



8th MEDITERRANEAN CONGRESS OF PHYSICAL AND REHABILITATION MEDICINE

Editor: Nicolas Christodoulou

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BOOK OF ABSTRACTS



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Dear friends and colleagues,

It gives me great pleasure in welcoming you to Limassol for the 8th Mediterranean Congress of Physical and Rehabilitation Medicine, 29th September to 2nd October, 2010.

Following the 1st successful Mediterranean Congress in Herzlia (1996) organized by the late Pr. Haim Ring et al, the pioneers of the Mediterranean movement continued to encourage colleagues from several countries to organize Mediterranean congresses for the benefit of our patients, for updating the knowledge and skills of our colleagues, for better understanding and co-operation among all the Health professionals who participate in the Rehabilitation Teams. We promoted to motto “Rehabilitation without frontiers” strongly believing that is a must for our Area and for the world in general.

All the Mediterranean Congresses, following the 1st, were very successful: the 2nd in Valencia (1998), the 3rd in Athens (2000), the 4th in Syracuse (2002), the 5th in Antalya (2004), the 6th in Vilamoura (2006) and the 7th in Portorose (2008). Now, the members of the “Mediterranean Forum of Physical and Rehabilitation Medicine (MFPRM) have entrusted me to organize together with the other members of the Cyprus Society of PRM the 8th Mediterranean Congress. We believe that Limassol, at the centre of the Eastern Mediterranean Sea will inspire and facilitate all people around to participate, from Middle East, from Africa and from Europe.

Moreover, the selection of our congress to host the 2010 Interim meetings of the International Society of PRM (ISPRM) has encouraged colleagues from all over the world to participate, exchanging with us their knowledge and experiences in the field of their work. The 8th Mediterranean PRM Congress hosts as well the 2nd Congress of Greek -Cypriot days of PRM.

Cyprus, the island of Aphrodite (Venus) or the island of love was known from ancient times for its beauty and for the warm hospitality of its people. It was the crossroad of many civilizations and the place where they meet for their exchanges. Today, Cyprus is a modern country and from 2004 one of the member-states of European Union.

The unique combination of all modern facilities and the Mediterranean charm give the perfect settings for a truly successful and at the same time pleasant event.

The Congress covers various topics of Physical and Rehabilitation Medicine and will enlighten the participants with all the new topics available in our field of work, as well as all the new equipment which have been brought in the market.

A handwritten signature in blue ink, appearing to read 'N. Christodoulou', enclosed within a large, stylized oval loop.

Prof. Dr. Nicolas Christodoulou,
President of 8th Mediterranean PRM Congress, Limassol

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C. Christodoulou, K. Christodoulou, A. Christodoulou, N. Christodoulou (Cyprus)
- PP1281 Exercise in the old age concerning prevention of falls and osteoporosis
C. Christodoulou, K. Christodoulou, A. Christodoulou, N. Christodoulou (Cyprus)
- PP1284 The effect of applying cryotherapy and pneumatic compression in patients with breast cancer
Zheleva Maya, (Bulgaria)

WORKSHOPS

- W01** **Vibration Energy in Rehabilitation Medicine:** Application of vibration in PRM for osteoporosis, rigidity, strength, coordination etc, for MD and PTs.
C. Foti, T. Travisi (Italy)
- W02** **Mesotherapy in Rehabilitation Medicine**
C. Foti, C. Ljoka, E. Ciocchetti (Italy)
- W03** **Electrophysiology in physiatry practice**
M. A. R. El Abd (Egypt)
- W04** **Tecartherapy**
C. Foti (Italy)
- W05** **Gen. Principles of Intra-articular Injections**
G. Akyuz, S. Tuzun, I. Yagci, M. Zeki Kiralp, E. Karadag-Saygi (Turkey)
- W06** **Assessment and Interventional Management
Approach in Patients with Temporomandibular Disorders**
D. Diracoglu, K. Alptekin (Turkey)

GREEK LECTURES

- GL01: Διαγνωστική προσέγγιση οστεοπόρωσης, Ι. Διονυσιώτης
(Diagnostic approach of osteoporosis, I. Dionyssiotis)
- GL02: Διατροφή και οστεοπόρωση, Κ. Αθανασόπουλος
(Diet and osteoporosis, K. Athanassopoulos)
- GL03: Θεραπευτική προσέγγιση οστεοπόρωσης, Ι. Ντάμπος
(Therapeutic approach of osteoporosis, I. Dambos)
- GL04: Οστεοπόρωση και Άσκηση, Μ. Μίχα
(Osteoporosis and Exercise, M. Micha)
- GL05: Παθοφυσιολογία χρόνιου πόνου, Ε. Κουλούλας
(Pathophysiology of chronic pain, E. Kouloulas)
- GL06: Μυοπεριτονιακός πόνος – Ινομυαλγία, Α. Γαλάτα
(Pain and Fibromyalgia, A. Galata)
- GL07: Χρόνιος σπονδυλικός πόνος, Ν. Ρούσσος
(Chronic vertebral pain, N. Roussos)
- GL08: Νευροπαθητικός πόνος, Γ. Τζάνος
(Neuropathic Pain, G. Tzanos)
- GL09: Φυσικά μέσα: Φυσιολογικά αποτελέσματα στο νευρομυϊκό Σύστημα, Κ. Κοτρώνη
(Physical means: Physiological results on the neuromuscular system, K. Kotroni)
- GL10: Φυσικά μέσα: Νευροφυσιολογικά αποτελέσματα για πρόκληση αναλγησίας,
Θ. Λοϊζίδης
- GL11: Φυσικά μέσα: Επιστημονική απόδειξη αποτελεσματικότητας, Σ. Σιβετίδου
(Physical means and Evidence Based effectiveness, S. Sivetidou)
- GL12: Φυσικά μέσα: Νεώτερες τεχνικές και μέθοδοι, Φ. Αρμακόλα
(Physical means: New techniques and methods, F. Armacola)
- GL15: Αποκατάσταση ασθενούς με εγκαυματική νόσο: Γ. Τζάνος
(Rehabilitation of patient with Burn disease, G. Tzanos)
- GL16: Η μεθοδολογία της βιβλιογραφικής τεκμηρίωσης στη ΦΙΑπ μέσω διαδικτύου:
Ν. Μπαρότσης
(Bibliographic indicative methodology in PRM through the internet, N. Barotsis)
- GL17: Συντηρ. Θεραπ. επώδυνου ώμου–κλασσικές & σύγχρονες τεχνικές, Α Παπαδέας
(Painful Shoulder Conservative treatment – classic and modern techniques,
A. Papadeas)

KEYNOTE LECTURES

Abstract No.: KL01

Abstract Title: THE NEUROSCIENCE OF FUNCTIONAL RECOVERY:
A BRIDGE BETWEEN BASIC SCIENCE AND THE CLINICAL
PRACTICE OF BRAIN REHABILITATION

Authors(s): N. Soroker

Presenting author: N. Soroker

Institution: Loewenstein Hospital, Raanana, and Sackler Faculty of Medicine, Tel-Aviv University - Israel

ABSTRACT:

Aim: To discuss the advantages – both for clinical practice and for basic science - of research programs focusing on the neural basis of recovery of function following stroke.

Background: The study of the cerebral organization of brain functions is a core issue for neuroscientists since Paul Broca's discovery of the relationship of left posterior-inferior frontal cortex to the production of speech. Early efforts to localize complex functions were generally replaced by efforts to delineate the role of different cortical regions in the overall function of distributed neural networks. Successful application of this approach, either in functional imaging or in lesion studies, should take into account the extensive remodelling of structure-function relationship that occurs after focal brain damage, its longitudinal course, and the ways it is affected by rehab interventions.

Methods: The following methods, employed in studies performed at the Loewenstein Rehabilitation Hospital in recent years, will be discussed: (1) Structure-function relationship analysis employing normalization procedures to overcome the problem of inter-personal variance in brain morphometrics and enable group statistics; (2) Functional analysis employing theory-motivated assessment of discrete operations in the fields of language, attention, memory and motor control; (3) Mathematical modelling using Multi-Perturbation Analysis (MPA) to study the relative impact of damage to various regions of interest on the global function of distributed networks; (4) Electrophysiological monitoring of the neurophysiological effects of different therapeutic modalities.

Results: Combined application of above methods (1-2) in the study of aphasic language disturbances and stroke-related memory disturbances; methods (1-2-3) in the study of spatial neglect; methods (1-2-3-4) in the study of intervention effects in hemiparesis and spatial neglect – all revealed interesting new information, contributing to the understanding of the brain mechanisms involved in normal and pathological functioning in these domains.

Conclusion: Collaboration between rehab clinicians and cognitive neuroscientists in the study of perturbations to neural networks' functioning caused by focal damage to different network components, and the study of the neurophysiological dynamics accompanying functional recovery after damage, is a fertile field of research, yielding important theoretical and clinical insight.

Abstract No.: KL02

Abstract Title: CHRONIC PAIN SYNDROME POST CVA: EVALUATION AND TREATMENT

Authors(s): M. Grabois

Presenting author: M. Grabois

Institution: Professor and Chairman, Physical Medicine and Rehabilitation; Professor, Anaesthesiology, Baylor College of Medicine; Adjunct Professor, Physical Medicine and Rehabilitation, University of Texas Health Science Centre-Houston, Houston, Texas USA.

ABSTRACT:

Stroke is one of the major causes of long-term disability. Although stroke is generally considered a neurologic disorder, it is associated with a variety of musculoskeletal complications and a multitude of pain problems. Pain following stroke is very common, especially in the upper extremities, and may be a major contributor to long-term disability. Pain can impact substantially on a patient's sense of well being. For many stroke patients, chronic pain is underestimated as a factor that significantly contributes to the overall quality of life and disability.

Pain in stroke patients may originate centrally (thalamic pain syndrome), but in most patients, the pain is caused by a peripheral mechanism. Pain is generally associated with spastic hemiplegia accompanied with contractures. Because stroke is common in the elderly, pain from concomitant chronic conditions such as arthritis and other musculoskeletal conditions must be considered as well. Furthermore, there are many associated medical conditions such as venous thrombosis and peripheral neuropathies that may contribute to post stroke pain. This lecture described the common pain problems seen in stroke patients. The diagnosis, management and impact of pain on rehabilitation outcomes will be described.

Reference: Monga TN, Kerrigan AJ: Post stroke Pain. In: Pain Management in Rehabilitation. TN Monga, M Grabois (eds). Demos Medical Publishing, NYC, NY; 2002, Chapter 5:73-101.

Abstract No.: KL03

Abstract Title: TRAINING FOR CARE GIVERS / FAMILY OF STROKE PATIENTS: IS IT A NURSE'S ROLE?

Authors(s): X. Michail, Margarita-Eleni Manola, Kyriaki Stathi

Presenting author: X. Michail

Institution: ATEI-Athens, Greece

ABSTRACT:

Patients with cerebrovascular accidents have impaired ability concerning mobility, communication and socialization and need special attention and education in order to improve daily life activities.

It is important that care givers / family of people with CVAs are given new information and taught new skills in order for these patients to maximize their own self-care potential.

CVA patients, following the acute phase of their illness and rehabilitation in specialized centers are nursed at home, mainly by their families or employed caregivers.

Clinical research both show that informing their families / care givers on care roles is inadequate or nonexistent.

Usually, the responsibilities the family/care givers take on are mainly those of self care needs of the patient, therefore their guidance is a most important nursing intervention so that these problems can be addressed.

Adequate training of nurses to prepare care givers via specialized programs stimulates the family to respond to this new challenge.

However studies have shown that provision of information programs to patients and family/care givers, by a specialist nurse in their own home after discharge, resulted in no differences in outcome.

It is important to realize that there is need, before the discharge of the patient, for educational intervention with specialized educational programs to meet the expressed need for information by stroke patients and their informal care givers, so as to be able to take on multidimensional and complicated roles.

The programs should be structured by health professionals, members of the rehabilitation team of the center and tailored according to the care givers' educational level and the patients' needs.

Abstract No.: KL04

Abstract Title: ANTIDEPRESSANT THERAPY IN POST-STROKE REHABILITATION

Authors(s): J. Laíns

Presenting author: J. Laíns

Institution: Centro de Medicina de Reabilitacao da Regiao Centro – Hospital Rovisco Pais, Tocha - Portugal

ABSTRACT:

Post-Stroke Depression (PSD) is the most common and severe mood disorder following stroke. The reported global frequency varies widely, because of methodological problems in defining PSD, ranging from 20 to 60% of the stroke patients. The peak prevalence is during the first 2 years (30% to 50% during) and major depressions tend to remit 1 to 2 years post-stroke.

It is probable that PSD has different etiological mechanisms at different stages after stroke. In fact, the PSD predictors vary with the time post-stroke, being in the 1st month related with left hemisphere lesions, aphasia and living alone; on the 3rd month related with dependence in ADL; and during the 1–2 years with social contacts outside the family.

Early recognition and effective treatment is crucial because PSD related to increased mortality, severe physical impairment, functional dependence, poor improvement and participation in rehabilitation, longer stay in hospital, poor cognitive function, poor language function, increased handicap, reduced social activity, and failure of return to work. Moreover, PSD patients, compared with the non-depressed patients, have minor improvement in rehabilitation with worse functional outcomes and worse quality of life.

Researches demonstrated that the treatment of the depression not only relieve unpleasant symptoms like mood and anxiety symptoms but, most important, improves functional outcome (FIM and Barthel Index gain) and cognitive function (Mini-mental State Examination).

PSD is a heterogeneous condition and the etiology is not completely clear, but it looks logical to consider that neuroanatomical and biochemical derangements, due to stroke, contribute for endogenous depression, and that intellectual and functional losses are related to reactive depression. Given this assumption, it is legitimate to think that drug therapy should be the preferred treatment of the endogenous depression and counseling or cognitive behavioral therapy should be the option for reactive depression. A pragmatic view eliminates the need to determine whether the mood change is primary or secondary and treat the symptoms become the priority. Pharmacological agents enhance synaptic activity and there is good evidence that drugs which potentiate monoamine neurotransmitters can indeed enhance motor function. Tricyclics, selective serotonin re-uptake inhibitors (SSRIs) and/or serotonin–norepinephrine reuptake inhibitors (SNRIs) appear to be effective on treating symptoms, these 2 lasts with confirmed effects on cortical organization that may be functionally relevant. Also appears to be a promising approach to improve the catecholamine system in PSD using psychostimulants, such as Methylphenidate (MP), a potent dopamine and noradrenergic reuptake inhibitor that improves mood, motivation and cognitive functions.

Abstract No.: **KL04 (continuation)**

Abstract Title: **ANTIDEPRESSANT THERAPY IN POST-STROKE
REHABILITATION**

The non-drug management includes simple measures like establishment of a regular sleep pattern and improving health through diet and exercise. Psychotherapeutic intervention is costly, may take several weeks, and few have access to psychology services that meet the demand.

In clinical practice anti-depressant medication is a pragmatic and efficacious solution and psychotherapeutic intervention should be for those in whom anti-depressants are inappropriate or not tolerated.

In summary, PSD is a frequent and serious pathology that must be treated to improve quality of life and the functional outcome of the post-stroke patient.

Abstract No.: KL05

Abstract Title: PARAPARESIS DUE TO RHABDOMYOLYSIS AND BILATERAL SYMMETRIC COMPARTMENT SYNDROME IN FOUR PATIENTS.

