on the 2nd ($p=0.012$, $p=0.007$) and 4th ($p=0.001$, $p=0.002$), BDI and BAI on the 2nd ($p=0.009$, $p=0.009$), and 4th ($p=0.002$,$p=0.003$), FIQ on the 2nd and 4th ($p=0.023$, $p=0.001$) weeks of treatment than those of the control group. Regarding SF-36 general mental health, and vitality, energy or fatigue subscales were found to be significantly higher on the 2nd ($p=0.009$, $p=0.002$), and bodily pain, social functioning, general mental health, and vitality, energy or fatigue subscales on the 4th ($p=0.008$, $p=0.013$, $p=0.004$, $p=0.009$) weeks of treatment in NFB group than those of the control group.

CONCLUSION

These findings suggested that NFB training was at least as effective as escitalopram usage and might be a useful therapeutic candidate for FMS patients.

P222

KNEE OSTEOARTHRITIS IN PATIENTS RECEIVING LONG-TERM HEMODIALUSIS THERAPY

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End-stage renal disease is characterized by discontinuation of the kidney's excretory, endocrine and regulatory functions, resulting in disturbance of serum concentration of substance regulated by the kidney's normal function. The hemodialysis (HD) treatment represent a process wherein the efforts and aimed to make up for the kidney's function in most adequate and acceptable manner. Patient treated by HD may have variety of medical problems and complications that interfere with their level of function and general deconditioning. Pain associated with the untreated arthritis is significant complication and its level sometimes has been related to the period of HD duration as well as to the general condition of the patient. Osteoarthritis (OA) most frequently affected the knee joints and in patients on HD is secondary OA–atrophy type. OA of the knees in HD patients limits the ability to stand and walk and connected with less activities and poor physical functioning makes a progressive muscle atrophy of lower limbs. Sever chronic pain associated with OA is consequence at many factors: elevated Ca/P product, reactive process due to calcium deposition and dialysing-related amyloidosis require long-term medicament therapy. Long lasting medications in HD patients may increase the risk of toxic side effects and gastric problems. The aim of this study was to evaluate the efficiency of corticosteroid block injection comparing to the physical therapy in knee OA in patients on HD. We covered 24 patients of both sexes (31 to 84 years old) treated by HD program at Institute for Renal Diseases, UCC Zvezdara, during the period from January 2002 to January 2006. Patients were divided in the groups according to the age, duration of HD, duration of pain, duration of no walking. First we started with physical therapy and after that if it is no effects we done the block injection. In all 16 patients corticosteroid block injection gave successfully treatment with satisfactory analgesia, improvement of knee function and walking, with no side effect. In 3 of 8 patients which were treated with physical therapy we done block injection because of no better effect. According to our results we conclude that effect of physical therapy is more consequence to the many factors such as dialysis-related amyloidosis and some others than corticosteroid block injection. But in both cases the significantly reducing of medicament intake was noticed. Early treatment can make slower muscle atrophy.

P223

OUR EXPERIENCES IN TREATING PATIENTS WITH THE LUMBAR COMPRESSIVE RADICULOPATHY ON THE TRANS-WAVE MACHI

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To follow the therapeutic effects produced by the application of the TRANS-WAVE machine on the patients with LCR. The prospective study has included 50 patients of the specialized hospital Ribarska Spa with the LCR signs thirty to fifty years old, which were divided into two identical groups: The first group was treated by the TRANS-WAVE machine, kinezi, work and hydrotherapy. The second group treated by: kinezi, work and hydrothe-

rapy. The diagnosis of LCR demanded presence of damaged sensibility or mobility innervation with the radical distribution, pain along the lower extremity with the paresthesys in the spinal finding, tendon reflex changes and sensibility and mobility changes. The diagnosis was set based on the detailed anamnesis, clinical examination, Rtg LS part of spinal column, NMR or CT, EMNG findings. The patients of the first group were treated by the T-W machine with the 12% intensity, frequency 30 imp/min. and in the period of time 2 min/dm2 on the surface of the probe in the middle of the gluteal furrow, in the middle of the upper leg, in the area of the upper leg's hole, in the middle of the outer side of the lower leg and the foot every day for ten days, then they had 5 therapies on the second day, and on the painful spots in the area of lumbosacral part of the spine with the intensity 20%, frequency 30 imp/min. 6 minutes every day for 5 days, and then twice a week. The effects of the therapy were estimated by following of these parameters: pain, the tonus of the paravertebral muscles (PVM), the mobility of the LS part of the spine, the Lazarevic's sign. All examined followed parameters where graded with marks from 0 to 3. Result analysis showed that the better analgetical effect is ashaved in a group that had T–W therapy together with kinezi, working and hidro therapy, which was statistically important ($p < 0.01$) compared to the second group. Reduction of the paravertebral muscle lumbosacral part of the spine, spasms appeared in both examined groups after the conducted therapy, as well as increasing of the mobility of the lumbosacral spine. The treatment of patients by the T-W machine with the combined practicing of kinezi, work and hydrotherapy (thermomineral waters of Ribarska Spa) with the patients with the LKR brings to a significant analgetical effect, as well as the reduction of the tonus of the PVM, and therefore to the improved mobility of the spinal column, as well as to a better quality of our patients life.

P224

EVALUATION OF THE INFORMATION RECEIVED FROM INTERNET, ABOUT STROKE REHABILITATION

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Asklipieion Voulas

AIM

To evaluate the quality of information, about stroke rehabilitation, that can be acquired from patients and caregivers, through the tremendous information of internet.

MATERIAL AND METHOD

The most common search machines were used, using "Stroke AND Rehabilitation ", as key words. The first 300 pages in English were graded separately from 2 PMR doctors. A specially constructed estimation form was completed. A scale with 10 graded was used, concerning the evaluation of the information like, authors, scientific associations or commercial companies, private treatment centres, advertisement, anonymity of the article, amount of information, ease in finding special information etc.

RESULTS

Three hundred different Homepages were evaluated with a mean of 2,4 ± 3,97 SD (only 3 Homepages evaluated with 10). The low mean is due to the extended use of anonymous articles and to the lack of reliable sources. Homepages from scientific associations were evaluated with higher score, 6,2 ± 3,17 SD ($p<0,0001$), but according to the reviewers they needed more information. The higher score was achieved from pages of e-journals, but they had as a prerequisite medical attribute and online subscription, which made more difficult their accessibility to to the mazority of the internet users.

CONCLUSION

Doctors and their scientific associations must react in the rapidly developing electronic societ in order, to prevent the medical misinformation of our days.

P225

RELATIVES' CONCERNS ABOUT REINTEGRATION OF PATIENT WITH MOTOR AND FUNCTIONAL DEFICIT

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INTRODUCTION

The organization of Rehabilitation services must be focused on the patients needs, demands and satisfaction, in order to ameliorate the offered services.

AIM

To study relatives' concerns about the reintegration process of their patient and the consequences occurring due to his motor and functional deficit.

MATERIAL/METHODS

142 patients who were inpatients in the PRM department of KAT Hospital were studied through a period of 3 years (12th 1999 to 10th 2002). The mean time of hospitalization was 77.8 ±56.8 days. 102 were men and 40 were women with a mean of age 42.1±17.8 years old. Diagnosis was various, like: SCI=45, TBI=42, CVA=37, neurological disease=13 and other diseases=5. A special structured protocol was consisted of questions regarding the relatives' concerns about their patient's reintegration process. A correlation to the Barthel Index at the discharge was, also, made.