Authors(s): A. Ohry

Presenting author: A. Ohry

Institution: Reuth Medical Centre, Tel Aviv - Israel

ABSTRACT:

Four patients who developed flaccid paraparesis, rhabdomyolysis due to compartment syndrome, immediately after waking- up from prolonged night sleep in an unusual posture , will be presented . Eventually they remained severely disabled. Two patients suffered from sub-clinical hypothyroidism and all had sensory-motor axonal demyelinating polyneuropathy. Prior to the prolonged sleep, they consumed alcohol and drugs. We could not find similar clinical combination in the literature.

Abstract No.: KL06

Abstract Title: THE REHABILITATION PROCESS OF TWO PATIENTS WITH THE SILVER SYNDROME WHOSE FUNCTIONAL DETERIORATION OCCURRED AFTER A SIMPLE TRAUMA

Authors(s): A. Ohry

Presenting author: A. Ohry

Institution: Reuth Medical Centre, Tel Aviv - Israel

ABSTRACT:

Two female patients with the Silver's syndrome, whose functional deterioration occurred after a simple trauma, will be presented. The clinical description, the rehabilitation process and the literature survey will be given. The two females with Silver's syndrome (a genetic familial non progressive paraparesis with hands' amyotrophy) experienced a significant functional deterioration after sustaining "simple "fracture. The presentation will focus on three areas: the rare syndrome, the functional deterioration without a neurological one and on Dr JR Silver himself.

Abstract No.: KL07

Abstract Title: A REVIEW ON THE VARIOUS CLINICAL PHENOMENA OF SPINAL SEIZURES, MYOCLONUS AND RESTLESS LEGS SYNDROME

Authors(s): A. Ohry

Presenting author: A. Ohry

Institution: Reuth Medical Centre, Tel Aviv - Israel

ABSTRACT:

Physiatrists are often confronted with the difficult task to make a sound differential diagnosis of the following similar phenomena:

spinal seizures
spasmodic jerking of the legs
spinal convulsions
clonic spasms
segmental myoclonus
psychogenic myoclonus
restless legs *syndrome*

A review of these clinical entities will be discussed.

Abstract No.: KL08

Abstract Title: EVALUATION OF PEOPLE WITH GAIT ABNORMALITIES

Authors(s): A. Delarque

Presenting author: A. Delarque

Institution: Medecine Physique et de Readaptation CHU TIMONE - Marseille - France

ABSTRACT:

The first step of the evaluation of people with gait abnormalities in physical and rehabilitation medicine settings is the clinical examination based on the International Classification of Functioning, Disabilities and Health. Body structure, activities and participation, and environmental factors (materials and humans) must be assessed. Qualitative and quantified assessments of gait are part of activities and participation evaluation. Scales are used to assess gait activities. The tools for gait assessment can be used in a laboratory environment for kinematic, kinetic, electromyography and energy consumption analysis and other tools like videotape, walkway can be used in clinical practice or tools for ambulatory assessment to analyse activities in real life. The aims of instrumental gait assessment are: to obtain quantified gait parameters, to evaluate therapeutics, to follow the course of the disease.

Key-words: Gait, assessment, kinematic, kinetic, electromyography, walkway, video, icf

Abstract No.: KL09

Abstract Title: URBAN COGNITIVE REPRESENTATIONS OF WHEELCHAIR USERS EXPLORED BY GEOGRAPHICAL METHODS

Authors(s): R. Frischknecht

Presenting author: R. Frischknecht

Institution: Unité de Neuroréhabilitation et de Médecine physique, Service de Neuropsychologie et de Neuroréhabilitation, Hôpital Nestlé, Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland.

ABSTRACT:

Wheelchair users have to adapt their traveling in town to the many types of barriers found in an urban environment. This modified practice of the city might influence their cognitive representation of the geography of their home town. Previous studies found that the cognitive representations of urban geography could differ markedly between social groups different in terms of ethnicity, habitat or socio-professional status (Lynch, 1960; Gould and White, 1974). Wheelchair users and people able to walk see their city in a different way. Wheelchair users seem to develop urban cognitive representations more focused on precise, small-scale elements (landmarks) such as buildings and small places, whereas people able to walk see their city rather as an assemblage of large surfaces such as areas and neighbourhoods. The wheelchair users' landmark-based urban cognitive representations may be conditioned by the fact that accessibility is a mayor determinant of their way they go around in town. Wheelchair users must link every place or building with an appropriate access strategy and must plan their urban traveling very precisely. Due to the many urban barriers to their mobility and a relation to the urban space which is highly dependant on other people, the urban practice of wheelchair users is characterized by little or absent spontaneous traveling. It is also very difficult for them to change spontaneously routes and destinations while traveling. Every trip has to be highly planned. Therefore landmarks may prevail over areas/districts in their mental city map. On the opposite, people able to walk have no need to plan the access to urban structures in such a precise manner. They seem to approach their city in terms of larger areas and orient themselves towards more specific places once they reached the chosen area. Once in town, they have the ability to take spontaneous decisions where to go. To do so they need an area structured representation of the town. For these reasons they may develop more general, district-based urban cognitive representations.

References: Gould P, White R, Mental Maps, Penguin, New York, 1974; Lynch K, L'image de la Cité, MIT, Cambridge, 1960.

Abstract No.: KL10

Abstract Title: VIBRATION ENERGY

Authors(s): FOTI Calogero, TRAVISI Tiziana

Presenting author: FOTI Calogero

Institution: Tor Vergata University, Rome, Italy

ABSTRACT:

In the therapeutic field of Rehabilitation Medicine, Therapeutic Exercise can be made against normogravity, against hypogravity, and against hypergravity. Therapeutic exercise against normogravity (TENG) is made by the patient using free motion or resistance motion in normal gravity field (1g). It means moving by the normal air. Therapeutic exercise against hypo-gravity is made by the patient using free motion or resistance motion in lesser gravity field (acceleration<1g) (TELG); it means moving in water. Therapeutic exercise against hyper-gravity is made by the patient using free motion or resistance motion in higher gravity field (acceleration>1g) (TEHG); it means moving during supplementation of vibration energy (TEVE).

TEHG is a recent modality of exercise. We can realize it by TEVE. It consists in isotonic and isometric contractions of muscles, enhanced by vibration energy. TEVE is gradually becoming important: this is the product of sinusoidal vibration that elicits tonic vibration reflex, enhancing muscle contraction.

VETE can be used for ameliorating the flexibility; this target exercise can gain range of motion, solve postural problems, cure focal muscle strains. Vibration exercise can increase proprioception drivers to fast regain drill and coordination after traumatic lesion. Actually vibration application on patient needs a severe control by physician, and a precise and warning application by physiotherapist. This is a period of experimental studies in this field, but the actual knowledge let to see an interesting future for VETE in Rehabilitation Medicine.

Abstract No.: KL11

Abstract Title: SONOGRAPHICALLY GUIDED THERAPEUTIC PROCEDURES IN PRM: INFILTRATIONS, BTX INJECTIONS, ESWT

Authors(s): N. Barotsis

Presenting author: N. Barotsis

Institution: Physical and Rehabilitation Medicine Clinic, Naxos, Greece

ABSTRACT:

Musculoskeletal ultrasound is widely used by physicians for diagnostic purposes and has already proven its value. A new emerging field is the use of ultrasound imaging to guide therapeutic procedures, commonly practised by PRM (Physical & Rehabilitation Medicine) doctors.

Sonography is used to guide periarticular, intraarticular, intrabursal, perineural and peritendinous injections in order to increase the accuracy of needle placement and improve therapeutic results. An important additional benefit is the avoidance of surrounding tissue lesions. Although rarely needed, contrast media are also available to further increase the accuracy of technique. In many cases it can effectively substitute fluoroscopic guidance, overcoming the undesirable effects of radiation both for the patient and the practitioner.

Botulinum toxin injections (BTX) based on anatomical landmark orientation and muscle palpation alone, provide inadequate guidance for reliable needle placement. Ultrasound monitoring allows real time visualization of needle placement during BTX injection. Current experience suggests that sonography allows an anatomically precise injection of BTX, but its effectiveness in comparison with electromyographically guided and electrostimulation techniques are not sufficiently documented.

Extracorporeal shockwave therapy (ESWT) is quite commonly practiced by physiatrists. When focused ESWT is used, ultrasound examination can precisely localise the target area and desired treatment depth.

Undoubtedly, ultrasound examination of the musculoskeletal system is a valuable tool for diagnostic and therapeutic purposes. The lecture will address practical issues of sonographically guided interventional procedures, focusing on the advantages and disadvantages of each technique. A review of comparative studies regarding the effectiveness of guiding techniques, where available, will be presented.

Abstract No.: KL12

Abstract Title: **INTERACTIVE SESSION: REHABILITATION SERVICES
NETWORK HARMONIZATION AMONG THE MEDITERRANEAN
COUNTRIES**

Authors(s): N. Christodoulou

Presenting author: N. Christodoulou

Institution: Limassol Centre of Physical and Rehabilitation Medicine, Cyprus
European University Cyprus (EUC), Cyprus

ABSTRACT:

During the 7th Mediterranean Congress of PRM, taken place in Portorose of Slovenia, in September 2008, an interactive session was organized concerning the process for the implementation of the minimal network of Rehabilitation Services (MNRS) in the several Mediterranean countries, which was accepted as essential, during a similar interactive session in the 6th Mediterranean PRM congress in Portugal.

This MNRS was sent to all our members coming from 23 Mediterranean countries and suggesting them to use it as a road map for global rehabilitation services development within their own country.

The MNRS includes the following: 1) Phases of rehabilitation intervention: a. Intensive rehabilitation, b. Completion of the recovery process and of the rehabilitation project, c. Maintenance and prevention of progress of disability, 2) Organization levels of Rehabilitation Services in 3 phases: a. hospitalization, b. residential, c. outpatient, 3) Network of rehabilitation services delivery in: a. Long-term hospital settings, b. Outpatient recovery and functional re-education clinics and hospitals, c. Extra-hospital rehabilitation settings, d. Outpatient rehabilitation centres, 4) Intensive rehabilitation interventions delivery: a. Multiple specialty and/or single specialty hospital facilities, b. Extra-hospital rehabilitation settings, 5) Rehabilitation Centres focused on special PRM branches: a. Spinal Cord Injuries, b. Paediatrics, c. Neuropsychological problems, d. Traumatic Brain Injuries (including strokes).

During the 8th Mediterranean Congress of PRM in Limassol of Cyprus, a new interactive session is organized to present the implementation process of the MNRS in the several Mediterranean countries and the facing problems in each country.

A new questionnaire has been circulated and analysed with the aim to identify the progress and the difficulties in the implementation of some provisions of the MNRS in some of the Mediterranean countries. The presentations of the colleagues from the several Mediterranean countries, as well as their comments and proposals, will help the Mediterranean Forum of PRM to find the best ways to support those countries facing serious problems in the implementation of the MNRS.

Abstract No.: KL13

Abstract Title: VOCATIONAL REHABILITATION FOR TRAUMATIC BRAIN INJURY PATIENTS

Authors(s): A. M. Assucena and S-U. Marnetoft

Presenting author: A. M. Assucena

Institution: PRM Department, Hospital de Requena, Requena, Spain.,
Department of Health Sciences, Mid Sweden University, Östersund, Sweden

ABSTRACT:

The aim of the study is to analyse the return to work (RtW) of people with traumatic brain injury (TBI) and the vocational rehabilitation (VR) interventions that have been described in current literature for that purpose. A literature search has been conducted in the literature databases MEDLINE, CHINAL, Cochrane Library and PsychINFO. TBI is an insult to the brain that leads to temporary or permanent impairment of cognitive abilities and physical functioning. It is estimated a TBI incidence of 235/100.000, and prevalence, 7.775.000, in Europe (1). TBI accounts for a large proportion of lifelong disability (2). The cost has been calculated as 3 billion € in Europe annually (2). TBI is related to significant direct medical and non-medical costs, indirect costs due to lost productivity and intangible costs due to reduced quality of life (QoL) (3). Indirect costs are the dominant costs during lifetime, accounting for 88 % of the total costs (3). Patients with TBI (PwTBI) with moderate (Mo) to severe (Sv) injury present RtW rates not higher than 40% (4) and those with mild (Mi) injury present a variable rate of RtW (5). Long term sustained RtW after TBI is around 30 % (6, 7). These individuals are traditionally undergoing for disability pension. As a consequence, there is a socioeconomic burden, individual's restriction in social participation and decreased QoL. It has been drawn from evidence that VR is warranted (6). The efficacy of different VR approaches in PwTBI is still unanswered (6). A significant proportion of PwTBI, including those who are Sv injured, are able to RtW if sufficient and appropriate effort were invested (5). There is therefore a great need of effective VR program to achieve optimal RtW rates for PwTBI.

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Abstract No.: KL14

Abstract Title: LONG TERM COMPARISONS OF PATIENT OUTCOME AT TWO, FIVE AND TEN YEARS POST TRAUMATIC BRAIN INJURY

Authors(s): J. Olver

Presenting author: J. Olver

Institution: Dept. of Rehabilitation- Epworth Healthcare Victor Smorgon, Chair of Rehabilitation Medicine
Monash University, Melbourne, Australia

ABSTRACT:

Objectives

This study examined long-term outcome for up to 10 years in young traumatically brain-injured individuals following discharge from a comprehensive rehabilitation program.

Method

111 patients with TBI have been followed up at five and ten years post injury using a structured interview format detailing neurological symptoms, mobility, independence in daily activities, communication ability, perceived changes in cognition, behaviour, emotional control and relationship issues.

Results

Neurological sequelae of headaches and dizziness continue to be reported by 30% of the patients at all time intervals. There was a general increase in higher level mobility over time with 24% reporting no physical sequelae at 10 years compared to 15 % at 5 years and 52% being able to engage in activities such as running and jumping. Cognitive problems including difficulties with memory, concentration and slowness of thinking were reported in about 65% of patients and didn't change over the course of the reviews although fewer patients reported fatigue at 10 years than at 2 and 5 years. Half of the patients noted increases in anxiety and depression and 65% noted increased irritability at 2 years post injury and this frequency didn't alter over the ten years. Of those employed at 2 years post injury, 71% were still employed at 5 years and this dropped to 64% at ten years. Recording of marital status showed that 20% fewer patients were married at ten years compared to an age matched population average

Conclusion

The cognitive and emotional affects in patients with acquired brain injury did not change between 5 and 10 years although some physical improvement was noted. There was a decline in their ability to sustain employment and they had more difficulty in forming long term relationships leading to increasing social isolation.

Abstract No.: KL15

Abstract Title: POST POLIO - ETIOLOGY, DIAGNOSIS AND TREATMENT

Authors(s): G. Grimby

Presenting author: G. Grimby

Institution: Section of Clinical Neuroscience and Rehabilitation, Sahlgrenska Academy at University of Gothenburg, Sweden

ABSTRACT:

The post polio syndrome (PPS), which does not cover all individuals with residuals after polio, is defined as prior paralytic poliomyelitis with evidence of motor neuron loss (EMG), a period of functional recovery, gradual or sudden onset of new muscle weakness, with or without generalized fatigue, muscle atrophy, or muscle and joint pain, and exclusion of other causes of symptoms. The etiology of the new muscle weakness and muscle atrophy is mainly an ongoing denervation of muscle fibres without adequate reinnervation.

The diagnosis should be based on the above criteria including assessment of muscle function, pain, respiratory and swallowing function, aspects on activity and participation. EMG including assessment of the size of motor units in relevant muscles will give indication of the denervation/reinnervation process and risk for loss of muscle function at very large motor units.