RESULTS

The 83.8% of the relatives were concerned about patient's functional sufficiency, while the 59.2% were

concerned about patient's ability to return at work and the 71.1% were concerned about his level of disability. 46.5% were concerned about patient's possibility to participate in recreational activities, the 61.3% for the changes in his habits and only 43% worried about the restriction in their communication. 62% were concerned about changes in future plans while 61.3% were concerned about patient's dependence on them. The 51.4% of the relatives were concerned about patient's new role, while 39.4% were concerned about sorrow and only 34.5% worried about the lack of reliance to their patient. Relatives were disappointed from: disability of their patient to perform (73.2%), restriction in initiative (47.9%), personality change (40.8%), disability to work (47.2%) and their difficulty to understand patient's needs (40.8%). At the same time, 40.1% of relatives were dissatisfied from rehabilitation program delay while 19.4% were concerned due to the discharge. The correlation of the Barthel Index at discharge was not statistically significant with the above mentioned parameters except the reliance change (p=0.037).

CONCLUSIONS

Relatives' concern was directed to motor and functional deficit more than the aspects of occupational and recreational participation and other parameters related to the patient-relative relation. Relatives declare disappointment due to patient's restriction in participation.

P226

FACTORS THAT OFFER HOPE OR DISAPPOINTMENT TO PATIENT WITH SEVERE MOTOR AND FUNCTIONAL DEFICIT, ACCORDING HIS OPINION

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INTRODUCTION

The organization of Rehabilitation services must be focused on the patients needs, demands and satisfaction, in order to ameliorate the offered services.

AIM

To study the factors that offer hope or disappointment to patient with sever motor and functional deficit.

MATERIAL-METHODS

142 patients who were inpatients in the PRM department of KAT Hospital were studied through a period of 3 years (12th 1999 to 10th 2002). The mean time of hospitalization was 77.8 ±56.8 days. 102 were men and 40 were women with a mean of age 42.1±17.8 years old. Diagnosis was various, like: SCI=45, TBI=42, CVA=37, neurological disease=13 and other diseases=5. Patient recorded his opinion in a special structured questionnaire regarding factors that gave him hope or disappointment.

RESULTS

Factors that give hope include, the ability to perform tasks (77.5%), return at work (62.7%), ability to have sex (58.5%), participation in recreational activities (64.1), people who express interest on their situation (80.3%), meeting of loving ones (78.2%), making plans and dreams about the future (73.2%), to be trusted (71.8%), reintegration (60.6%), feeling useful (62%) and being equal without sorrow. Factors that create disappointment are functional disability (64.8%), restriction of their initiative (48.6%), lack of understanding of their needs (33.1%), lack of appreciation of their skills (35.2%), and personality change (21.8%). The 38.7% of patients expressed their disappointment for the delay of the rehabilitation program and the 17.6% for the discharge. The correlation of the Barthel Index at discharge with the above parameters was not statistically significant.

CONCLUSION

The capability to perform different tasks, the active particiration and especially the expectasnce of restabilating human relations give hope to the patient. Ai the othe rhand, disapointment occurs when disability restricts participation.

P227

EPIDEMIOLOGICAL DATA AND CHARACTERISTICS OF THE PATIENT'S WIIH MOTOR AND FUNCTIONAL DEFICIT

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INTRODUCTION

The organization of Rehabilitation services must be focused on the patients needs, demands and satisfaction, in order to ameliorate the offered services.

AIM

To evaluate different clinical parameters of the patients whose length of stay in Rehabilitation Unit was longer than 1 month and their correlation to satisfaction of patients and their relatives.

MATERIAL-METHODS

142 inpatient (male=102, female=40) in our dept were studied in a period of 3 years. The mean hospitalization was 77.8±56.8 days with mean age 42.1±17.8 years old. Diagnosis was: SCI=45, TBI=42, CVA=37, neurological disease=13 and other=5. A special structured protocol was consisted of epidemiological data, compliance to therapy, patient's and his relatives' satisfaction from Rehab services and data related to reintegration. Statistical analysis was performed with SPSS and the statistical significance was controlled with the chi-square test.

RESULTS

60 (43%) patients out of 142 were single while 75 (52,8%) were married. 35 (24,6%) patients had received elementary, 67 (47,2%) high and 37 (26,1%) superior level of education. 68 (47,9%) patients were workers and employees, 24 (16.9%) were retired, 17 (12%) were students.82 (57,7%) had moderate and 44 (31%) low income. 138 out of 142 had medical insurance 48 (33,8%) were inpatients of our hospital while 49 (34,5%) were transferred from other hospital of Athens, 24 (16,9%) from Greek province. The mean time until the admittance in our unit was 64,4 ±56,3 days while 64,8% were admitted the first two months. 77% had experienced some kind of mobilization before their admittance. At the admittance 14 (9,9%) patients had tracheostomy, 91 (64,1%) indwelling catheter, 3 (2,1%) gastrostomy, 21 (14,8%) joint contractures. The complications were: 23 (16,2%) pressure sores, 62 (43,7%) urinary tract infection and 8 (5,6%) lithiasis, 17 (12%) heterotopic ossification, 6 (4,2%) thromboembolic disease, 18 (12,7%) pain. Patient's functional evaluation, by Barthel index, had a mean 24,2±17 at admittance and 64,38 ± 24,28 at discharge. Regarding the patients satisfaction the mean value was 3,805±0,67 while their relative's one, was 3,820±0,71. Conclusion: We consider that the above material and its data and characteristics are representative for supporting reliable conclusions.

P228

PATIENT'S SATISFACTION FROM THE REHABILITATION SERVICES

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INTRODUCTION

The organization of Rehabilitation services must be focused on the patients needs, demands and satisfaction, in order to ameliorate the offered services.

Aim: To evaluate the satisfaction of the patient, with severe motor deficit and long term hospitalization, from the rehabilitation services and his functional outcome.

MATERIAL/METHODS

142 patients who were inpatients in the PRM department of KAT Hospital were studied through a period of 3 years (12th 1999 to 10th 2002). The mean time of hospitalization was 77.8 ±56.8 days. 102 were men and 40 were women with a mean of age 42.1±17.8 years old. Diagnosis was various, like: SCI=45, TBI=42, CVA=37, neurological disease=13 and other diseases=5. A special structured protocol was completed in which, beside patient's clinical parameters, 10 questions relative to patient's satisfaction were included. The questionnaire was completed the day before patient's discharge and for scoring a fifth graded scale was used. Data's statistical analysis was made with the use of the SPSS package and the statistical significance was controlled with the chi-square test (level of significance p<0,05).