The treatment should be based on a multi-professional team approach. Resistance and endurance training can be recommended after functional assessment and individualized, unless there is very low function and, thus, no trainability. Means to reduce pain are important. Advices on modification of daily activities should be given. There is no evidence for an effect of pharmacological treatment except for recently shown positive effects of intravenous immunoglobulin. Orthoses and assistive devices should be recommended when adequate. Respiratory dysfunction has to be specifically treated, including ventilator assistance. Support should be given for adaptation in daily activities and for changes in working situations.

Abstract No.: KL16

Abstract Title: COST OF WALKING AND FATIGUE IN MULTIPLE SCLEROSIS PEOPLE WITH LOW DISABILITY

Authors(s): M. Franceschini, A. Rampello, F. Bovolenta,
M. Aiello, P. Tzani, A. Chetta

Presenting author: M. Franceschini

Institution: Dept of Neuro-Rehabilitation, IRCCS San Raffaele-Pisana, Roma,
Internal Medicine Dept, Rehabilitation Medicine Unit, S. Agostino-Estense New Civil Hospital,
Modena, and ³Cardiopulmonary Dept, Section of Respiratory Diseases, University Hospital of Parma -
Italy

ABSTRACT:

Objective: To assess the cost of walking (CW) in Multiple Sclerosis (MS) patients and to investigate its relationship with dyspnoea and fatigue.

Methods: In 46 MS patients and in 36 healthy controls, CW was measured during the 6-minute walking test (6MWT). Perceived breathlessness after walk was rated on a visual analogue scale and corrected for the walked distance. The patients' perceived effect of fatigue was assessed by means of the Modified Fatigue Impact Scale.

Results: The CW was significantly higher in MS patients than in controls, however patients with normal walking speed had normal CW. CW was directly related to the disability degree, but not to breathlessness perception and fatigue. Patients with an Expanded Disability Status Scale score greater than 2.5 had a high likelihood to show an increase in CW. Breathlessness perception was higher than that in controls and was related to fatigue.

Conclusions: Our study shows that MS patients, even with mild disability and not requiring any assistive device, may have an increase in CW and suggests that an early aerobic rehabilitative program should be considered in these patients. Energy expenditure when walking is not a determinant of fatigue and exertion dyspnoea in patients with MS.

Abstract No.: KL17

Abstract Title: CHRONIC LOW BACK PAIN; CHALLENGES AND OPPORTUNITIES

Authors(s): H. El Shahaly

Presenting author: H. El Shahaly

Institution: Professor of Rheumatology, physical medicine and Rehabilitation. Suez Canal University.
President of Egyptian Society of Rheumatology and Rehabilitation (EGYRAR)

ABSTRACT:

Low back pain is the Second major reason for offices visits after common cold/ URI. Lifetime prevalence >70%. Highest age is 45-64 years. Females tend to have more chronic LBP. 90% of those with acute LBP spontaneously recover activity tolerance within one month. Only 5% remain disabled longer than 3 months

Chronic Low back pain (CLBP) is the Pain that lasts beyond the ordinary duration of time that an insult or injury to the body to heal (usually 4-12 weeks). It is attributed to central neural plasticity, that leads to altered perception and altered nociceptive thresholds **(allodynia & hyperalgesia)**

CLBP does not radiate past the knee, with current symptoms extending three months or longer from onset, while chronic sciatica is CLBP that radiates past the knee

CLBP is commonly induced by degenerative, mechanical, metabolic or soft tissue injury of the lower part of the spine. Clinical assessment as well as new imaging techniques is clue for the diagnosis. Treatment of such condition is tailored according to its stage and takes conceptual approach. Nociception, pain perception, suffering and pain behaviour are directing the physiatrist to the proper line of treatment. Regular use of analgesics and Non steroidal anti-inflammatory drugs (NSAIDs) is usually not helpful. Combination of Physical and medical treatment as well as local treatment will be discussed in details in this presentation.

Abstract No.: KL18

Abstract Title: OUTCOME MEASURES IN LOW BACK PAIN

Authors(S): F. Guler-Uysal

Presenting Author: F. Guler-Uysal

Institution: At Istanbul, Turkey

ABSTRACT:

Outcome measures are tools for measuring the outcome of health care interventions over time. They have been used in clinical practice and research settings to evaluate the effectiveness of treatment techniques. In low back pain (LBP), pain has been described as one of the cardinal domains to be assessed along with back-specific function, generic health status, disability and quality of life as evaluated with patient self-report measures. Measurement of pain often yields much greater treatment effect sizes, or responsiveness, than physical variables or condition-specific instruments (i.e. it is the more ‘sensitive’ measure for evaluating the effects of treatment). Finally, and of importance, the patient typically seeks care due to pain, and hence this is the variable that needs to be carefully assessed both at baseline and in response to treatment.

When dealing with acute LBP, location and intensity of pain at rest often suffices in clinical practice. However, assessment of acute pain during movement (dynamic pain) is more important than pain at rest. Research has shown that numeric scales such as visual analogue scale and numeric rating scale are superior to verbal scales in acute pain. Chronic LBP, on the other hand, is much more complicated to evaluate since it is a complex experience of multiple dimensions. Pain affect (bothersomeness), quality, frequency and impact of pain on daily activities should be assessed along with intensity and location. Categorical scales with verbal descriptors or numerical rating scales seem to be preferable to traditional visual analogue scales in chronic LBP. Other aspects such as pain coping strategies, pain tolerance and pain-related anxiety might also be important to evaluate.

Additional tools covering dimensions like functional status, quality of life, work or social disability along with specific diagnostic studies should complement the assessment of chronic LBP patients. Development of a core set of outcome domains and measurement procedures would facilitate comparison and pooling of data. The Initiative on Methods, Measurement and Pain Assessment in Clinical Trials (IMMPACT) group has proposed a core set of outcome measures for pain trials. As for disability due to LBP, many questionnaires have been used both in research and clinical settings, and recently, core sets of items have been proposed based upon the International Classification of Functioning, Disability and Health (ICF). In clinical practice, the use of these measures may present a considerable burden to patients as well as to hard pressed health care professionals. Computerized Adaptive Testing (CAT) approach for measuring disability in LBP uses a previously calibrated set of items called an item bank and selects the most informative items for each individual patient according to their level on the construct being measured. The CAT approach allows for the collection of precise outcome information that can simply be applied in both clinical and research settings.

There are still problems in what constitutes a “successful” outcome and how best to measure it in managing LBP. A statistically significant improvement may reflect a benefit that is clinically meaningless. Clinicians should be aware of the psychometric properties of the tool to be used and determinations of statistical significance must be supplemented by consideration of the clinical importance of changes in outcome measures.

Abstract No.: KL19

Abstract Title: REHABILITATION AFTER FALLS AND FRACTURES

Authors(s): Y. Dionyssiotis, IA. Dontas, D. Economopoulos, G. Lyritis.

Presenting author: Y. Dionyssiotis

Institution: Rhodes General Hospital, Rehabilitation Department, Rhodes - Greece

ABSTRACT:

Introduction: To provide information for the rehabilitation of all osteoporotic fractures and fall prevention. Methods: Falls are one of the most common geriatric syndromes threatening the independence of older persons. Elderly patients tend to fall more often, and have a greater tendency to fractures given their bones. In generally fractures occur frequently in osteoporotic people, resulting in considerable reduction of quality of life, morbidity, and mortality. results—conclusion: This presentation provides information for the rehabilitation of all osteoporotic fractures based on personal experience and literature pertaining to the rehabilitation of the fractured patient. It also outlines a suggested effective and efficient clinical strategy approach for preventing falls in individual patients. Reference: Dionyssiotis Y, Dontas IA, Economopoulos D, Lyritis GP. Rehabilitation after falls and fractures. J Musculoskelet Neuronal Interact. 2008;8:244-250.

Abstract No.: KL20

Abstract Title: EVIDENCE BASED REHABILITATION IN CHRONIC PAIN SYNDROMES

Authors(s): G. Akyuz

Presenting author: G. Akyuz

Institution: Marmara University School of Medicine, Head of Dept. of Physical and Rehabilitation Medicine, Istanbul, Turkey

ABSTRACT:

Chronic pain syndrome (CPS) is a distinct entity from chronic pain about the underlying pathology. It is a common problem that presents a major challenge to healthcare providers because of its complex natural history, unclear etiology, and poor response to therapy. CPS is an abnormal condition in which, "pain is no longer a symptom of ongoing tissue injury". In CPS, pain and pain behaviour become the primary disease process. Likelihood of developing a CPS is unrelated to pain intensity. Psychological variables such as depression, somatization, and self-perceived disability consistently have been found to be the most accurate predictors of subsequent pain syndrome development. The most common symptoms of CPSs are reduced activity, depression, strong somatic focus, relationship problems, pain behaviours, medication abuse, kinesiophobia, and poor self-esteem. The presence of CPSs strongly suggests that medical interventions (including surgery) will not be effective. Indeed, there is a difficulty in adaptation. It should incorporate both psychological and physical components like rehabilitation. The goals of rehabilitation in the patients with CPSs are to improve physical function (e.g., increase range of motion, standing, walking) and prevent further loss; to increase functional independence (e.g., increase activities of daily living (ADLs), social - recreational activities, home - domestic activities); to maintain quality of life for individuals living with CPS; to improve vocational/disability status (e.g., return to work, start job retraining); to discontinue opiate and sedative-hypnotic medications; and to reduce healthcare utilization (e.g., reduce medical procedures, inpatient admissions, outpatient office visits). The pain rehabilitation team includes physiatrist (the leader of the team), physiotherapist, occupational therapist, nurse, social worker, psychologist, dietician, recreational therapist, and other consultant specialists when needed. **Physical therapy** has a wide variety of techniques, ranging from soft tissue massage to acupuncture, to help restore and improve flexibility of muscles, tendons, and joints. It also uses various techniques for soft tissue healing, such as hydrotherapy, electrical stimulation, application of cold or heat through the use of shortwave diathermy, microwave, and US. Therapeutic exercise is an important part of physical therapy, helping to stretch and strengthen muscles and joints weakened by disease and injury. **Relaxation therapy** is beneficial to reduce anxiety, autonomic hyperactivity, and muscle tension, all seen in chronic pain states. These techniques such as imagery, progressive muscle relaxation, controlled breathing, or listening to relaxation tapes are commonly used in programs designed to manage CPSs.

Abstract No.: **KL20 (continuation)**

Abstract Title: **EVIDENCE BASED REHABILITATION IN CHRONIC PAIN SYNDROMES**

Manual therapy is defined as a clinical approach utilizing skilled, specific hands-on techniques, including but not limited to manipulation/mobilization, used by the PT to diagnose and treat soft tissues and joint structures for the purpose of modulating pain, increasing range of motion (ROM), reducing or eliminating soft tissue inflammation, inducing relaxation, improving contractile and non-contractile tissue repair, extensibility and/or stability, facilitating movement, and improving function. **Biofeedback** helps training patients to eliminate co-contraction, and teaches them to return their muscles to electrical silence after contraction. In EMG biofeedback, multiple muscle sites are scanned and activity areas are targeted for specific relaxation exercises. **Occupational therapy** is a rehabilitation process that helps individuals perform their daily activities despite the presence of any illness, disability, or injury. The goal of occupational therapy is to help individuals with compromised physical functioning adapt to their impairment(s) to regain optimal function. The purpose of **Psychotherapy** is to treat emotional, behavioral, or mental dysfunction; remove negative symptoms such as anxiety or depression; modify or reverse problem behaviors; help the individual cope with situational crises such as bereavement, pain, or prolonged medical illnesses; improve the individual's relationships; manage conflict; or enhance positive personality growth and development. **Cognitive behavioural therapy** (CBT) is to identify and correct negative, distorted, or irrational thoughts that have become "automatic" through repetition. Automatic thoughts occur when an individual is experiencing a particular situation or is recalling significant events from the past.

As a conclusion; CPS treatment requires multidisciplinary approach and rehabilitation should be integrated to the treatment. In recent years, point of view in rehabilitation with CPSs changed substantially. Physical modalities seem to lose their importance. However, therapeutic exercises, aerobic physical activities are in the most recommended preferences. Pharmacotherapy is not sufficient alone. Treatment programmes should be planned individually and should be modified if necessary.

Abstract No.: KL21

Abstract Title: **PHYSIATRIC APPROACH TO PAIN MANAGEMENT IN RHEUMATIC DISEASES: ASSESSMENT OF EVIDENCE OF EFFECTIVENESS**

Authors(s): A. Oral

Presenting author: A. Oral

Institution: Istanbul University, Istanbul Faculty of Medicine, Department of Physical Medicine and Rehabilitation, Istanbul, Turkey

ABSTRACT:

Rheumatic conditions, that are highly prevalent in the general population, are leading causes of pain and physical disability. Therefore, physiatric interventions to minimize pain with the goal of optimizing functioning of patients with rheumatic diseases experiencing or likely to experience disability are of substantial importance. It is well known that using the best evidence for the efficacy of interventions aids in the delivery of highest quality clinical care to our patients. The aim of this presentation is to provide an overview of systematic reviews to identify best practices for pain management in rheumatic diseases. To achieve this aim, the Cochrane Library and MEDLINE are searched for systematic reviews published from 2000 to August 2010 to identify the best evidence for pain management using nonpharmacological interventions pertaining to physiatry in osteoarthritis, inflammatory rheumatic diseases, soft tissue diseases, and other musculoskeletal conditions including neck and low back pain. The systematic reviews provide high-quality evidence that exercise reduce pain in both knee and hip osteoarthritis. Strengthening exercises are recommended for the management of fibromyalgia. Therapeutic exercises are also found to be beneficial for chronic, subacute, and postsurgery low back pain and neck pain as well. Therapeutic exercises and the use of low-level laser therapy, therapeutic ultrasound, thermotherapy, electrical stimulation, and transcutaneous electrical nerve stimulation for the management of rheumatoid arthritis are recommended. The use of therapeutic ultrasound in the treatment of calcific tendinitis of the shoulder has been shown to be beneficial. The existing evidence suggests that some of the complementary and alternative medicine modalities, such as acupuncture and herbal medicines, show promising efficacy in reducing pain in rheumatoid arthritis and osteoarthritis. Splinting may be helpful in relieving pain in persons with carpometacarpal osteoarthritis.

Abstract No.: KL22

Abstract Title: **BIOMECHANICS OF THE KNEE JOINT AND ITS IMPLICATION IN THE PATHOGENESIS, MANAGEMENT AND REHABILITATION OF KNEE OSTEOARTHRITIS**

Authors(s): T. S. Shafshak

Presenting author: T. S. Shafshak

Institution: Department of Physical Medicine, Faculty of Medicine, Alexandria University, Alexandria, Egypt

ABSTRACT:

Joint biomechanics is the study of joint stability, joint motion, forces acting on the joint and the structures that decrease mechanical & frictional forces acting on the human joints. Joint stability is maintained by the congruity of bones forming the joint, ligaments and muscles. Muscles move the joints and are active stabilizers that protect ligaments from tear. According to the moment law of forces, the force causing joint motion is not equal to the magnitude of muscle power, but equal to muscle power X the perpendicular distance between the joint centre of motion and the line of action of the muscle. Also, the patella acts as a pulley to change the direction of pull of the quadriceps muscle. Increased stress on the patellofemoral joint occurs during standing from sitting or squatting position.