RESULTS

Percentages (%) of patient's satisfaction are (TABLE): Question: Satisfaction from: Min Over Min Moderate Over Moderate Max Missing Clinical care 0.7 2.8 8.5 26.1 47.2 14.8 From medical team – 0.7 6.3 21.8 57.0 14.1 From nursing team 2.1 2.8 9.9 30.3 40.8 14.1 From PT team 4.2 9.2 14.1 25.4 33.1 14.1 Personal care giver 3.5 4.2 15.5 31.7 31.0 14.1 Wards–nursing area 16.2 13.4 23.9 14.8 17.6 14.1 PT area 12.7 15.5 21.1 20.4 16.2 14.1 Rehab program 0.7 7.7 18.3 27.5 31.0 14.8 Relationship with other patients 0.1 2.1 9.9 25.4 47.2 14.8 Medical insurance's facilities 12.0 4.9 17.6 21.1 26.1 18.3 The mean satisfaction was 3.805±0,67. There was no statistically significant correlation to the diagnosis (p=0.213) and to the age (p=0.439).

CONCLUSIONS

Patients were satisfied enough from the rehabilitation team and its rehabilitation program while there was a dissatisfaction for the PRM department pile, its corporeal and technical infrastructure and the medical insurance's facilities.

P229

EVALUATION OF REHABILITATION SERVICES ACCORDING TO PATIENT'S DIRECT RELATIVES OPINION

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INTRODUCTION

The organization of Rehabilitation services must be focused on the patients needs, demands and satisfaction, in order to ameliorate the offered services.

AIM

To record patient's direct relatives requirements and expectations, patients like those with severe motor deficit and long term hospitalization, from the rehabilitation services and their overall evaluation of the functional outcome.

MATERIAL/METHODS

142 patients who were inpatients in the PRM department of KAT Hospital were studied through a period of 3 years (12th 1999 to 10th 2002). The mean time of hospitalization was 77.8 ±56.8 days. 102 were men and 40 were women with a mean of age 42.1±17.8 years old. Diagnosis was various, like: SCI=45, TBI=42, CVA=37, neurological disease=13 and other diseases=5. A special struc-

tured protocol was completed in which, beside patient's clinical parameters, 10 questions relative to patient's relatives' satisfaction were included. The questionnaire was completed the day before patient's discharge and for scoring a fifth graded scale was used. Data's statistical analysis was made with the use of the SPSS package and the statistical significance was controlled with the chi-square test (level of significance p<0,05).

RESULTS

Percentages (%) of patient's requirements and expectations are (TABLE): Question: Min Over Min Moderate Over Moderate Max Missing Patient's outcome 9.2 2.8 14.8 33.1 35.9 4.2 Significance of initial info 0.7 0.7 9.2 21.8 63.4 4.2 Patient knowledge about his prognosis 2.1 4.2 8.5 26.8 50.7 7.7 Program delay 37.3 7.0 9.9 22.5 16.9 6.3 Understanding of rehab importance 2.1 0.7 4.9 16.2 66.9 9.2 Reliance to the doctors – 0.7 2.8 13.4 76.8 6.3 Reliance to therapists and nurses 2.1 9.9 9.2 30.3 43.7 4.9 Met the goals 1.4 2.1 10.6 26.8 52.8 6.3 Adequate hospital facilities 12.0 8.5 13.4 28.9 31.0 6.3 Personnel's politeness & humanity 0.7 7.0 7.7 18.3 59.9 6.3 The mean of requirements was 3.451±0.75. There was no statistically significant correlation to the diagnosis (p=0.099) and to the age (p=0.497).

CONCLUSIONS

Initial information, initial knowledge of the prognosis, early inception of the rehabilitation program is of a great importance. Patients' relatives express reliance to the scientific personnel while there are higher demands for better PRM department facilities. In spite 8 out of 10 estimate that theirs patients met the goals of rehabilitation program.

P230

EVALUATION OF REHABILITATION SERVICES ACCORDING TO PATIENT'S OPINION

KOULOULAS, Efthimios[1]; LOIZIDIS, Theodoros[2]; TSEMPERLIDOY, Elisavet[2]; MANAOS, Evagelos[2]; KIRITSIS, George[2]; SIVETIDOU, Sofia[2]; BAKAS, Eleftherios[3]

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INTRODUCTION

The organization of Rehabilitation services must be focused on the patients needs, demands and satisfaction, in order to ameliorate the offered services.

AIM

To record patient's requirements and expectations, patients like those with severe motor deficit and long term hospitalization, from the rehabilitation services and his overall evaluation of the functional outcome.

MATERIAL/METHODS

142 patients who were inpatients in the PRM department of KAT Hospital were studied through a period of 3 years (12th 1999 to 10th 2002). The mean time of hospitalization was 77.8 ±56.8 days. 102 were men and 40 were women with a mean of age 42.1±17.8 years old. Diagnosis was various, like: SCI=45, TBI=42, CVA=37, neurological disease=13 and other diseases=5. A special structured protocol was completed in which, beside patient's clinical parameters, 10 questions relative to patient's relatives' satisfaction were included. The questionnaire was completed the day before patient's discharge and for scoring a fifth graded scale was used. Data's statistical analysis was made with the use of the SPSS package and the statistical significance was controlled with the chi-square test (level of significance p<0,05).

RESULTS

Percentages (%) of patient's requirements and expectations are (TABLE): Question: Min Over Min Moderate Over Moderate Max Missing Patient's outcome 5.6 5.6 9.9 27.5 35.2 16.2 Significance of initial info 0.7 0.7 4.2 15.5 62.0 16.9 Patient knowledge about his prognosis 5.6 0.7 7.0 10.6 59.2 16.9 Program delay 33.1 5.6 10.6 14.8 19.7 16.2 Understanding of rehab importance 3.5 1.4 4.2 16.9 55.6 18.3 Reliance to the doctors – - 3.5 9.2 69.7 17.6 Reliance to therapists and nurses 2.8 2.1 10.6 11.3 56.3 16.9 Met the goals 0.7 2.1 12.0 16.2 52.1 16.9 Adequate hospital facilities 9.2 7.0 16.9 21.8 26.8 18.3 Personnel's politeness & humanity 1.4 7.0 7.7 19.7 45.8 18.3 The mean of requirements was 3.504±0.57. There was no statistically significant correlation to the diagnosis (p=0.906) and to the age (p=0.168).

CONCLUSIONS

Patient appreciates the initial honest information about his health status and demands better rehabilitation services and infrastructures

P231

THE REHABILITATION OUTCOMES OF FALLS IN HOSPITAL THAT CAUSE PROXIMAL FEMORAL FRACTURES

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INTRODUCTION

Injurious falls during rahabilitation in general hospitals and in rehabilitation centres are significant adverse events. Falls that cause proximal femoral fracture are the most common hospital acquired fracture. Proximal femoral fracture is also the most devastating of all the major hospital acquired accidental injuries. The risk of this fracture has been reported to be eleven times more common in hospital than in the community.

AIM: To compare rehabilitation outcomes of patients with proximal femoral fracture sustained in hospital with those sustained in the community.

METHODS

Data were collected from inpatient notes and incident reports of patients admitted to hospitals from 1/1/1998 to 31/12/2003. (Hospitals were situated in the Illawarra region of New South Wales, Australia) All patients sustaining proximal femoral fracture in hospital were identified, and matched by sex, age and fracture date with patients who sustained a proximal femoral fracture in the community. Patients who were residents of nursing homes, had metastatic disease or other major injuries were excluded. Rehabilitation outcomes at separation from hospital for both groups were compared.