Up to the age of 60 years, the knee joint, and most of the body joints, do not wear out because some natural factors (e.g. good joint stability, the synovial fluid, the smooth joint surfaces, the elastic articular cartilage and the subchondral trabecular bony bed) minimize the intra-articular frictional forces; and provide resistance to compressive stresses. The articular cartilage and the subchondral trabecular bony bed of the joint flatten and expand when the joint is under increased compression of loading, to provide increasing contact surface. This absorbs some of the shock of loading. Also, the articular cartilage has a smooth surface. The synovial fluid acts as a lubricant. The joint coefficient of friction was estimated to be nearly = 0.002. However, the coefficient of friction of the best known machine is approximately = 0.1. In other words, the human joint coefficient of friction is 50 times less than that of any machine. Any disturbance in the natural mechanisms that resist compressive stresses leads to failure in protecting the joint from damage. Joint instability, joint deformity, subchondral bone sclerosis (and hardening), loss of articular cartilage function, muscle weakness (or imbalance), repeated joint trauma, overweight, joint inflammation or infection, smoking and genetic predisposition are among the common causes that predispose to knee joint damage and/or the development of knee osteoarthritis (OA). These predisposing factors should be considered in the management and rehabilitation of knee OA.

Abstract No.: KL23

Abstract Title: CONSERVATIVE TREATMENT OF PATELLOFEMORAL PAIN SYNDROMES (PFPS)

Authors(s): G.Vanderstraeten, L.Vanden Bossche

Presenting author: G.Vanderstraeten

Institution: Dept. Physical and Rehabilitation Medicine, University Hospital, Gent, Belgium

ABSTRACT:

Patellofemoral pain and patellofemoral disorders are treated initially by conservative treatment. The basis of this treatment consists in correcting malalignment , bracing, stretching of shortened musculature and strengthening of quadriceps musculature. Different rehabilitation rehabilitation procedures are proposed to emphasize progression without increasing symptoms. The most appropriate conservative treatment could be a combination of open and closed kinetic chain exercises. PFPS patients may tolerate closed kinetic exercise better than open chain kinetic exercises in functional ranges of motion because of lower patellofemoral joint stresses. Consequently they may exhibit better functional results after such devised rehabilitation programs. The combination of closed and open kinetic chain exercises should be considered on the basis of the specific pathology and clinical symptoms.

Abstract No.: KL24

Abstract Title: REHABILITATION OF PATIENTS WITH OSTEOARTHRITIS-
WHAT IS THE EVIDENCE

Authors(s): E. Ilieva, R. Minchev

Presenting author: E. Ilieva

Institution: "St. George" Medical University Hospital, Plovdiv Medical University, Plovdiv - Bulgaria

ABSTRACT:

The aim of the author is to present the evidence based knowledge about the management and rehabilitation of osteoarthritis, including joint replacement in the aspect of the ICF. The author makes critical review of the data from systematic reviews, meta-analyses of RCT and existing guidelines. The management of osteoarthritis regarding the risk factors, the different interventions and the recommendations according to the grade of evidence are presented. Platinum level of evidence was found about the benefit of exercise, especially low-impact aerobic fitness and strengthening exercises, in terms of reduced pain and improved function. There is evidence of high to moderate quality that TENS, laser therapy, acupuncture have medium term pain relieving effect. Pulsed electromagnetic field improves clinical scores and function. There is insufficient evidence to support the efficiency of ultrasound therapy. The author discusses the indications for joint replacement; evidence for the need of rehabilitation and education of the patients. There is silver level evidence that early multidisciplinary postoperative rehabilitation after joint replacement improves outcome at the level of activity, but not on participation, based on the ICF model. Conclusion: There is good level of evidence about the different interventions in patients with osteoarthritis, but there are still a lot of controversies concerning physical therapy and rehabilitation. More RCT with adaptive methodology are needed to evaluate the effect of physical modalities.

Abstract No.: KL25

Abstract Title: CHRONIC PAIN SYNDROME POST CVA: EVALUATION AND TREATMENT

Authors(s): M. Grabois

Presenting author: M. Grabois

Institution: Professor and Chairman, Physical Medicine and Rehabilitation; Professor, Anesthesiology, Baylor College of Medicine; Adjunct Professor, Physical Medicine and Rehabilitation, University of Texas Health Science Center-Houston, Houston, Texas USA.

ABSTRACT:

Stroke is one of the major causes of long-term disability. Although stroke is generally considered a neurologic disorder, it is associated with a variety of musculoskeletal complications and a multitude of pain problems. Pain following stroke is very common, especially in the upper extremities, and may be a major contributor to long-term disability. Pain can impact substantially on a patient's sense of well being. For many stroke patients, chronic pain is underestimated as a factor that significantly contributes to the overall quality of life and disability.

Pain in stroke patients may originate centrally (thalamic pain syndrome), but in most patients, the pain is caused by a peripheral mechanism. Pain is generally associated with spastic hemiplegia accompanied with contractures. Because stroke is common in the elderly, pain from concomitant chronic conditions such as arthritis and other musculoskeletal conditions must be considered as well. Furthermore, there are many associated medical conditions such as venous thrombosis and peripheral neuropathies that may contribute to post stroke pain. This lecture described the common pain problems seen in stroke patients. The diagnosis, management and impact of pain on rehabilitation outcomes will be described.

Reference: Monga TN, Kerrigan AJ: Post stroke Pain. In: Pain Management in Rehabilitation. TN Monga, M Grabois (eds). Demos Medical Publishing, NYC, NY; 2002, Chapter 5:73-101.

Abstract No.: KL26

Abstract Title: STRATEGIES TO AVOID PAIN CHRONIFICATION IN PRM PROGRAMS

Authors(s): C. Gutenbrunner

Presenting author: C. Gutenbrunner

Institution: Department for Rehabilitation Medicine; Hanover Medical School, Hanover - Germany

ABSTRACT:

Introduction: Epidemiologic studies show that chronic generalized pain syndromes are found in western societies in more than 10 percent. Chronic generalized pain has high impact on functioning and quality of life and is related to high economic burden to health system and society. Studies show that pain chronification is related to changes in brain functions and alterations in pain regulation mechanisms e.g. extended representation of pain area in brain, reduced reciprocal pain inhibition at brain stem level and alterations in mediator levels, such as Anandamide, Brain-derived Neurotrophin Factor and Serotonin. Risk factors for pain chronification are among others psychosocial conflicts in private or professional live, beliefs that activities are harmful for the body, catastrophizing beliefs, depression, anxiety and resignation. Health professionals and treatment strategies can contribute to pain chronification too, e.g. by contradictory diagnosis, support of passive behavior, support of catastrophizing beliefs, insufficient pain relief and others. In the Department for rehabilitation Medicine of Hannover Medicals School based on knowledge about pain chronification mechanisms a program to avoid pain chronification has been developed and implemented.

Methods: Pain chronification mechanisms have been analyzed from literature and consequences for management of patients with high risk of pain chronification have been derived.

Results: The resulting anti-chronification strategy aims at sufficient analgesia, treatment of functional deviations in musculoskeletal system, normalizing of pain threshold and behavioral modifications. Actions are taken to diagnose underlying health condition as quickly as possible, full assessment of deviations in locomotor function, sufficient analgesic medication, assessment of pain chronification risk factors, setting-up and negotiating with the patient a detailed rehabilitation plan (including time table), patient education program including cognitive behavioral treatment, and coordinated activities within the rehabilitation team. Although the put into practice of the program is not yet accomplished a significant decrease of length of treatment has been observed.

Discussion: Pain chronification is a process of neuroplasticity leading to changes in cortical pain representation and changes in pain regulation mechanisms. Main risk factors are long lasting pain, personal risk factors and some contextual factors. It is of great importance to prevent pain chronification consequently especially in patients with risk factors. The pain anti-chronification strategy in the department of Rehabilitation Medicine at Hanover medical School seems to be successful in decreasing length of treatment phases, however, the efficacy has to be evaluated in future studies.

Abstract No.: KL27

Abstract Title: COMPLEX REGIONAL PAIN SYNDROME: DIAGNOSIS AND TREATMENT

Authors(s): A. A. Küçükdeveci

Presenting author: A. A. Küçükdeveci

Institution: University of Ankara, Faculty of Medicine, Department of Physical Medicine and Rehabilitation

ABSTRACT:

Complex Regional Pain Syndrome (CRPS) is a chronic pain syndrome of an extremity characterized by variable dysfunctions of neuromusculoskeletal, skin and vascular systems, usually occurring after a noxious triggering event. Main features include focal pain and sensory changes associated with findings such as abnormal skin colour, temperature changes, abnormal sudomotor activity and edema and often significant impairment of motor function and trophic changes. CRPS-Type I corresponds to reflex sympathetic dystrophy and occurs without a definable nerve lesion. In CRPS-Type II, formerly called causalgia, a definable nerve lesion is present. CRPS should be regarded as a biopsychosocial disorder, whereby psychological, behavioral and pathophysiological factors interact in a complex manner. The possible underlying pathophysiological mechanisms are complex including involvement of both peripheral and central nervous system.

The diagnosis of CRPS relies on clinical findings and the exclusion of conditions that could account for the degree of pain and dysfunction. No specific diagnostic test is available. Diagnostic procedures such as plain skeletal x-rays, 3-phase bone scans, thermography, and magnetic resonance imaging may be valuable to facilitate the diagnosis. Early diagnosis and treatment, results in a better outcome. The current treatment of CRPS is mainly empirical and requires interdisciplinary approach to achieve pain relief and functional restoration. Treatment strategies include pharmacotherapy, physical and occupational therapy, psychotherapy and interventional therapies. In this presentation, current procedures and recent advances in the diagnosis and treatment of CRPS will be overviewed.

Abstract No.: KL28

Abstract Title: SARCOPENIA: THE IMPORTANCE OF EXERCISE

Authors(s): W. R. Frontera

Presenting author: W. R. Frontera

Institution: Dean and Professor, Departments of Physical Medicine and Rehabilitation, and Physiology, Faculty of Medicine, University of Puerto Rico, San Juan and Lecturer, Department of Physical Medicine and Rehabilitation, Harvard Medical School, Boston, Massachusetts, USA

ABSTRACT:

By the year 2025, the number of people above age 60 in all the countries in the world will exceed one billion. The main challenge associated with advanced adult age is the dramatic decline in functional capacity and the associated loss of independence, morbidity and mortality. Since maximal physiological capacities are greatly diminished with age, the ability to perform physical tasks at the same level of energy expenditure or muscular force becomes limited. One important contributor to the functional loss leading to impairment and disability is the decline in skeletal muscle mass (sarcopenia) and strength. Cross-sectional and longitudinal studies have shown significant reductions in isokinetic strength in the range of 15.5 to 26.7%. A reduction in muscle size explains, at least partially, the muscle weakness but the amount of non-contractile tissues has also been shown to increase. We have reported an age-related reduction in muscle quality (specific force) of single muscle fibers. At least three molecular/cellular mechanisms may contribute to a qualitative alteration in myosin: 1) a problem in gene transcription; 2) a decline in protein synthesis resulting in a lower myosin concentration per fiber; and/or 3) post-translational modifications of the myosin protein such as glycation and oxidation. Alone or in combination, these changes could alter the basic properties of the molecule resulting in a reduction in the force generated per muscle fiber cross-bridge. Since 1988, many studies have demonstrated that strengthening exercises result in significant improvements in muscle function and structure as well as in the performance of functional tasks. Most training studies have used 5-15 repetitions per set, 2 to 6 sets per session for each muscle group, training frequency of 2 to 5 days per week, and a training intensity of 40 to 90% of the one repetition maximum. The relative magnitude of the strength gains ranges between 10 and 180% of the baseline. The adaptations in strength are noticeable after a few days of training and are more significant when the testing technique is similar to the training method suggesting the presence of neural adaptations. The majority of studies have reported significant whole muscle hypertrophy (2.0-14.5%) and increases of up to 30% in cross-sectional area of both type I and type II fibers. At the cellular and ultrastructural levels, significant increases in the maximal force and cross-sectional area of type I and IIa single muscle fibers after 12 weeks of progressive resistance training have been reported. These physiological alterations are accompanied by increases in protein synthesis, a reduction in markers of inflammation, and activation of satellite cells. It may be possible to enhance exercise-induced changes with dietary protein and hormones. It is unclear if the latter can be safe in the long-term. More recently, exercise programs have been modified to emphasize increased velocity training and functional training with excellent results. If the age-associated decline in muscle strength is partially reversed, it may be possible for the elderly to maintain physical independence and perform, once again with submaximal efforts, many of the activities of daily living.

Abstract No.: KL29

Abstract Title: PLATELET RICH PLASMA TREATMENT IN SPORTS MEDICINE

Authors(s): G.Vanderstraeten, L.Vanden Bossche

Presenting author: G.Vanderstraeten

Institution: Dep .Physical and Rehabilitation Medicine University Hospital ,Gent - Belgium

ABSTRACT:

It is a fundamental fact that every athlete with a muscle, tendon or ligament injury wants to regain physical fitness as soon as possible.

More and more attempts are being made to replace faster ‘tissue repair’ by faster ‘tissue regeneration’ to minimize sports disability and to allow early rehabilitation.

The aim is to accelerate the natural processes without damaging the body.

Platelet Rich Plasma (PRP) is obtained by centrifugation of autologous blood.

Platelets are a source of growth factors, such as transforming growth factor beta, vascular endothelial growth factor , and platelet-derived growth factor, which are responsible for tissue repair and regeneration.

Growth factors are biologically active polypeptide molecules that interact with specific cell surface receptors, leading to responses that are dictated by the receptor-mediated signal transduction pathways of the target cells. Growth factors are unique because they stimulate the growth or proliferation of these target cells.

Chronic or acute tendinopathies, tendon ruptures, muscle ruptures, ligament ruptures, nonunions and stress fractures are the most important indications for PRP treatment.

At our department many pilot studies have been performed. Importantly no patient was worse after treatment. After three weeks we observed marked pain relief and less swelling (in chronic tendinopathies).

More controlled research has been planned and will be started soon.

Abstract No.: KL30

Abstract Title: PHYSICAL AND REHABILITATION MEDICINE AND SPORT

Authors(s): C. Foti

Presenting author: C. Foti, S.A. Cassarino, L. Giordani

Institution: Physical and Rehabilitation Medicine Chair - Tor Vergata University in Rome - Italy

ABSTRACT:

Physical and Rehabilitation Medicine (PRM) is a specialized medical discipline with teaching duties, research and care for the prevention, assessment and treatment of disabilities resulting from diseases of congenital origin or acquired. It has its own body of work overall evaluative, diagnostic, therapeutic and other procedures to bring the disabled person to move, walk, talk, dress, eat and communicate effectively, and above him back active in the family, workplace, school and social life. The PRM is a matter of teaching in various courses degrees in health degrees (physiotherapists, occupational therapists, speech therapists) and non strictly Health degrees (Sports Science), the single cycle degree courses (Medicine and Surgery), course of specialization medical schools and several PhDs.

Physical and Rehabilitation Medicine within the degree course in Sports Science and in Magisterial degrees in SS has aggregated a decisive role in the formation of student: His is the task of clarifying the fundamental concepts of disability and quality of life, clarify the relationship of contiguity between Sport Scientists and Physiotherapists, and explain the techniques useful for modulation of workout programs tailored to various disabilities.

The Physiotherapist (PT) helps the patient in functional recovery with regard to impairments and disabilities of whatever cause. Therefore applies, in the Therapeutic Program, led by a Physiatrist, and under its responsibility in its implementation, the basic techniques and special therapeutic exercise and functional rehabilitation, massage and Physical Agents Techniques. Graduate in Sport Sciences (MS) in turn assist the person during clinical stability and functional recovery and prevention of motor skills aimed at fitness and sport. Apply within the program workout led by a Physiatrist or other Physician, and under its responsibility in carrying out the same, the techniques of physical education with the aim of enhancing the agility of the individual. Then there is a clear distinction: the Therapeutic Exercise the PT puts in place is defined as a way of learning useful in achieving a better motor quality (skill); it is a useful tool to recover lost skills, and is put into place in stages of post-acute phases; requires an environment with strong characterization in Health Facilities. The exercise workout that MS implements the person is defined as a way of learning useful in achieving a better motor quantity (agility) is a useful tool to recover lost agility, and maintain the ability recovered, is put into act on the person who has reached a stage of clinical and functional stability, does not require an environment with strong characterization in Health Facilities, although they use them in some specific cases.

Abstract No.: KL31

Abstract Title: ORGANIZING AN EDUCATIONAL PROGRAM FOR REHABILITATION PERSONNEL (BASED ON THE CYPRUS UNIVERSITY OF TECHNOLOGY MODEL)

Authors(s): M. Grabois

Presenting author: M. Grabois

Institution: Professor and Chairman, Physical Medicine and Rehabilitation; Professor, Anesthesiology, Baylor College of Medicine; Adjunct Professor, Physical Medicine and Rehabilitation, University of Texas Health Science Center-Houston, Houston, Texas USA

ABSTRACT:

This presentation will discuss the newly approved Cyprus University of Technology Therapy Program. The emphasis will be on the need, developing the proposal, obtaining approval of the proposal and finally, the implementation plan.

In 2007, Fofi Constantinidou, Ph.D, CCC-S brought together a group of rehabilitation health care professionals that met twice in Cyprus to develop the concept. The group reviewed the need for the program, reviewed other programs in the United States, Europe and Israel and developed a plan for the program including a curriculum and resources needed to implement the program. The program will consist of undergraduate and graduate degrees in physical therapy, occupational therapy, social work, speech therapy, and developmental diseases. It took a number of years for the program to be approved by the university and government which finally occurred in early 2010. Now a plan to implement the program is underway.

This presentation will, hopefully, serve as a model on how similar programs can be addressed in underdeveloped and developing countries.

Abstract No.: KL32

Abstract Title: FROM EUROPE TO WORLD ACTION PLAN FOR INITIAL EDUCATION IN PRM (WAPIE PRM): STATE OF THE ART

Authors(s): X. Michail, F. Franchignoni, J-M Viton, G. Vanderstraeten, A. Delarque.

Presenting author: X. Michail.

Institution: ATEI-Athens, Greece,
UEMS PRM Board.

ABSTRACT:

Education is the most important part of medical-science training. Assessment of training programmes and examination of trainees' skills are necessary to guarantee that trainees develop competence. Initial education of Physical & Rehabilitation Medicine (PRM) trainees is a crucial issue for the future of the specialty.

UEMS European Board in PRM has realized that training programmes vary between and within countries, as well as that there was a need for an action plan in the field of Education. Therefore a new action plan has been set up for the years, 2006-2010, which has been proposed and presented as **World Action Plan for Initial Education in PRM (WAPIE PRM)**.

The three main targets were to teach PRM activities to undergraduate medical trainees in all medical schools, to spread recent advances of knowledge to PRM trainees, and to involve all PRM trainees in research activities.

In 2010, after a 4-year activity: a) in many countries, PRM specialists along with disabled persons associations have advocated the creation of teaching programmes on disability to undergraduate medical trainees; b) In PRM National and European Congresses, PRM trainees have already benefited from reduced fees and special sessions dedicated to them have been organised; and c) in many PRM international Journal, and in the UEMS Section and Board website educational articles are available with free access. Summer schools as European School Marseille or 'Haim Ring' School Syracuse, etc. continue their free PRM teaching programmes, including training in research (methodology, scientific communication...), and management techniques.

Abstract No.: KL33

Abstract Title: UEMS PRM BOARD: UNDERGRADUATE TRAINING CURRICULUM, BOARD CURRICULUM AND LOGBOOK

Authors(s): G. Vanderstraeten, S. Moslavac , C. Marincek, N. Christodoulou, F. Dincer, R. Frischknecht

Presenting author: G. Vanderstraeten

Institution: Dep .Physical and Rehabilitation Medicine University Hospital ,Gent – Belgium
UEMS PRM Board

ABSTRACT:

The European Board of Physical and Rehabilitation Medicine is a Working Group of Physical and Rehabilitation Medicine Section of the Union Européenne des Médecins Spécialistes (U.E.M.S., European Union of Medical Specialists). It was founded by a separate statute in 1991.

The Board is interested in defining in clear terms "European Standards", i.e. the basic elements for a European training program, the opportunities and conditions for training rotation, attachments, exchanges and the average level of required knowledge and technical competence. More specifically, Board aims are to harmonize the training in E.U. so as to ensure optimal rehabilitative care for patients in the countries of European Union. In addition, the Board will pursue the objectives of UEMS in so far as they apply to Physical and Rehabilitation Medicine

The main activities of the Board are: Harmonization of PRM training in Europe, Certification of PRM specialists (by examination and equivalence), Certification of PRM trainers, Certification/Recertification of PRM training centres, Continuing Medical Education and Recertification of PRM Specialists, Accreditation of European congresses and Teaching Programs.

In the European harmonization of training a working group was installed to propose the content of the undergraduate training curriculum and to update the content of the European curriculum of PRM trainees.

A proposal on the content of the undergraduate training is summarized based on the data of a survey in the European countries.

The content of the curriculum is still under debate and the final conclusion will be made in the near future. The old curriculum can be found in the White book and in the Logbook. It is also obvious that one should focus on the skills of the trainee anno 2010: the trainee as “physician”, “communicator”, “manager” and “researcher”.

A logbook was set up since 1991 but in the near future an electronic version will be available to fill in the activities, the skills and scientific activities of the trainer.

Abstract No.: KL34

Abstract Title: UEMS PRM BOARD E-BOOK ON EDUCATION AND OTHER EDUCATIONAL ACTIVITIES

Authors(s): F. Franchignoni F¹, N. Barotsis², X. Michail³, J-M Viton⁴, S. Moslavac⁵, N. Christodoulou⁶

Presenting author: N. Barotsis

Institution: ¹ UEMS PRM Board, President – Veruno (NO), Italy
² UEMS PRM Board, Greek Delegate & assistant Webmaster – Naxos, Greece
³ UEMS PRM Board, Past President – Athens, Greece
⁴ UEMS PRM Board, Incoming President – Marseille, France
⁵ UEMS PRM Board, Deputy Secretary - Varazdinske Toplice, Croatia
⁶ UEMS PRM Section & Board, Secretary General – Limassol, Cyprus

ABSTRACT:

The mission of UEMS (European Union of Medical Specialists) PRM (Physical and Rehabilitation Medicine) Board is to harmonize PRM training in UEMS member countries, setting the quality standards for educational services.

A major project is the European Curriculum of training in PRM, on which all procedures of European Board certification are based. The last version was published by the Board in 2005 and a new, updated version is currently under elaboration. Furthermore, to support the preparation of candidates for European Board examination, besides the reference books presented on the official website (www.euro-prm.org), the Board is elaborating an e-book on PRM education. The e-book is expected to be published in the second half of 2010. It will cover all chapters of the European PRM Curriculum through links to free internet resources, mainly selected from open-access international PRM books and journals.

To support education and promote lifelong learning in the field of PRM, the Board undertakes a series of activities. The website dedicated to education (www.euro-prm.org/elearning) offers access to free e-books, self assessment activities and a forum for registered trainees and Board fellows. A periodic newsletter with educational resources and news regarding scientific events is sent to registered doctors. Dedicated and joint sessions are organized by the Board in national and international congresses. Scientific awards are offered in European PRM congresses in order to promote research among trainees. In collaboration with PRM school organizers (European School Marseille & Euro Mediterranean PRM School “Haim Ring” in Syracuse) free participations is provided to registered trainees.

The UEMS PRM Board supports the learning process from initial education to the completion of professional development, providing selected scientific material, educational activities and certification procedures.

Abstract No.: KL35

Abstract Title: INTERNATIONAL TEACHING PROGRAMME FOR PHYSICAL AND REHABILITATION MEDICINE TRAINEES

Authors(s): A. Delarque

Presenting author: A. Delarque

Institution: Medecine Physique et de Readaptation CHU TIMONE - Marseille - France
UEMS PRM Section President

ABSTRACT:

« ITP PRM Cofemer 2010 Marseille »

13-16 October, University Hospital La Timone and Parc Chanot. Coordinated by the French Board of Academic Physiatrists Cofemer, in partnership with French PRM associations: Sofmer, Syfmer, Ajmer & Fedmer, the Journal Annals of Physical and Rehabilitation Medicine (Annals PRM) the Institut Fédératif de Recherche sur le Handicap (IFRH) & the Union of European Medical Specialists Board of PRM.

A high level International Teaching Programme for PRM Trainees “ITP PRM Cofemer 2010 Marseille” will be held from 13th to 16th October 2010 in Marseille France.

This high level teaching program will be assumed by university professors and PRM experts in different fields, from France and other European countries.

Fifty trainees will participate in this program. Half of them will come from European countries out of France. All will have to be registered to the UEMS PRM Board and to be proposed by their head of department and board national manager.

With a low cost registration (45€), trainees will benefit from free accommodation and free lunches on the site of the congress “PRM SOFMER 2010 Marseille” and a free evening event which will be organized with the trainees and the lecturers in order to facilitate contacts.

The teaching programme will be based on lectures, workshops and meetings with experts.

The lectures will be available online for free after the congress on the websites of the “Cofemer” the “Sofmer”, and the Board.

Abstract No.: KL36

Abstract Title: NEW APPROACHES TO DESCRIBE THE FIELD OF COMPETENCE AND SERVICES OF PHYSICAL AND REHABILITATION MEDICINE

Authors(s): C. Gutenbrunner

Presenting author: C. Gutenbrunner

Institution: Department for Rehabilitation Medicine; Hanover Medical School, Hanover - Germany
UEMS PRM Section – Chair Professional Practice Committee.

ABSTRACT:

In the working plan 2010-2014 of the Professional Practice Committee of the UEMS-PRM-Section the description of the field of competence of Physical and Rehabilitation Medicine (PRM) had high priority. Related to this the services of PRM need to be defined too. Additionally the health conditions and disabilities the specialty addresses to need explanation. The following approaches were chosen:

- Looking at the medical knowledge, skills and aptitudes including diagnostic and assessment skills, therapies, and team work. This also includes the description of diseases treated and disabilities rehabilitated. Such description relates to three international health classifications that are the International Classification of Diseases (ICD), the international Classification of Functioning, Disabilities and Health (ICF), and the International Classification of Health Interventions (ICHI)
- Taking the approach to describe the goals and strategies of the specialty on the basis of the ICF
- Looking at the context the PRM specialist is working in reflecting the micro- (patients, facilities etc.), meso- (e.g. services), and macro-level (e.g. epidemiology of functioning, health policies). Such an approach leads to look at the International Classification of Health Accounts – Health Care (ICHA-HC)
- Describing the role of PRM specialists in treatment and rehabilitation of persons with specific diseases and deficits in functioning, e.g. musculoskeletal disorders, chronic pain or brain injury.

As result of this work will the field of competence of PRM has been described highlighting the clinical skills and aptitudes in diagnostics and assessment of health conditions and functional deficits as well as treatment and rehabilitation. The conceptual description of the rehabilitation strategy and of PRM has been updated and adopted by the ESPRM and the UEMS-PRM Section and Board. The work to describe the settings PRM specialists are working in using the framework of a health care matrix still is still in progress. The contribution of PRM in health care concepts for specific needs will be subject of an ebook on the Field of Competence in Physical and Rehabilitation Medicine published by the UEMS-PRM Section.

Abstract No.: KL37

Abstract Title: TEAM WORK IN REHABILITATION

Authors(s): V. Neumann¹, C. Gutenbrunner², V. Fialka-Moser³, N. Christodoulou⁴, E. Varela⁵, A. Giustini⁶, A. Delarque⁷ & Professional Practice Committee⁸, Physical & Rehabilitation Medicine Section, UEMS

Presenting author: V. Fialka Moser

Institution: ¹UEMS-PRM-Section – UK delegate & member of Professional Practice Committee,
²UEMS-PRM-Section – German delegate & Chairman of Professional Practice Committee,
³UEMS-PRM-Section – Austrian delegate & member of Professional Practice Committee,
⁴UEMS-PRM-Section – Cypriot delegate & member of Professional Practice Committee,
⁵UEMS-PRM-Section – Spanish delegate & member of Professional Practice Committee,
⁶UEMS-PRM-Section – Italian delegate & member of Professional Practice Committee
⁷UEMS-PRM-Section – French delegate & President of Physical & Rehabilitation Medicine Section
and UEMS PRM Section – Professional Practice Committee.

ABSTRACT:

Effective team working plays a crucial role in Physical & Rehabilitation Medicine (PRM). As part of its role of optimizing & harmonizing clinical practice across Europe, the Professional Practice Committee of Union of European Medical Specialists (UEMS) Physical & Rehabilitation Medicine (PRM) Section has reviewed patterns of team working and debated recommendations for good practice at a meeting of national UEMS delegates held in Riga, Latvia in September 2008. This consensus statement is derived from that discussion & from a review of the literature concerning team working.

Effective team working produces better patient outcomes (including better survival rates) in a range of disorders, notably following stroke. There is limited published evidence concerning what constitute the key components of successful teams in PRM programmes. However, the theoretical basis for good team-working has been well-described in other settings and includes agreed aims, agreement & understanding on how best to achieve these, a multi-professional team with an appropriate range of knowledge & skills, mutual trust & respect, willingness to share knowledge & expertise & to speak openly.

UEMS PRM Section strongly recommends this pattern of working. PRM specialists have an essential role to play in interdisciplinary teams; their training and specific expertise enables them to diagnose and assess severity of health problems, a prerequisite for safe intervention. Training spans 4 to 5 years in Europe, and includes knowledge and critical analysis of evidence-based rehabilitation strategies. PRM physicians are therefore well-placed to coordinate PRM programmes and develop and evaluate new management strategies. Their broad training also means they are able to take holistic view of an individual patient's care.

Key words: interdisciplinary; team work; physical & rehabilitation medicine; organization; networks; care pathways.

Abstract No.: KL38

Abstract Title: PHYSICAL & REHABILITATION MEDICINE IN ACUTE SETTINGS

Authors(s): A. B. Ward, C. Gutenbrunner, H. Damjan, A. Giustini, A. Delarque.

Presenting author: A. B. Ward

Institution: North Staffordshire Rehabilitation Centre, Haywood Hospital, Stoke on Trent, UK.
UEMS PRM Section Past President – Professional Practice Committee.

ABSTRACT:

Starting PRM programmes early following the onset of a health condition provides specialist medical interventions during acute hospital admissions and potentially reduces inpatient stays in acute beds. The point of entry is defined as when “the priority of care has moved from the definitive acute treatment to one of rehabilitation” and it is at this time that the PRM specialist takes the lead for clinical care. In reality, once definitive care or resuscitation has taken place, a patient’s inpatient stay in hospital is primarily for rehabilitation and dedicating facilities, including beds, for this purpose will bear fruit to meet healthcare priorities.