RESULTS

Comparing rehabilitation outcomes of subjects with hospital and community acquired proximal femoral fracture revealed: 12 compared to 4 died in hospital (p=0.027), 14 compared to 5 were discharged to nursing homes (p=0.019), 10 compared to 31 were discharged to the community (p< 0.001), 6 compared to 18 returned to pre-admission ambulation status (p=0.004), 4 compared to 24 returned to pre-admission activities of daily living (ADL) status (p<0.001). The median post fracture length of stay was 46 days for subjects with hospital acquired proximal femoral fracture compared to 32 days for those sustained in the community (p<0.01).

DISCUSSION/CONCLUSION

Patients with hospital acquired proximal femoral fracture have poor rehabilitation outcomes. Management strategies that may prevent this adverse rehabilitation outcome include provision of hip protectors during rehabilitation, attention to ergonomic factors that increase falls risk and fracture risk in hospital, and employing technology to supervise patients during rehabilitation.

P232

BALNEOPHYSICAL THERAPY END LOWER-EXTREMITY FUNCTION IN PATIENTS WITH PERIPHERAL ARTERIAL DISEASE

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Peripheral arterial disease (PAD)-related exertional leg pain may limit physical activity, thereby contributing to mobility loss and increasing cardiovascular morbidity and mortality in men and women with PAD. PAD patients have decreased functional status lower extremity than non-PAD persons.

AIM

To establish how balneophysical treatment affect functional capacity of PAD disease.

METHODS

Prospective clinical research of the 26 patients on stationary rehabilitating in Rehabilitation Center "Gamzigrad". All of the patient were in second stage of the disease by Fontain, with ASPI less then 0.90. Balneophysical treatment (kinesis therapy, vacusac, local sulfide bath, electro therapy) was 15 days long. Before the treatment and also after the therapy, there was some functional measurement: walk on 30m long track in 6 min., time needed for 5 continuous stand up of the chair, possibility of standing balance in 10 sec., speed on 4 m at normal and fastest walk.

RESULTS

All results are processed with Wilcoxon test (z=1,98 >z (0,005)= 1,96, p<0,005) and there was significant difference in functional measurements before and after the treatment.

CONCLUSION

Using the Balneophysical therapy improve functional capacity of PAD disease gives better quality of life to the patients.

P233

SPINAL MANIPULATIVE THERAPY IN THE TREATMENT OF ACUTE LOW BACK PAIN

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INTRODUCTION

In the announcement of the Agency for Health Care Policy and Research (AHCPR) from 1994, spinal manipulative therapy (SMT) was announced to be relatively safe and efficient method in treating nonspecific acute lumbal syndrome (ALS). In spite of good results, there is no scientific confirmation of efficiency of SMT. There are very few studies of the efficiency of this method in short term, at nonspecific ALS, especially in comparison to standard physical procedures.

AIM

The objective of this study was to estimate the efficiency of SMT in treating patients with acute low back pain (ALBP), after only seven days. SMT efficiency estimation was conducted in comparison to diadynamic currencies, a therapy highly evaluated in treating ALBP.

METHODS

The examination was conducted as a prospective comparative study. A total of 50 patients with ALBP (34 men and 16 women; average age – 38,3 years) were randomly assigned to the group A or the group B. The patients of the group A were subjected to SMT every three days – three times altogether. The patients of the group B were treated with diadynamic currencies, seven times. The level of pain was evaluated with a Visual Analog Scale (VAS) and flexibility of trunk and hamstrings (finger-floor distance, Side bending test, Straight leg raising test (SLRT)). The patients were evaluated at the beginning and at the end of the treatment.

RESULTS

Pain intensity was significantly reduced in the group A ($p<0,001$) and in the group B ($p<0,001$). In relation to the initional level SMT led to a more significant reduction in VAS. After the treatment, 60% (n=15) of the A group patients achieved the complete pain relief (VAS score = 0), and only 8% (n=3) of the B group patients. The averaged VAS score obtained within the group A was 10,0 and 31,5 within the group B ($p<0,001$). There was statistically a significant improvement of finger-floor distance in both groups. The average value of SLRT and Side bending test was significantly higher only in patients treated by SMT ($p<0,001$).

CONCLUSION/DISCUSSION

This study confirmed the efficiency of SMT, after only three therapeutical procedures, performed in seven days.

P234

ACUPOINTINFILTRATION WITH BUPIVACAINE VERSES MOBILIZATION TECHNIQUES IN SHOULDER PAIN

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INTRODUCTION

Different kinds of therapeutic procedures are useful in the therapy of shoulder pain. Acupuncture and triggerpointinfiltrations are effective proceders in treating shoulder pain.

AIM

Our goal was to investigate what effect could be achieved by acupointinfiltration with bupivacaine of pain sensitive acupoint around the shoulder in comparison to mobilisation techniques.

METHODS

In this pilot study twenty subjects (mean age 67,53 ± 17,72) with acute shoulder pain where randomly divided into two treatment groups. One group received infiltrations of pain sensitive acupoint around the painful shoulder with 1ml bupivacaine in each point while the second group received manual therapeutic mobilization for 20 minutes. Infiltrated points were LI15, LI11, LI16, SJ14, SJ15, SI9, and SI10. The procedures were done once each day for seven days. Subjective sensation of low back pain was measured by a visual analogue scale (VAS) with a range from 0 to 10 before treatment, immediately after treatment and each hour afterwards. Additionally the brief pain inventory short form (BPI-SF) was used to evaluate outcome. The data was analysed using t-test. Inclusion criteria included acute shoulder pain for at least 48 hours. Exclusion criteria included operation, omarthrosis, neuromuscular and neurological disorders, muscle atrophy, radiculopathy.

RESULTS

After seven days of daily treatment we could observe a 60,86% reduction of pain in the infiltration group ($p=0,00013$) and 42,86% in the Mobilization-group ($p=0,00018$).

DISCUSSION/CONCLUSION

Both treatment modalities had an immediate pain relieving effect on the patients of our study while infiltration seemed to be lightly superior in comparison to Mobilisation. Further studies should follow in order to investigate and verify these results.

P235

THE SURFACE IDENTIFICATION OF MOTOR POINT TO THE PRONATOR TERES MUSCLE IN KOREANS

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INTRODUCTION

It is not easy to localize the motor points to pronator teres muscles which have a few motor points.

AIMS

To analyze the number of motor points to the pronator teres muscle and to define these locations in relation to the surface anatomic landmarks in Koreans.

METHODS

10 cadaver limbs (5 individuals) were dissected and analyzed. The surface anatomic landmarks were the medial and lateral epicondyles of humerus and the medial and lateral styloid processes of radius and ulna. The medial length of the forearm was measured from the medial epicondyle to the medial styloid process and the lateral length of the forearm was measured from the lateral epicondyle to the lateral styloid process. The radial insertion site of the pronator teres was identified and the distance from this point to the medial and lateral epicondyle was measured. The number of the main and penetrating branches of the median nerve to the pronator teres was counted. The location of the motor point where the penetrating branch first reaches the muscle was marked by measuring its distance from the medial epicondyle to the direction of the prontator teresi¯radial insertion site.

RESULTS

The mean length of the medial and lateral forearm were approximately 25.4±0.8 cm and 25.3±1.1 cm, respectively. The mean distances from the lateral and medial epicondyles to the pronator teres insertion site were 13.2±1.4 cm and 15.5±1.2cm, respectively. The mean number of main motor branches from the median nerve to the pronator teres was 1.9±0.6 and the mean number of motor points was 3.1±1.1. The motor point was

located at approximately 39.1±15.3% (mean length 6.0±2.3 cm) of the length from the medial epicondyle to the radial insertion of the pronator teres.

CONCLUSION

The surface identification of the pronator teres motor point using anatomic landmarks may increase the accuracy and ease of many procedures including motor point block in the Koreans.

P236

THE SEVERAL APPLICATIONS OF BOTULINUM TOXIN

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The efficacy of botulinum toxin (btx) has been demonstrated for a variety of diseases associated with involuntary muscle spasms or movement. The application of botulinum toxin therapy to movement disorders requires treatment tailored to the individual patient and specific techniques of injection. The use of botulinum toxin therapy is a well established, safe and effective treatment for a variety of spasticity related disorders, abnormal muscle tone, including muscle over activity or spasticity related to upper motor neuron (UMN) syndrome caused by cerebral palsy, multiple sclerosis, stroke, spinal cord injury, or neurodegenerative disease. This work includes a variety of different pathologies (Equinus foot, related to cerebral palsy, hereditary spastic paraplegia, infantile cerebral palsy, multiple sclerosis, spastic hemiplégica, spasmodic torticollis, facial nerve (VII) dystonia) that were treated with botulinum toxin, and reveals the positive results with this therapeutic arm that we have in our disposition. The pictures revel before and after application of BTX, and show the evidence of your effect. Controlled clinical trials of botulinum toxin injections for focal muscle spasticity have demonstrated prolonged yet reversible clinical improvements in physical function and patient comfort, as well as improvement in prevention or treatment of musculoskeletal complications. These benefits have been achieved with few side effects.

P237

LONG-TERM TRAINING CHANGES LIFE-STYLE OF PEOPLE OVER 75 YEARS

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OBJECTIVE

To determine if a long-term training affects life-style in people over 75 Design: Quasi-experimental design study. Setting: Twice-a-week hospital and a once-a-week home. Participants: Twenty-eight healthy community-dwelling training males (TM) and females (TF) and 20 controls (C) Intervention: One-year strength training (60% of the one repetition maximum) with machines for the lower limbs and elastic bands at home.

MAIN OUTCOME MEASURES

1) Muscle function (MF): isometric strength and power of knee extensors, ankle plantar flexors. 2) Functional abilities (FA): Functional reach, Chair rise 1 and 10 times, Bed rise, Six-min walking test, Stair climbing, Get-up-and-go, One-leg standing. 3) Life style: time and mean daily energy expenditure (MDEE) of physical activity (PA) measured with the Paqap© questionnaire.

RESULTS

TF increased significantly MF and FA; TM only FA. PA increased increased 58% in TM and TF (t = 2.45, p = 0.02): TF were more involved in walking, domestic, and social activities (1-3.9 MET) without MDEE increment; TM in gardening, cycling and sports (4-5.9 MET) with a significant 10% MDEE increase (t=2.6).
Conclusions: Our long-term programme can significantly improve the amount of habitual PA and the life-style of TM and TF over 75.

KEY WORDS

Strength training, Life-style, Rehabilitation.

P238

A STUDY OF THE MEDICAL AND SOCIAL PROBLEMATIC OF LYMPHOEDEMA IN A GROUP OF PATIENTS FROM MADRID.

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BACKGROUND

The acumulation of lymph in tissue (lymphoedema) is due to both primary and secondary causes, the latter being more common than the former. Lymphoedema is both an aesthetic and health problem, and an important disability for patients who suffer from it. These patients also find it very difficult to access medical check-ups and possible therapies.

MATERIAL AND METHOD

We analyse a group of 60 patients from Madrid region, both primary or secondary lymphoedema. 10 of them are men (17%) and 50 of them are women (83%) The average age of the patients is 57. In the upper limb subgroup, the total cases were of women after a breast cancer operation with lymphoadenectomy and/or local radiotherapy. Other patients were both women and men.

RESULTS

An important group of patients could receive personal attention either through PRM doctor or physiothera-

pists since they joined an Special Association. Many of them could continue doing their daily activities but without increasing their lymphoedema because of given advice. The majority of the patients treated with Lymphatic Drainage, physical exercise and contention measures could diminish either lymphoedema range or complication, except in two cases

CONCLUSIONS

Reviewing these results we conclude that it is good for patients suffering from lymphoedema to be associated with other patients suffering same problem in order to access more easily to medical consulting, therapies and other information such as psychological coping skills. The Patients Associations must cooperate with hospitals and PRM services in order to alleviate the burden of patients disability.

P239

BOTULINUM TOXIN TREATMENT OF FRONTAL HYPERHIDROSIS – ABOUT A CLINICAL CASE

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INTRODUCTION

Focal hyperhidrosis is a common condition, with a prevalence of 2,8% and only 38% patients consulting their physician about their excessive sweating. This pathology is mostly confined to the axillae, palms and soles. In some individuals, usually men, appears frontal hyperhidrosis, a major complaint interfering with the person´s quality of life and professional performance. Botulinum toxin has shown to be an effective treatment for axillae and palms hyperhidrosis.

AIMS

To present the technique and response in one patient diagnosed with frontal hyperhidrosis treated with botulinum toxin type A.

METHODS

Injection of botulinum toxin type A, with mesotherapy needle, in symmetrical quadrants distributed over the forehead, preserving the orbicularis oculi muscle, using a total 75 units dose. Follow up assessment by visualization sweat exam and subjective judgement of the patient.

RESULTS

The amount of sweat production was reduced and maintained over time, confirmed in assessment, lasting 6 months. The patient reported a returning to a good quality of life and a normal professional performance. No major side effects were reported (Frontal muscle block, palpebral ptosis or facial paralysis). As minor side-effects only transient and discrete hyperhidrosis increase in other body areas, which doesn´t worried, neither affected the patient relationships or quality of life.

DISCUSSION

In this clinical case, we used our center experience with several and different pathology botulinum toxin applications, to treat a pathology not usually managed by rehabilitation professionals, but which is a cause of incapacity to work and social life restriction. We conclude that another indication of botulinum toxin type A may be the frontal hyperhidrosis treatment in selected cases, being a positive indicator for further studies.

P240

KASABACH MERRIT: CASE REPORT

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INTRODUCTION

We present the clinical case of a patient with a complex pathology, suffering from a pseudohypertrophy whole left limb which could be caused by a lymphangioma and/or hemangioma. An obstetric brachial plexus palsy is also associated in her upper left limb At the same time the patient suffered a Kasabach merrit syndrome consistent in haemolytic anaemia,coagulation problems and thrombocytopenia due to the capture of the platelets in the tumour.

CASE REPORT

Nowdays,she´s fifteen,she has had several treatments for her pathology. At the age of one a partial embolization of the subdermic hemangiolymphangioma was done, causing a dermic necrosis and a secundary lymphedema appeared in that limb as sequels. In the Rehabilitation service the brachial palsy and the secondary lymphedema were treated.The paresis diagnosis was clinical and electromiographic and it has been recovered with the appropriate treatment.As far as the lymphedema is concerned, a rehabilitation program was realized which consisted of manual lymphatic drainage, compression bandaging, kinesiotherapy with an exercise program designed to get a good joint balance and muscle strengthening,and for ending the treatment,a compression hosiery to control the lymphedema. The patient is still checked periodically in our service. At present she has a slight difficulty to stretch out her elbow, her left hand is bigger than the opposite but it is functional;and she has an active hemangioma between the thumb and the second finger that bothers her.