Early rehabilitation describes PRM interventions within the first month of a hospital admission following a disabling health condition. This presentation reports on a published article¹ and describes the strategy, the options and, as an example, an evidence based care pathway following a study on PRM interventions on brain-injured patients in the intensive care unit. It will also describe the categories of suitable patients for early PRM programmes.

Below are some examples of how it may be delivered.

- i. Transfer of patients to specialist beds in the acute hospital;
- ii. Establishment of mobile rehabilitation teams while the patient remains in the referring specialist’s bed;
- iii. Daily visits to the acute wards by specialists from a stand-alone rehabilitation facility;
- iv. Establishment of rehabilitation centres to take patients in the very short term.

1. Ward A B, Gutenbrunner C, Damjan H, Giustini A, Delarque A. J Rehabil Med 2010; 42: 417–424.

Abstract No.: KL39

Abstract Title: PHYSICAL REHABILITATION MEDICINE IN LYMPHOEDEMA

Authors(s): V. Fialka-Moser

Presenting author: V. Fialka-Moser

Institution: Dept. of Physical Medicine and Rehabilitation, Medical University Vienna, Austria.
UEMS PRM Section – Professional Practice Committee.

ABSTRACT:

Lymphoedema is defined as an abnormal collection of excessive tissue proteins, edema, chronic inflammation and fibrosis. It results from an abnormality of, or damage to the lymphatic system. For the patient Lymphoedema is deeply disturbing physical and psychical health, involving loss of function and psychological distress, resulting in diminished quality of life. It remains a significant, long-term problem for many cancer survivors.

Lymphoedema strategies for management are

- to educate patients about Lymphoedema and encourage participation in a home program
- to stimulate the lymphatic system in order to promote a reduction of edema
- to prevent further accumulation of edema
- to reduce or prevent the recurrence of infection
- to help patients cope with the psychological sequelae of Lymphoedema
- when possible to involve friends and family in the patient's care

Complex physical therapy or decongestive lymphatic therapy is the state-of-the-art therapeutic approach to Lymphoedema. It involves a two-stage treatment program. The first phase consists of skin care, manual lymphedema treatment (MLT), remedial exercises and compression applied with multi-layered bandage wrapping. Phase two (initiated immediately after phase one) aims to conserve and optimize the results obtained in phase one. It consists of compression by low-stretch elastic stockings or sleeves, skin care, remedial exercises, and repeated manual lymphedema treatment as necessary.

The effectiveness of various components differs. The importance of compression therapy both in the intensive lymphatic therapy and in the long-term treatment is emphasized. The patients should carry out self-bandaging and wear compression garments. The education and motivation of patients to compliance are crucial.

Psychological support and quality of life improvement program are integral components of any treatment of lymphedema.

Abstract No.: KL40

Abstract Title: THE CONCEPT OF PRM PROGRAMMES OF CARE AS A BASIS FOR QUALITY APPROACH

Authors(s): J. Lains¹, G. de Korvin²

Presenting author: J. Lains

Institution: ¹Centro de Medicina de Reabilitacao Regiao Centro – Hospital Rovisco Pais - Portugal
²Centre Hospitalier Privé Saint-Grégoire –France
^{1, 2}UEMS PRM Section – Clinical Affairs Committee.

ABSTRACT:

The Clinical Affairs Committee of the UEMS PRM Section deals with Quality of Care in our specialty practice.

The PRM Programme of Care is the working basis of our Quality Approach. A PRM PC is defined by the following elements:

- the epidemiological needs and scientific evidence that support the programme design;
- the target population, with its inclusion and exclusion criteria;
- clearly-defined aims and goals, expressed in the terms of the International Classification of Functioning, Disability and Health (ICF);
- a well-structured body of content, describing the programme timetable, potential phases, diagnosis and assessment tools (for initial, follow-up and discharge assessments), scheduled interventions (direct treatment and rehabilitation) and the exact role played by each programme participant;
- human resources and equipment, as well as appropriate team management procedures; and
- discharge criteria and a final report with recommendations for long-term patient follow-up

Abstract No.: KL41

Abstract Title: THE EUROPEAN ACCREDITATION OF PRM PROGRAMMES OF CARE: A PEER REVIEW PROCESS

Authors(s): J. Lains¹, G. de Korvin²

Presenting author: J. Lains

Institution: ¹Centro de Medicina de Reabilitacao Regiao Centro – Hospital Rovisco Pais - Portugal
²Centre Hospitalier Privé Saint-Grégoire –France
^{1, 2}UEMS PRM Section – Clinical Affairs Committee.

ABSTRACT:

The European Accreditation of PRM PC is the working method to reach this goal of improving our clinical practice throughout European countries. Two important stages should be carefully considered:

- *the elaboration and implementation of the Programme of Care*, with special attention to the qualitative and quantitative description of the local context, the reasons for creating such a programme and the choices that had to be made based on the available resources;
- *the assessment of the outcomes* in a programme that is already stable organisationally. The difficulties encountered, the problems that had to be solved, and the pitfalls that should be avoided are also interesting to report. These factors can become the starting point for new programme developments, as is done in the Deming Wheel.

Completing both these stages is not required before submitting a PRM-PC for European PRM Accreditation. In fact, if the process has been carefully managed, the first stage will elicit very useful information. Implementing the second stage doesn't mean an extensive assessment of numerous parameters, which is likely to be incompatible with a normal daily practice.

European Accreditation is a friendly peer reviewing process. Reviewers will help you to describe your daily PRM clinical practice in a structured and valuable way. An oral presentation of your programme is possible during our twice-a-year workshops, before submitting a written description of your programme.

Accredited PRM PC will be displayed on this website as part of the Ebook on Quality of Care. Their authors will be encouraged to give papers about their programmes during UEMS PRM Quality of Care sessions in several European and National PRM congresses and to submit papers in the European journals of our specialty.

So far, 11 PRM PC have been accredited during the pilot phase of the European Accreditation and 13 programmes are currently being reviewed through the new procedure. We are now looking forward to hearing or reading a programme of your own!

Full information on www.euro-prm.org > Clinical Affairs

Abstract No.: KL42

Abstract Title: PRM PROGRAMS OF CARE FOR TRAUMATIC BRAIN INJURED PERSONS IN THE COMMUNITY

Authors(s): A. Delarque, M. Delarque

Presenting author: A. Delarque

Institution: Dept. Medecine Physique at de Readaptation, CHU-Timone, Marseille, France.

ABSTRACT:

Title:

Two ambulatory Physical and Rehabilitation Medicine Programs of Care (PRM-PC) for traumatic brain injured persons (TBI) in the community

Objectives:

To describe two complementary PRM-PC devoted to TBI.

The first one is a medico-social community based PRM-PC aimed to improve quality of life. The second PRM-PC is an ambulatory PRM-PC within a university hospital focused on the evaluation of lesions and functions.

Methods:

The two PRM-PC are described following the methodology of the PRM Section / UEMS based on ICD, ICF and ICHI.

Results:

The community based PRM-PC so called “SAMSAH TC-CL 13” is specialised to support TBI. It is based on a project of life. The mobile team of the SAMSAH TC-CL 13 evaluates personal factors, activity limitations, participation restrictions and the environment of the persons. The SAMSAH TC-CL 13 health interventions are based on the persons and their environment. The second program relies on an interprofessional and interdisciplinary evaluation in a university hospital.

In both programs the physiatrist is a key person. The physiatrist is also the link between these two complementary programs.

Discussion:

These two comprehensive and complementary programs are useful to improve quality of life of TBI persons and their families.

Abstract No.: KL43

Abstract Title: OVERVIEW OF UPPER LIMB PROSTHETICS

Authors(s): Prof. Crt Marincek

Presenting author: Prof. Crt Marincek

Institution: University Rehabilitation Institute, Ljubljana, Slovenia

ABSTRACT:

The presentation will review all aspects of upper limb amputation and related prosthetics. Technical and functional aspects of prostheses for upper limbs will be explored and recent trends in research and development presented. Return to everyday life and work after upper limb amputation will be considered as well.

Upper limb amputation is one of the most obvious manifestations of physical loss and physical impairment. It results from congenital deficiency or an acquired causation.

The human hand is a miraculous biologic achievement that allows us to perform the most sophisticated tasks. Range of motion, dexterity and strength all play a role in upper limb functionality, but it is the sense of touch, used to convey feeling and emotion, which cannot be replaced with artificial limbs.

The following amputation levels require special consideration: partial hand, transcarpal, transradial, elbow disarticulation, transhumeral, glenohumeral and higher level. Prosthetics options include no prosthesis, cosmetic, passive, body powered, electrically powered, hybrid and activity specific prosthesis.

Research and development in upper limb prosthetic technology can be divided into following categories: treatment protocols, prosthetic interface, materials, microprocessor technology, terminal devices, and osseointegration. Some paediatric prosthetic centres are fitting children 3-5 months old with either a passive or a myoelectric arm.

Following upper limb amputation, many have to change their work and/or work only part time. Vocational rehabilitation and counselling should thus become a part of rehabilitation programmes for all such people of working age.

In conclusion, the gap between prosthetic reality and upper limb physiology is diminishing. Micro surgeons are also getting better and better in hand transplantations

Abstract No.: KL44

Abstract Title: FUNCTIONALITY OF LOWER LIMB AMPUTEES

Authors(s): A. F. Al-Worikat

Presenting author: A. F. Al-Worikat

Institution: National Centre for Amputee Rehabilitation (NCAR), Amman, Jordan.
Royal Rehabilitation Centre King Hussein Medical Centre (KHMC), Amman, Jordan.

ABSTRACT:

Objectives:

To assess the functional outcome of the lower limb amputees fitted with prosthesis, and to evaluate some of the prognostic determinants of the amputee rehabilitation

Methods:

Patients with lower limb amputations fitted with prostheses were assessed in the NCAR at KHMC during 2008 & 2009 .Two measures of functional outcome were used, the Russek's classification and the Locomotor index.

Results:

101 amputees with 108 amputations were included. 85 were males and 16 were females with a ratio of 5:1, mean age was 48.5 years. Trans – tibial amputations were the majority and trauma was the leading cause .The median Russek's classification and median Locomotor index scores achieved by the amputees were 4.2 and 32.5 respectively. Males, young age, trans – tibial, traumatic and amputees wearing prosthesis more than one year were obtained better scores than females, old age, trans-femoral, amputees due to diseases and amputees wearing prosthesis less than one year in both functional outcome measures.

Conclusion:

The Functionality of our amputees are considerable .All prognostic determinants evaluated in our amputees were similar with the literature apart of the sex .we recommend further studies to investigate the functional outcome for large group of our amputees.

Abstract No.: KL45

Abstract Title: THE DEPARTMENT CHAIRPERSON – MANAGEMENT AND LESSONS LEARNED

Authors(s): J. A. DeLisa

Presenting author: J. A. DeLisa

Institution: Department of Physical Medicine and Rehabilitation-UMDNJ-New Jersey Medical School,
Newark, New Jersey USA

ABSTRACT:

Introduction: The Chair is responsible for the clinical, educational and research direction of the department. The department's mission, goals and direction needs to complement that of the Medical School/University. The driving force in each area must be quality.

Methods: This paper includes the observations of a senior US physiatrist who has served as Department Chairman for 23 years.

Results: The most difficult answer for a chair to give is NO, but he/she must. Communication is key and there never is enough. It is essential to have faculty members on the key hospital and medical school committees. The department should have its' own committees with respect to undergraduate, graduate, and continuing medical education as well as research and clinical care. A strategic plan can be helpful if it is blended with that of the medical school/hospital and does not constantly change priorities/direction.

Conclusions: Issues such as collaboration/competition, advocacy and priority are very important to the department's success. What is the perceived value of the department to the medical school and hospital? What is the financial status of the medical school, the hospital, and the department? A key issue is how long should one serve as chair? When should one step down? What does one do when they step down?

Abstract No.: KL46

Abstract Title: 2010 ISSUES IN FUNDING MEDICAL REHABILITATION:
THE US EXPERIENCE

Authors(s): J.L. Melvin

Presenting author: J.L. Melvin

Institution: Jefferson Medical College, Philadelphia - USA

ABSTRACT:

Introduction: The funds available to provide rehabilitation medicine services significantly influence the ability of Physical and Rehabilitation Medicine (PRM) physicians to rehabilitate their patients. In the US, the government payment system continuously reviews ways to limit its costs for these services, particularly now when the US President has signed a Healthcare Reform Law that will significantly increase the proportion of the population eligible for medical care. The purpose of this paper is to identify a number of the funding issues likely to impact the services PRM physicians can provide, and to suggest ways they might respond to be as effective as possible.

Methods: This paper includes the observations of a senior US physiatrist who has been active in formulating strategies to maximize the funding of rehabilitation services.

Results: Funding issues for rehabilitation medicine include three categories: reimbursement (payment), patient eligibility for services and provider eligibility to receive payment. (1) Reimbursement. The magnitude of payments for services significantly impact their quality and effectiveness. Different government payment programs in the US provide varying levels of payment. The cost of providing services increases annually. Healthcare Reform calls for a reduction in the adjustments needed to cover these changes. This legislation also uses payments to incentivize provider behavior, such as primary care coordination, reducing hospital readmissions or limiting the utilization of rehabilitation services. (2) Patient eligibility. Patients needing rehabilitation vary significantly in the services they require and the intensity of these services. Government payers tend to regulate patient eligibility for services without adequate consideration of this variability. (3) Provider eligibility. Multiple regulations define which providers are eligible to deliver rehabilitation services. For instance, rehabilitation hospitals cannot count pulmonary, cardiac or cancer patients for eligibility.

Discussion: Many of these funding issues are the result of government efforts to provide universal, effective, safe and efficient health care. Some of them result in unintended consequences that limit legitimate rehabilitation services. US rehabilitation facilities and PRM physicians have successfully altered some of the regulations that would reduce the effectiveness of medical rehabilitation, but not all. One strategy is to bundle rehabilitation services, but use rehabilitation professionals to decide which patients need.

Conclusion: PRM physicians and their organizations need to continuously provide political input towards rationalizing medical rehabilitation funding regulations. They need to organize their practices to access as many services as possible for their patients.

Abstract No.: KL47

Abstract Title: ETHICAL ISSUES IN REHABILITATION

Authors(s): V. Rodriguez de la Cruz

Presenting author: V. Rodriguez de la Cruz

Institution: Dept. of PM&R and Sports Medicine, University of Puerto Rico, School of Medicine – Puerto Rico

ABSTRACT:

The increasing demands of the public and the professional responsibilities on the quality care and the well-being of our patients give pertinence to the topic of ethics in rehabilitation.

Setting goals in rehabilitation is a central moral issue, as it needs to integrate concepts of health and function with the personal values of autonomy independence and quality of life, balancing medical and rehabilitation needs.

Abstract No.: KL48

Abstract Title: ISPRM Strategic Plan – Now and the Future

Authors(s): J. A. DeLisa

Presenting author: J. A. DeLisa

Institution: Department of Physical Medicine and Rehabilitation-UMDNJ-New Jersey Medical School,
Newark, New Jersey USA

ABSTRACT:

Introduction: ISPRM is a young society. It has enormous opportunities and challenges, but very little money. It functions due to the dedication of unpaid volunteers.

Methods: This paper includes the observations of the current ISPRM President.