CONCLUSION

The treatment of these severe clinic cases such as vascular and lymphatic pathologies is a multidisciplinary challenge that different services have to deal with,in which the rehabilitation is essential.

P241

DRIVING AFTER A STROKE, PREDICTIVE ELEMENTS IN THE OFF ROAD ASSESMENT FOR FAILURE.

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AIM

Many people who had a Stroke can regain or relearn a lot of activities they performed before the Stroke. Driving is one of these activities. Aim of our study was to register the main problems that are most predictive of overall driving failure.

MATERIAL METHOD

This is a retrospective study that took place in INIOHOS (driving assessment center in Athens).Records of 83 participants (71 men and 12 women aged from 30 to 65) with Stroke who were assessed during 2003-2005 were reviewed. Each participant had a clinical history, a physical examination, including strength and range of motion, cognitive screening tests, with visual cancellation tasks tests of visual perception and attention tests, and an on road assessment.

RESULTS

Main elements that had a severe impact on the on road behavior were the age, cognitive deficiencies, visual attention and physical disabilities. Gender and having or not a previous driving license were not so important factors. No single protocol is proven sufficient to replace the standard driving evaluation that usually includes both off and on road evaluations.

P242

SHOULDER MORBIDITY INDUCED BY BREAST CANCER TREATMENT: SHORT THEORETICAL APPROACH AND INCIDENCE

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The breast cancer is one of the greatest dangers of health in Western Europe and America. One out of nine women will develop breast cancer, of which 79% will survive at least 5 years. Contemporary treatment options are breast conserving surgery or modified radical mastectomy followed by adjuvant locoregional radiation and/or systemic treatment with chemotherapeutic or hormonal agents. These treatment options may itself induce impairments of the locomotor system. It's usually related to the surgical trauma and scarring caused by the axillary dissection in combination with the fibrosing effect of adjuvant radiation therapy. Most common impairments described after treatments of breast cancer are: reduced range of motion of the shoulder; numbness of the axilla or lateral chest wall; reduced grip strength; increase in arm volume and pain. Because of the modern treatment options the number of patients cured after breast cancer increases, as do the 5 and 10 year survival. As a result, impairments induced by the treatment of breast cancer are becoming more important. They may influence the abilities to perform activities of daily living and the quality of life. The data was obtained after research of the clinical processes of 2002-2003. The patients were asked to score yes or no if they experienced shoulder morbidity during the three first months after the surgery. In our department we found shoulder complain in 37% of treatment, observed between 2002 and 2003, in all patients submit to surgery: breast conserving surgery or modified radical mastectomy, (both with axillary lymph node dissection) and with or without postoperative radiotherapy. The authors propose to approach some theoretical aspects and to display some statistics data about shoulder morbidity by breast cancer treatment.

P243

CARDIAC REHABILITATION AFTER CARDIAC RESYNCHRONIZATION THERAPY. FUNCTIONALITY AND QUALITY OF LIFE: A PARADIGMATIC CASE!

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INTRODUCTION

Cardiac Rehabilitation Programs (CRP), are important to improve Functionality and Quality of Life (QoL) in cardiac patients, namely in Heart Failure (HF) patients. Although not yet well recognized its importance in the functionality and QoL of patients after Cardiac Resynchronization Therapy (CRT).

CLINICAL CASE/ METHODS

Man of 71 years, performs implantation of a Bi-Ventricular Pace-Maker in 2003, due to a Class IV – NYHA HF. In 2005 starts a CRP because he kept a Class IV and very dependent, using wheelchair. Initiates the CPR in Nov. 2005, after a functional evaluation in treadmill and 3 questionnaires of QoL: the MOS SF-36, the MacNew and the Minnesota Living With Heart Failure (MLWHF). Due, to an important deficit of balance and a very discrete right hemiplegia, suspicion of stroke rises. A TC scan disclosed old ischemic vascular accidents. A initial treadmill test was carried with a speed of 1,2 km/h without inclination. The duration of the CRP was about 10 weeks with 33 sessions, including exercises of strength, walking and balance training, respiratory physiotherapy and cardiovascular training, in cicloergometer/treadmill. At the end of the program, in Jan. 2006, after an acute respiratory infection, new evaluations are repeated.

RESULTS

The QoL evaluation demonstrated a significant increase in the Physical component (+50%) and the Vitality (+35%) in accordance with SF-36 parameters, while the

MacNew presented its better evolution in the Emotional (20%) and Social (+17,2%) components. The MLWHF just shows a small evolution (1%). At the functional level, we could register better improvements in the cardiovascular capacity, with an increase of walking time (3 min vs 21 min) and distance (60 m vs 410 m) on treadmill (increases near 600%). The improvement of balance and confidence in the autonomy has well-recognized, almost leaving the use of the wheelchair.

CONCLUSIONS

This case shows how CRP is an important component in the treatment of Heart Failure, even 2 years after Cardiac Resynchronization Therapy, and after a precise evaluation and adequate prescription of exercise. This Programs can really improve QoL and functional capacity of old patients, a fundamental aim!

P244

CARDIOVASCULAR RISK FACTORS AND FUNCTIONALITY OF A SAMPLE OF OPORTO "LOJA DO CIDADÃO 2006"

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Students of Medicine of ICBAS Saúde Comunitária do Instituto de Ciências Biomédicas Abel Salazar Unidade de Reabilitação e Prevenção Cardiovascular do HGSA, EPE

BACKGROUND

A transversal study with a representative sample of clients of the "Loja do Cidadão" in Oporto, was organized to know about cardiovascular risk factors and to correlate them with their functionality.

METHODS

Personal and clinical data (anthropometry and digital BP) of a sample of clients, in 3 consecutive days, based in a general questionnaire and the – Duke Activity Scale Index (DASI). Sample –391 persons (aged 52 + 15,5 years; 20-88), with 63,2% of female sex, and 48,6% workers.

RESULTS

56,3% went to the doctor at least 3 months, 63,7% mentioned to had some form of surgery and 65,7% has been in the hospital; 55,2% had performed some form of sports in the past and 31% is still practicing; 8,7% had diabetes mellitus and the medium stress level was 6,1+2,4 (1 to 10); 26,6% was a smoker and 60,6% of the 104 smokers, 44,4% is a big smoker (> 20/day). With a BMI > 25 we found 59,4% persons. Related to waist measure 29,2% of man had a cardiovascular risk inferior to women (43,7%; p=0,004). With an HR inferior to 60 we found 7,7% and > 100, 2%. Concerning BP, 31.6% had SBP > 140 mmHg and with DBP > 80 mmHg were 40,3%. DASI revealed that general dysfunction increases with age and this is similar in both genders, except for sexual intercourse, with women more disabled (24,2% vs 8,2%). Concerning sports and capacity to perform intense activities, we observed that the old group (>60 years) were more functional if they were sportive in the past.