Results: It was formed in 1999 by the merger of the International Federation of PM&R, and the International Rehabilitation Medicine Association. These founding organizations had different memberships, programs, and finances. Bylaws and policies and procedures (rules) of the new society were developed. Initial issues were: Is the primary mission of ISPRM for societies or individuals; for developed or developing countries? Other important initial steps were establishing the dues and the eligibility for officer and board positions, and establishing a central office and its functions.

ISPRM has had two strategic planning retreats, Nanjing in 2008 and Taiwan in 2010. The September 2009 special issue of the *Journal of Rehabilitation Medicine* entitled “Developing the International Society of Physical and Rehabilitation Medicine,” contains discussion papers that outline issues facing ISPRM, as well as options for implementation. Many of these were dealt with at the 2009 Istanbul Congress.

Discussion: Issues that currently face ISPRM are that our dues and revenue from congresses are too limited for our desired programs. We are continuing to define the role of ISPRM with respect to regional and national PRM societies. We are defining membership categories and the rights and responsibilities of each. Organizing congresses and expanding our UN/WHO role are key future elements, as well as finding more leaders. The Central office management firm and the executive director position description and evaluation process have to be addressed.

Conclusions: ISPRM is a young, vibrant international society. It has tremendous potential, opportunities, as well as challenges. Communication through its website, journal, other electronic publications, and membership products will define its future.

Abstract No.: KL49

Abstract Title: WRITING AND PUBLISHING A SCIENTIFIC ARTICLE

Authors(s): G. Grimby

Presenting author: G. Grimby

Institution: Section of Clinical Neuroscience and Rehabilitation, Sahlgrenska Academy at University of Gothenburg, Sweden

ABSTRACT:

Before writing and submitting a scientific paper ask yourself: Is the study ready to be published with respect to the message to be presented? Is it possible to draw conclusions based on the size of the group(s) studied? Are the methods used sufficiently documented and controlled in the current setting (country, type of patients, etc.)?

It is recommended that you take some preliminary decision as to which journal you will submit the manuscript, taking such aspects into consideration as the main scope of the journal, previous experience with that journal regarding the delay in answering and quality of review comments, the publication policy of the journal including open access and, to some extent, the impact factor. Read the journal's Instructions to authors carefully, and after writing the manuscript check that they have been followed. Justify the presence of all authors and make sure that the manuscript has been approved by all authors and that any conflicts of interest are reported. Be aware of the quality of the language and use a native-speaker to check the language. It is useful to understand the procedure at the Editorial office and the peer review process. Comments from the Editor and reviewers should be read carefully and answered point-by-point. If you have a different opinion, this should be indicated and why. If a manuscript is rejected, consider why this might be; maybe it was premature, or the journal did not have the topic of the article in its main scope. Take all of the comments into consideration and if you re-submit a revised manuscript to another journal.

Abstract No.: KL50

Abstract Title: EARLY REHABILITATION – TIMING OR CONCEPT

Authors(s): A. B. Ward

Presenting author: A. B. Ward

Institution: North Staffordshire University Rehabilitation Centre, Haywood Hospital, Stoke on Trent, UK

ABSTRACT:

Starting rehabilitation very early for people following the onset of a neurological health condition has the potential to provide specialist medical interventions during an acute hospital admissions and has been developed in response to the need for hospitals to reduce inpatient stays in acute beds. But, is there more to early rehabilitation than just timing? The point of entry is defined as when “the priority of care has moved from the definitive acute treatment to one of rehabilitation” and it is at this time that the rehabilitation specialist takes the lead for clinical care. In reality, once definitive care or resuscitation has taken place, a patient’s inpatient stay in hospital is primarily for rehabilitation and dedicating facilities, including beds, for this purpose will bear fruit to meet healthcare priorities.

Early rehabilitation describes rehabilitation interventions within the first month of a hospital admission following a disabling health condition. Its value is set out in a paper, which was recently published¹ and this presentation will describe an evidence based care pathway and the results of a study in which the outcomes of brain injured patients were improved by interventions in the intensive care unit. It will also describe the categories of suitable patients within the definition of early rehabilitation.

Below are some examples of how it may be delivered.

- v. Transfer of patients to specialist beds in the acute hospital;
- vi. Establishment of mobile rehabilitation teams while the patient remains in the referring specialist’s bed;
- vii. Daily visits to the acute wards by specialists from a stand-alone rehabilitation facility;
- viii. Establishment of rehabilitation centres to take patients in the very short term.

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Abstract No.: KL51

Abstract Title: CURRENT STATE OF THE APPLICATION OF THE ICF IN PHYSICAL AND REHABILITATION MEDICINE

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ABSTRACT:

The health sector employs four strategies: prevention, cure, support and rehabilitation. The International Classification of Functioning, Disability and Health (ICF) is the basis for the conceptualization of the rehabilitation strategy and is of relevance to the curative, preventive and supportive health strategies. The ICF and the ICF-based conceptualization of the rehabilitation strategy are again the basis for the organization of human functioning and rehabilitation research in distinct scientific fields and the development of research capacity with respect to academic training programs, interdisciplinary university centres and national/international collaboration networks.

Along with these conceptual developments, there is a wide range of activities in the development of practice tools and applications of the ICF throughout the rehabilitation world. The ICF can serve as reference for the comparison, selection and further development of existing measures of human functioning. The mapping of measures can now rely on established linkage rules. The development of minimal standards for the assessment and reporting of functioning based on the ICF has made progress over the last years in cooperation between the International Society of Physical and Rehabilitation Medicine (ISPRM) and the World Health Organization (WHO). The Brief ICF Core Sets are the standards for reporting and planning of studies as well as for single clinical encounters. The Comprehensive ICF Core Sets are the standards for multi-disciplinary assessments, for example in the context of rehabilitation medicine.

Another important development is the operationalization of ICF qualifiers as a means to directly applying the ICF in clinical practice and research. Under the leadership of the Functioning and Disability Reference Group (FDRG) of the WHO Family of International Classification (WHO-FIC) network, a task force is coordinating the further development of coding rules and specific measurements related to one or more ICF categories.

Abstract No.: KL52

Abstract Title: ORGANIZATION OF REHABILITATION MEDICINE AFTER A DISASTER - HAITI 2010

Authors(s): I. Siev-Ner, A. Kristal, D. Abadi

Presenting author: I. Siev-Ner

Institution: Sheba Medical Center, Kiryet Ono - Isreal

ABSTRACT:

On January 12th 2010, Haiti was struck by a major earthquake, 7.0 on the Richter scale. An estimated 230,000 people were killed with an additional 300,000 injured - the majority suffering from severe limb injuries. Initial treatment was delivered by a multitude of teams which arrived from all over the world. The treatment was delivered in facilities ranging from clinics through field hospitals to more advanced medical facilities, but all were done in a setting of mass injury - damage control approach. This catastrophic event left in its aftermath thousands of people with either amputations (estimated number – 4,000), or severe sequelae of fractures and soft tissue injuries - all of which requires further treatment and prolonged rehabilitation in order to return to a reasonable level of function. Realizing these needs as well as their urgency, we organized a comprehensive team which was sent to Haiti in order to assess the needs and plan a long term rehabilitation mission. The field of rehabilitation was underdeveloped in Haiti before the earthquake. The disparity between the needs and service availability was obviously increased hundredfold following the calamity. This applies to all aspects of rehabilitation including personnel, facilities and equipment. At the end of April 2010, we established a joint Haitian - Israeli Rehabilitation Centre in Haiti in the General University Hospital in Port-au-Prince. The centre is based on rotating Israeli multidisciplinary teams. The goal of the centre is to concomitantly treat the patients, as well as training of local personnel at all levels. We regard this as a long term project with the aim of eventually handing it over to full Haitian operation. The presentation will address international collaboration, cultural aspects, the lack of involvement of the international rehabilitation organizations and practical facts of operating a rehabilitation project in the third world.

Abstract No.: KL53

Abstract Title: GABA_A RECEPTOR EXPRESSION & SPASTICITY IN PATIENT WITH SPASTIC CEREBRAL PALSY

Authors(s): C. Park

Presenting author: C. Park

Institution: Department and Research Institute of Rehabilitation Medicine, Yonsei University College of Medicine, Seoul, Korea

ABSTRACT:

Periventricular leukomalacia (PVL), due to hypoxic ischemic insults, has been known as a leading cause of motor and cognitive dysfunction in patients with perinatal brain injury, especially in patients with spastic cerebral palsy (CP) who were born prematurely.¹ However, children with spastic CP do not always have PVL and the exact correlation between brain damage and motor impairments still remains unclear. Despite the high incidence of white matter injury in children born prematurely with very low birth weight, the incidence of spastic CP in this group was approximately 10%.^{2,3}

In addition to morphological and anatomical abnormalities, various neurotransmitters are thought to be involved in the pathogenesis of CP. For example, GABA is a well-known inhibitory neurotransmitter in the human brain, but it is also known to generate excitatory action in an immature brain and may lead to brain damage.⁴ In regards to the brain remodeling process after injury, perilesional or motor cortical GABA_A receptor expression was reported to decrease during the repairing process after brain injury for optimal practice-dependent plasticity.⁵ In contrast, our previous study demonstrated a higher uptake of a non-selective GABA_A receptor marker, ¹⁸F-fluoroflumazenil (¹⁸F-FFMZ), within the bilateral motor and visual cortices in patients with spastic CP compared to normal controls on statistical parametric mapping (SPM) analysis using delayed PET images.⁶

In a recent study, we investigated the regional expression profile of the GABA_A receptor within the motor cortical network zone in patients with perinatal injury and spastic CP. We measured regional GABA_A receptor binding potential using a dynamic PET scan with ¹⁸F-fluoroflumazenil (¹⁸F-FFMZ) in spastic CP. Twenty-nine patients with spastic CP had PVL and six did not have PVL on conventional MRI. SPM analysis was used to compare the receptor BP profiles of all spastic CP patients and patients without PVL (n=6) with those of normal control. We obtained a functional connectivity map of the primary motor cortex (M1) at a resting state with functional MRI in 21 patients and compared the connectivity map with the receptor binding potential map. The primary motor cortex has extensive functional connections with the adjacent somatosensory cortex, cingulate gyrus, parietal cortex, visual cortex, basal ganglia, thalami, and cerebellum. The GABA_A receptor binding potential in the spastic CP group diffusely decreased except for the specific areas that were functionally connected with M1. In addition, receptor binding potential was focally increased within the paracentral lobule (including the lower extremity homunculus), convexity of the motor cortex, visual cortex, and cerebellum. The non-PVL group also showed a trend toward increased BP within these regions.

Abstract No.: **KL53 (continuation)**

Abstract Title: **GABA_A RECEPTOR EXPRESSION & SPASTICITY IN PATIENT
WITH SPASTIC CEREBRAL PALSY**

The etiological mechanisms of altered regional GABA_A receptor binding in spastic CP patients are still unknown. However, these alterations of receptor binding might play an important role in the pathogenesis of motor dysfunction and spasticity in spastic CP.

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Abstract No.: KL54

Abstract Title: PHYSICAL AND REHABILITATION MEDICINE IN CHILDREN WITH CEREBRAL PALSY

Authors(s): E. Varela Donoso, S. Muñoz Lasa, R. Valero Alcaide, V. González López-Arza, A. Atín Arratibel

Presenting author: E. Varela Donoso

Institution: Dpto. Medicina Física y Rehabilitación, Facultad de Medicina UCM, Madrid, Spain.

ABSTRACT:

Central Nervous System (CNS) damage during childhood (which could lead to death) represents a wide range of consequences that traditionally have been grouped into different clinical syndromes. In the case of Cerebral Palsy (CP) it represents movement, postural and tonic disturbance syndromes, due to non-progressive damage in the central nervous system during its development. CP can be classified according to different criteria. CP suspicion has to be established by the PRM specialist according to three main categories: a child at risk, a child under suspicion and a child affected with CP. An early diagnosis of CP can be made using “Vojta’s early diagnosis of motor disturbances” which includes: spontaneous motion evaluation, postural screening, primitive reflex evaluation and muscular tone evaluation. Once a CP diagnosis has been established, treatments have to start with good coordination between all of the members of the working team. In regards to physiotherapy (PT) intervention, it is normally the first treatment provided to the affected child and for this reason it represents the most well-known therapy. The aims of PT are: facilitating previous control for independence into maturity, decreasing bad postural reflexes and their symptoms; as well as the psycho-motor’s skill stimulations. There are three different kinds of PT treatment: treatments based in mechanical reason, treatments based in neurological reason and treatments based on education. Speech and language therapy also represent important PRM interventions and they should be concerned with: speech and language disturbances, language expression, dyslexia, non-oral communication and sign language; as well as alternative and other increasing communication. It can also deal with: oro-facial therapy and feeding, as well as over-neurological dysphagia. Other important interventions in children with CP are: breathing treatment, head control and pre-language stimulation, as well as increasing communication in media. Occupational Therapy (OT) also represents an important intervention in many CP children. It has to be individualized for each patient. It has to be progressive and facilitate: attention, coordination and effort. We have to use common technical aids and other instruments such as: task panels, computers, virtual reality, etc. OT is necessary for the child to normally use the acquired tasks. For this reason, family cooperation is mandatory.

Abstract No.: **KL54 (continuation)**

Abstract Title: **PHYSICAL AND REHABILITATION MEDICINE IN CHILDREN
WITH CEREBRAL PALSY**

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Abstract No.: KL55

Abstract Title: RHEUMATIC DISEASES AND ENVIRONMENT

Authors(s): T. Arasıl

Presenting author: T. Arasıl

Institution: PM&R Specialist Ankara,Turkey.

ABSTRACT:

Rheumatic diseases are characterized by inflammation (signs are redness and/or heat, swelling, and pain) and loss of function of one or more connecting or supporting structures of the body. Some examples of rheumatic diseases are osteoarthritis, rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), scleroderma or progressive systemic sclerosis, osteoporosis, fibromyalgia, gout, spondyloarthropathies, infectious arthritis, bursitis and tendinitis, neck and back pain, etc.

Risk factors that increase the likelihood of developing rheumatic diseases: An estimated 3% of the population in the world is affected by a tissue specific or systemic autoimmune disorder. The cause(s) of autoimmune disorders remain largely unknown, but they may result from multiple interactions of genes and environmental factors. Considerable evidence supports a role for environmental agents in inducing autoimmune disorders. Some controlled studies detected statistically significant increased risks of developing SLE, and RA among current smokers. Smoking has been identified as a risk factor leading to the development of lupus nephritis with poor outcome. There may be considerable differences in nicotine and other cigarette components among geographic regions. The use of permanent hair dyes (especially with a longer duration of dye use) in women was associated with borderline increase in the risk of developing SLE. But there are large variations in the chemical content of hair dyes. Infection as a possible trigger for autoimmune disorders has long been proposed. Occupational exposures, especially occupational exposure chemicals/UV light, psychosocial stressors, climate, lifestyle, immunizations, exposure to various metals, Drugs such as procainamide and hydrolysine can induce a lupus like syndrome in genetically-susceptible individuals. Other drug induced autoimmune diseases have been described, including some of the haemolytic anaemias, thrombocytopenias, and the leukopenias. Silicone injections or installations have been shown to cause an autoimmune disease. Generally, metals inhibit immune cell proliferation and activation, with notable exceptions. Mercury, gold and silver can induce lymphocyte proliferation and subsequent autoimmunity. Drugs such as procainamide and hydrolysine can induce a lupus like syndrome in genetically-susceptible individuals.