CONCLUSIONS

Nevertheless a big medical utilization, there is a big prevalence of basic problems like Obesity, HBP, Stress, Diabetes and Smoking in this sample. The sportive persons appear to be more functional after the 60 years, what could have public health relevance.

P245

SENIOR RESIDENTS INS PORTUGAL: COGNITIVE, PSYCHOLOGICAL AND FUNCTIONAL EVALUATION OF A RURAL POPULATION

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CMFR-ABPG

INTRODUCTION

The aging of the Portuguese population creates a massive increase in the number of institutionalized old people. This senior population has a great morbidity with high prevalence of dementia, psychological disorders and ADL dependency. This evaluation was not performed in a rural region of our country. This research aimed to evaluate cognitive, psychological and functional status of a senior population that lives in the three residences of a multicare institution – ABPG.

METHODS

A transversal study, including all the residents of ABPG, was developed using a comprehensive multi-domain cognitive, psychological and functional protocol which includes: Global Deterioration Scale (GDS), MiniMental-State Examination (MMSE), Alzheimer Disease Assessment Scale (ADAS COG), Disability Assessment for Dementia Scale (DAD) Neuropsychiatric Inventory (NPI), Geriatric Depression Scale (GDS-D); Functional Independence Measure (FIM), New Functional Ambulation Classification (nFAC), Rivermead Mobility Index.(RMI). This evaluation was performed by three trained psychologists with the coordination of a neurologist and a physiatrist.

RESULTS

Our study includes 30 subjects (preliminary results), 80% women, with a mean age of 82 and a mean education of 4,4 years. This cohort is composed of functional autonomous subjects on ADL/FIM (21/30) and on walking ability/nFAC (18/30). 53% have cognitive impairment and 30% are demented. Using GDS, 7 were in a predementia stage, 7 had mild to moderate dementia and 2 were in a severe stage. Clinical judgment indicates that most of these are Alzheimer´s disease. This cohort had a great psychological morbility (87%), being depression (19), apathy (17), agitation (11) and anxiety/irritability (10) the most prevalent disorders.

FIM and nFAC strong correlates (p<0,005) with MMSE, GDS-D, RMI, DAD and ADAS.

DISCUSSION AND CONCLUSIONS

Cognitive and psychological impairment are very prevalent in senior residents of this rural region and they are similar to those observed in studies with more urban populations. The Functional status is correlated with the cognition level and with psychological disorders. It is especially relevant the number of subjects with dementia (30%) or predementia (23%), and depression (63%). These considerations apply to psychological and psychosocial intervention.

P246

COMPLICATIONS AFTER BREAST CANCER SURGERY: EXPERIENCE OF THE PMR SERVICE FROM HUC

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INTRODUCTION

breast cancer remains the most common malignancy in females, despite a significant reduction in mortality over the last decades due to the screening programmes (earlier detection) and advances in treatment, which have improved survival rates. Surgery and adjuvant treatments lead frequently to several complications that can impair the functional status and quality of live of these patients. In this issue the PMR has an important role in prevention and treatment of those complications.

AIM

to evaluate the prevalence of breast cancer treatment complications and the role of PMR in these situations.

METHODS

the authors analysed the data from an evaluation protocol applied to the patients presented to our consultation between January 2003 and March 2006 and characterized this population as per the age, cancer localization, surgery, adjuvant treatments, complications and timing of rehabilitation programme.

RESULTS

the population studied was represented by 48 patients with an average age of 56,85 years. The majority of these patients underwent mastectomy with axillary lymphadenectomy. The complications were: upper limb oedema, reduced shoulder range of movement, problems related to the scar and, psychological and neurologic complications.

CONCLUSIONS

the most frequently complications were reduced shoulder range of movement (52,08%) upper limb oedema (51,46%). Less frequent problems were related to the scar (31,25%), psychological (20,83%) and neurologic (6,25%) complications.

P247

FIM AS A PROGNOSTIC MEASURE FOR THE WORKING ABILITY IN THE STROKE PATIENTS AFTER THE DISCHARGE FROM THE REHABILITATION DEPARTMENT

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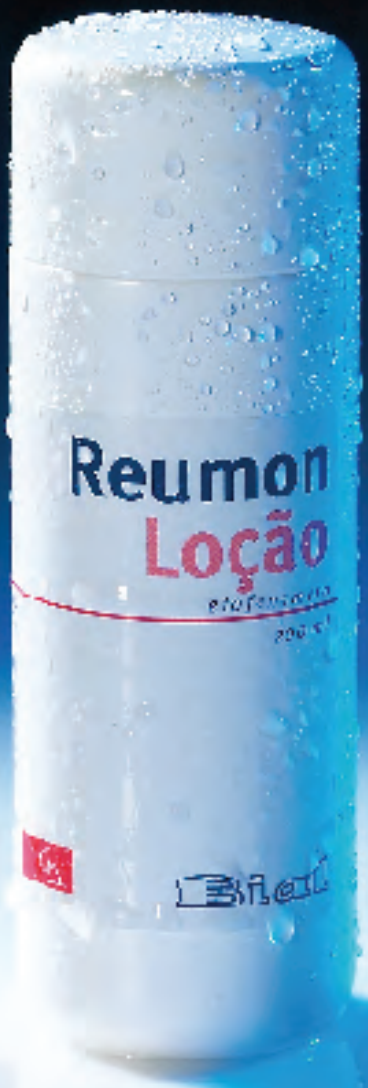
National Rehabilitation Centre «Vaivari»; Riga Stradins University

In terms of outcome results working ability is a very important indicator of every rehabilitation programme. Functional results, which has been achieved during the in- patient rehabilitation, in the future is very much dependent on the community and environmental conditions. The goal of the investigation was to evaluate the "Functional Independence Measurement" prognostic value in Latvia in patients with stroke. 355 patients were enrolled in the investigation, female and male at the age from 18 to 65 years old. All of them were employed in different fields of labour before the stroke. FIM was applied to these patients when they were admitted in the Rehabilitation Centre and on discharge. After the discharge from the rehabilitation department the Questionnaire of these patients was carried out by mail. The information was asked about: their daily activities, level of independence, labour possibilities and other general questions about their self- satisfaction, quality of life etc. The answers were received from 148 respondents. The results of the investigation show that there are not correlation between FIM and quality of life and possibility to return to work. The obtained results in the Questionnaire point to the fact that the acquired functional independence within the result of rehabilitation is not sufficiently adapted in the community setting and needs further additional investigations.

Soloção no Alívio da Dor e da Inflamação



Reumon® loção

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DENOMINAÇÃO DO MEDICAMENTO: REUMON, 100 mg/ml, emulsão cutânea. **COMPOSIÇÃO QUALITATIVA E QUANTITATIVA:** Cada ml de solução contém 100 mg de etofenamato. Excipientes ver adiante. **Forma farmacêutica:** Emulsão cutânea. Informações clínicas: **INDICAÇÕES TERAPÊUTICAS** – O REUMON está indicado em situações dolorosas do aparelho locomotor, desde que a sintomatologia seja localizada, tais como: Artropatias (periartrite, artrite, poliartrite, espondilose, osteoartrose); Mialgias; Bursites; Tenossinovites; Fibrosites; Nevralgias (síndroma cervical, lombalgias, ciatalgias); Contusões, entorses, distensões (associadas, por exemplo, a traumatismos desportivos). **POSOLOGIA E MODO DE ADMINISTRAÇÃO:** Se não houver indicação médica em contrário, o REUMON deve aplicar-se 3-4 vezes ao dia, massajando-se suavemente sobre a zona afectada, após a aplicação. A quantidade a aplicar varia de acordo com a extensão afectada; na generalidade dos casos, bastará aplicar de cada vez cerca de 5 ml ou uma quantidade de cerca de 3 cm de diâmetro de emulsão (correspondente aproximadamente a 1,7-3,3 g de emulsão). A duração do tratamento é variável, de acordo com a situação clínica a tratar. No caso de doenças reumáticas, o tratamento durante 3 a 4 semanas é normalmente suficiente na maioria dos casos. A duração do tratamento nos traumatismos agudos (por exemplo, associados à prática de desporto) pode prolongar-se até às 2 semanas. Não utilizar em grávidas, crianças e insuficientes renais, uma vez que a experiência clínica não é suficiente. **CONTRA-INDICAÇÕES:** O REUMON não deve ser aplicado nas seguintes situações: Alergia ao etofenamato ou ao ácido flufenâmico; Em doentes que tiveram reacções de hipersensibilidade, tais como sintomas de asma, rinite alérgica ou urticária, ao ácido acetilsalicílico ou a outros anti-inflamatórios não esteróides; Superfícies eczematosas ou feridas abertas; Mucosas ou olhos; Grávidas, crianças ou insuficientes renais, uma vez que a experiência clínica não é suficiente. **ADVERTÊNCIAS E PRECAUÇÕES ESPECIAIS DE UTILIZAÇÃO:** Não expor ao sol a área tratada durante o tratamento e nas duas semanas seguintes. Aplicar apenas sobre pele saudável, sem quaisquer lesões. **INTERACÇÕES MEDICAMENTOSAS E OUTRAS FORMAS DE INTERACÇÃO:** Não estão descritas interacções medicamentosas ou outras formas de interacção quando o etofenamato é utilizado na posologia recomendada. **GRAVIDEZ E ALEITAMENTO:** O etofenamato não deve ser utilizado durante a gravidez. As mulheres que amamentam apenas devem utilizar o etofenamato durante curtos períodos de tempo e em áreas pequenas. **EFEITOS SOBRE A CAPACIDADE DE CONDUZIR E UTILIZAR MÁQUINAS:** Os efeitos do REUMON sobre a capacidade de conduzir e utilizar máquinas são nulos. **EFEITOS INDESEJÁVEIS:** Em aproximadamente 5% dos utilizadores de Reumon pode observar-se rubor cutâneo e em 2%, reacções alérgicas cutâneas (prurido, eritema, erupção, edema) podem desenvolver-se. **SOBREDOSAGEM:** Não foram observados casos de sobredosagem. Se todo o conteúdo de um frasco for aplicado na superfície corporal num curto período de tempo, cefaleias, tonturas e/ou epigastralgias podem ocorrer. As medidas recomendadas incluem lavagem com água de todo o creme não absorvido. Devido ao sabor desagradável, doses tóxicas por via oral não são normalmente atingidas. Em caso contrário, deverá ser efectuada lavagem gástrica ou indução do vómito e administração de carvão activado. PROPRIEDADES FARMACOLÓGICAS: **PROPRIEDADES FARMACODINÂMICAS** – Classificação farmacoterapêutica: X.1 – Anti-inflamatórios não esteróides tópicos. Código ATC: M02AA06. O etofenamato é um anti-inflamatório não esteróide com propriedades analgésicas. O elevado efeito antiflogístico documentado em experiências em animais e confirmado em diversos estudos em humanos deve-se a diferentes acções individuais. O etofenamato actua em vários pontos do processo inflamatório: Inibição da síntese de prostaglandinas, Inibição da libertação de histamina, antagonista da bradicinina e da serotonina, inibição da actividade do complemento e inibição da libertação de hialuronidase. O etofenamato possui propriedades estabilizadoras das membranas, prevenindo a libertação de enzimas proteolíticas. Este facto determina a inibição da resposta inflamatória exsudativa e proliferativa e diminuição das reacções anafilácticas e da resposta a corpos estranhos. **PROPRIEDADES FARMACOCINÉTICAS:** *Concentrações plasmáticas:* Após a aplicação tópica de 300 mg de etofenamato em voluntários, a concentração sanguínea máxima de fenamatos foi observada 1 a 2 horas após a administração. *Ligação às proteínas plasmáticas:* 98 a 99%. *Metabolismo e eliminação:* O etofenamato é excretado sob a forma de diferentes metabolitos e seus conjugados, 35% por via renal e numa grande percentagem por via biliar e fecal. Provavelmente existe circulação entero-hepática. *Biodisponibilidade:* A biodisponibilidade dos produtos contendo etofenamato é sujeita a flutuações inter e intra-individuais, dependendo do local de administração, características da pele e outros factores. Após aplicação tópica cutânea, a biodisponibilidade relativa é de aproximadamente 21%. **DADOS DE SEGURANÇA PRÉ-CLÍNICA:** Os dados pré-clínicos não revelam riscos especiais para o ser humano, segundo estudos de toxicidade sub-crónica, fetotoxicidade e teratogenicidade. Em estudos de toxicidade local, em coelhos albinos, se a pele se encontrasse escarificada previamente à administração de etofenamato, então ocorria uma discreta reacção local, rapidamente reversível. **INFORMAÇÕES FARMACÊUTICAS** – ***Lista de excipientes:*** Monoestearato de glicerilo 40-55, Álcool cetílico, Estearato de macrogol, Diisopropiladipato, Álcool benzílico, Citrato de sódio, Ácido cítrico anidro, Silicato de alumínio e magnésio e Água purificada. **DETENTOR DA AUTORIZAÇÃO DE INTRODUÇÃO NO MERCADO:** Laboratórios BIAL - À Av. da Siderurgia Nacional, 4745-457 S. Mamede do Coronado, Portugal. **APRESENTAÇÃO E Nº DE REGISTO:** REUMON Loção, frasco 200 ml (3689208) PVP: €19,92 Comparticipação 40% (Regime Geral): Estado: €7,97 - Utente: €11,95 Comparticipação 55% (Regime Especial): Estado: €10,96 - Utente: €8,96 **OUTRAS FORMAS DE APRESENTAÇÃO E NºS DE REGISTO.** REUMON Creme, etofenamato 100 mg/g - bisnaga de 100 g (9598714), PVP: €11,18 Comparticipação 40% (Regime Geral): Estado: €4,47 - Utente: €6,71 Comparticipação 55% (Regime Especial): Estado: €6,15 - Utente: €5,03. REUMON Gel, etofenamato 50 mg/g – bisnaga de 100 g (9418004). PVP: €7,46 Comparticipação 40% (Regime Geral): Estado: €2,98 - Utente: €4,48 Comparticipação 55% (Regime Especial): Estado: €4,10 - Utente: €3,36. **DATA DA RENOVAÇÃO DA AUTORIZAÇÃO:** 22 de Agosto de 2000. **DATA DA REVISÃO DO TEXTO:** Novembro de 2004. *Medicamento sujeito a receita médica. Informação complementar será fornecida a pedido.* DIDSIV050413

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