Other drug induced autoimmune diseases have been described, including some of the hemolytic anemias, thrombocytopenias, and the leukopenias. Abnormal immune responses may also be due to a deficiency of a specific substance. Some epidemiologic information suggests an association between dietary iodine and iodine-thyroiditis, and between silica both scleroderma and lupus in certain industrial settings. Halogenated hydrocarbone trichloroethylene (TCE) and polychlorinated biphenyls (PCBs) have been associated with SLE, PSS, and other autoimmune disorders.

Abstract No.: **KL55 (continuation)**

Abstract Title: **RHEUMATIC DISEASES AND ENVIRONMENT**

Vinyl chloride, trichloroethylene, amine compounds, aromatic solvents, especially benzene and, toluenes, toluidines, xylenes, aniline and ethanolamine, herbicides (paraquat aminotriazole, bromouracil, diuron). Bleomycine (cancer chemotherapy), pentazocine, cocaine abuse, hydrocarbons (including gasoline) has been found associated with autoimmunity and some rheumatic disease. Exposure to pesticides and estrogenic compounds require additional exploration. Topics covered include exposure to cadmium (drinking water exposure to cadmium), mercury (dental amalgam), solvents (such as paint thinners), radiation and silica as either known or suspected causes of autoimmune diseases or scleroderma. Cigarette smoke, aspartame and other toxins injure immune system cells (?). Artificial joints and silicone breast implants (anecdotal cases have been reported of myositis developing after silicone implants), asbestosis, collagen and liquid silicone injections are some causes of rheumatic diseases. Intensive exposure to cats early in life had more than 24 times the risk of developing RA later in life (?).

In summary, environment interactions appear to be important in the development of many rheumatic/autoimmune diseases and further studies in these areas may have important diagnostic therapeutic and preventive implications.

Abstract No.: KL56

Abstract Title: REHABILITATION OF THE KNEE AFTER ACL RECONSTRUCTION “NEW TRENDS”

Authors(s): Z. M. Hawamdeh

Presenting author: Z. M. Hawamdeh

Institution: University of Jordan, Amman, Jordan

ABSTRACT:

Rehabilitation of the knee after ACL reconstruction is as important today as surgical technique for good clinical and functional results. Rehabilitation was not considered very much until few year ago because it was believed that the only postoperative goal was protection of the weak graft by immobilization.

Conventional rehabilitation programs emphasized early protection of the ACL reconstructed by restricting ROM, weight bearing and the rate of return to functional activities.

During recent years, rehabilitation protocols have become more aggressive, permitting sooner and safer return of patients to their sport or work activities with a lower percentage of complications

The improvement in biomechanical knowledge of the knee ligaments by means of in vivo human studies allows us to prescribe safer exercises.

There is a large consensus in the world about the goals of pre- and postoperative rehabilitation (ROM, stability, muscle strength, proprioception, and pre injury level of activity), but agreement does not exist about the speed of progression.

This review presents new trends in rehabilitation after reconstruction of ACL and discusses the phases of rehabilitation after surgery.

Abstract No.: KL57

Abstract Title: “BALNEOLOGY ON KNEE OSTEOARTHRITIS: A PROSPECTIVE SINGLE BLINDED TRIAL IN TERMAS DE S. JORGE – PORTUGAL”

Authors(s): P. Cantista^{1,2,3}, A. Yee², H. Castro^{1,3}, M. Cantista⁴

Presenting author: P. Cantista

Institution: ¹ Termas de S. Jorge, Santa Maria da Feira, Portugal
² Instituto de Ciências Biomédicas de Abel Salazar, Universidade do Porto
³ Serviço de Fisiatria do Centro Hospitalar do Porto - Hospital de Santo António
⁴ Serviço de Medicina Física e de Reabilitação do Hospital Curry Cabral, Lisboa

ABSTRACT:

Introduction: Balneotherapy is one of the oldest modalities of treatment in medical practice, namely for musculoskeletal conditions. The well defined and stable characteristics of mineral waters gave them therapeutic properties being their use well accepted in the great majority of the Mediterranean countries. Osteoarthritis is perhaps the health condition that leads more patients for a balneology treatment. There are some clinical studies already published concerning this topic but in Portugal only a few were presented and particularly in Termas de S. Jorge no trial was performed before.

Goals: This study targets the evaluation of the health benefits in a population with Knee Osteoarthritis after a balneology program in Termas de S. Jorge which included thermal water baths and pelöids application on the knees.

Methodology: A prospective, single blinded, pragmatic clinical trial was performed in a sample of 30 patients (15 men and 15 women), with ages varying from 53 to 83 years (average age of 67,97 years), to whom the diagnostic of Knee Osteoarthritis was established , according to the American College of Rheumatology (ACR) criteria .

All the patients received treatment during a period of 14 days, consisting of thermal water baths, exercises in the pool and pelöids application on their knees. Pain, mobility, functionality, quality of life and treatment compliance were evaluated using as tools the *visual scale for pain*, the *Short Form SF-36 Questionnaire*, the “*Timed Up and Go Test*” and the “*Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)*”. The evaluation was performed before the treatment and one week after it. We used the non parametric test for dependent samples (*Wilcoxon*) to validate the results.

All the ethical procedures were observed and fouldy accomplished.

Results: We found improvement with statistic significance in the results of all the used scales.

Conclusion: This balneology program of Termas de S. Jorge seems to be effective in the treatment of knee osteoarthritis.

Key words: Balneotherapy, Pelöids, Crenotherapy, Knee Osteoarthritis

Abstract No.: KL58

Abstract Title: AQUATIC REHABILITATION AND HYDROTHERAPY

Authors(s): W. Micheo

Presenting author: W. Micheo

Institution: Dept. of PM&R and Sports Medicine, University of Puerto Rico, School of Medicine – Puerto Rico

ABSTRACT:

Aquatic rehabilitation, pool therapy, or hydrotherapy are important tools in the armamentarium of the Physical and Rehabilitation specialist. The therapeutic properties of water have been known for centuries and include buoyancy, resistance, and muscle relaxation. In addition, hydrotherapy can be used to treat pain, aid in wound, as well as soft tissue injury healing.

Aquatic rehabilitation can be used in acute and chronic injury management, and in traumatic as well as overuse injury rehabilitation. Therapeutic exercises that can be performed under water include range of motion, strengthening, balance, and sports specific activities.

Cardiovascular and cross training for injured athletes training can also be safely achieved with aquatic activities including deep water running. Despite slightly lower heart rate responses, and perceived exertion, a training response can be achieved without placing stress on the lower extremities.

Abstract No.: KL59

Abstract Title: SPASTICITY: DEFINITION, EVALUATION AND TREATMENT

Authors(s): N. Christodoulou, K. Christodoulou, C. Christodoulou

Presenting author: N. Christodoulou

Institution: Limassol Centre of Physical and Rehabilitation Medicine NC, Limassol - Cyprus.

ABSTRACT:

Spasticity is a subject of major clinical importance and a major contributor to sensori-motor functional disability in patients suffering from upper motor neuron lesions. Usually, painful muscle spasms occur, leading to increased burden of nursing care. Generally, the signs and symptoms of an upper motor neuron lesion are divided in 2 categories: The negative and positive phenomena. The negative phenomena are characterized by decreased level of voluntary motor activity. The positive phenomena are characterized by increased level of involuntary motor activity.

The management of patients with spasticity is a real challenge in Rehabilitation. It requires an evaluation of the impairments and disabilities of the patient, based on a detailed neurological examination and functional assessment and setting of treatment goals important for the patient's needs. Common treatment goals are to improve motor function, to alleviate muscle spasms, to prevent fixed contractures and bone deformities and to facilitate comfortable positioning of the patient in bed or chair.

It is important for anyone who deals with the management of spasticity to know the causes and mechanisms of spasticity. In the lecture all these are explained in details. Spasticity can be considered as an increase in muscle tone that is elicited by fast muscle stretch. It is absent at rest and usually cannot be triggered by slow movements. The most recent definition of spasticity which replaced Lance's definition (since 1980), has been expressed by the S.P.A.S.M. consortium (Jan. 2005) and is: "Spasticity is a disorder of sensori-motor control, resulting from an upper motor neuron lesion, presenting as intermittent or sustained involuntary activation of muscles".

The treatment principles of muscle spasticity and the treatment indications are presented. The Spasticity Rehabilitative Management can be planned by using one or more of the following: Physical Treatment, Drugs, Medical Interventions (Intra-thecal Baclofen, Botulinum Toxin, Phenol) and Surgery. The several ways of treating spasticity are analyzed with their positives and negatives. The Aims of Spasticity Treatment are: to improve function, to have symptomatic relief, to facilitate carer's function and respond to Health Service need in the long run. The Spasticity Treatment Goals are: For Functional Patients: The improvement of walking speed style, the less energy expenditure of walking, the facilitation of hygiene and sexual functioning, the reduction of painful spasms and the correction of the body image. For Non-Functional Patients: The improvement of posture & seating, the facilitation of perineal hygiene, the reduction of carer burden and the alleviation of symptoms. In conclusion, for a successful Rehabilitative treatment of spasticity we need to have clear treatment aims, a multi-disciplinary assessment & management and developing of clinical standards.

Abstract No.: KL60

Abstract Title: PATIENTS SELECTING CRITERIA FOR INTRATHECAL BACLOFEN THERAPY

Authors(s): K. Grabljevec

Presenting author: K. Grabljevec

Institution: University Rehabilitation Institute Ljubljana, Ljubljana - Slovenia

ABSTRACT:

Intrathecal Baclofen Therapy (ITB) involves the long term delivery of Baclofen to the intrathecal space surrounding the spinal cord for the purposes of relieving severe spasticity. This delivery method of Baclofen is used when oral medication or conventional physical therapy no longer manages the spasticity sufficiently, and the spasticity has an impact on the quality of life of the patient. Due to the direct point of delivery of the Baclofen using ITB, much smaller amounts can be used than would otherwise be taken orally.

The benefits of ITB to the patient are well documented, and typically reduce muscle spasms, tone and pain. This in turn increases mobility, independence, stamina, sleep and an overall increased quality of life. In addition to the patient benefits, there is also a reduced workload for care by patient caregivers and family members.

Once the pump has been implanted and it is functioning as required, oral medication for the relief of muscle spasms is stopped or reduced. Once oral medication is changed, the patient usually is more alert, and has more energy. This is due to the sedation effects of oral drugs being removed.

The initial test to see if a patient will benefit from ITB, requires the administration of an intrathecal test dose of Baclofen. This is usually done via a lumbar puncture, and the patient is then monitored for a reduction of spasticity and improvement in daily activities. Besides the clinical observation, other factors that might influence the successful therapy should be taken into account. Indications, contraindications and precautions for intrathecal baclofen therapy as well the bolus test procedure will be presented. After this lecture participants will understand the procedure of selection of patients as well procedure with bolus test and test with external pump device.

Abstract No.: KL61

Abstract Title: BODY MASS INDEX AND REHABILITATION

Authors(s): David Burke

Presenting author: David Burke

Institution: Emory University School of Medicine, Atlanta, USA.

ABSTRACT:

The prevalence of obesity in much of the world is increasing at an alarming rate. While obesity continues to be associated with adverse health consequences, there has been emerging data leading to a reassessment of obesity and its impact on morbidity and mortality. One such wave of investigation comes from cardiology where the coined phrase “obesity paradox” has emerged. Many studies have openly suggested that obesity may offer a clinical advantage as it relates to post cardiac intervention morbidity, length of stay, and mortality. Some evidence suggests that being overweight or obese may improve survival, not just in heart failure, but also in diseases like hypertension, coronary artery disease, and peripheral artery disease. Given the available literature, to our knowledge, no large study exists strictly measuring obesity as an independent variable and the impact obesity has on persons undergoing acute rehabilitation.

Data from rehabilitation patients admitted to an acute rehabilitation from January 2000 to April 2006 were analyzed. The body mass index (BMI) was calculated for each patient. These patients were then separated into four separate groups according to BMI. The FIM gains per day for each patient was then calculated. These inpatient data were divided by diagnostic category. The data suggest that often normal weight patients do not do as well as those who are overweight. However only the underweight group was significantly different from the other three groupings. Each diagnostic category will be discussed separately. While not illustrative of an obesity paradox, the data do suggest that the those patients who are admitted to a rehabilitation hospital who are obese do not demonstrate significantly slower outcomes than those admitted who are normal weight or underweight.

Abstract No.: KL62

Abstract Title: COMPLEMENTARY METHODS IN REHABILITATION MEDICINE

Authors(s): S. Muñoz-Lasa, E. Varela-Donoso, R. Valero, M-A. Atín.

Presenting author: E. Valera Donoso.

Institution: Dpto. Medicina Fisica y Rehabilitacion, Facultad de Medicina UCM, Madrid, Spain.

ABSTRACT:

Complementary Medicine (CM) is defined as any medical practice that is neither widely available nor widely taught in conventional medical schools. Surveys show that it is used by up to 40 % of the general population (In some Asian and African countries, 80% of the population depend on traditional complementary medicine for primary health care) but despite widespread and increasing use, there are limited data about its results.ⁱ In the field of Physical and Rehabilitation Medicine (PRM) some complementary methods are showing scientifically demonstrated benefits. We will focus in three of them: Acupuncture, Animal Assisted Therapies and homeopathy/homotoxicology. **Acupuncture** is the procedure of inserting and manipulating needles into various points on the body to relieve pain or for therapeutic purposes. It is useful for nausea, vomits, pain, spasticity, sphincter upset, weakness, paresthesia, depression, gait and coordination disturbances, and sleep disturbances.ⁱⁱ Its efficacy has been recognized by the WHO. People with Multiple Sclerosis, for example, have more sensibility in acupuncture points.^{iii iv}

Animal Assisted Therapy (AAT), as defined by the Delta Society,^v is a goal-directed intervention in which an animal that meets specific criteria forms an integral part of a therapeutic process, designed to improve human functioning. On the other hand, animal-assisted activities (AAA) are informal activities that involve human-animal interactions, promoting socialisation, motivation, education, recreation, and other therapeutic benefits to enhance global quality of life. Differently than AAA, AAT is delivered and/or directed by persons with certified expertise as a part of their professional activities, has specified goals and objectives to achieve, and is documented and evaluated. Hippotherapy in children, for example, has a level of evidence 2a, higher than many common methods used in Rehabilitation Medicine.^{vi}

Homeopathy/homotoxicology. Homeopathy is a form of complementary medicine first expounded by German Physician Samuel Hahnemann in 1796 that treats patients with heavily diluted preparations which are thought to cause effects similar to the symptoms presented. Homotoxicology is a relatively new holistic, integrated bio-medical science and therapeutic system, developed by Dr Hans-Heinrich RECKEWEG M.D., (1905-1985) who was also a qualified Homoeopath and Naturopath, and is basically a nano-pharmaceutical, rather than homoeopathic system of medicine, albeit the anti-homotoxic therapeutics are prepared according to Good Manufacturing homoeopathic practice (Germany). On the basis of this principles, they both act through the immune system . We no longer sustain the idea of “water memory” or “energetic compounds”. It is the immune system which is activated by this medicine as has been demonstrated in papers published in peer review journals.^{vii viii ix}

Abstract No.: KL62 (continuation)

Abstract Title: COMPLEMENTARY METHODS IN REHABILITATION MEDICINE

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Abstract No.: KL63

Abstract Title: ELECTRODIAGNOSIS IN PRM

Authors(s): Z. M. Hawamdeh

Presenting author: Z. M. Hawamdeh

Institution: University of Jordan, Amman, Jordan

ABSTRACT:

Electrodiagnostic studies are considered an extension of the doctor's physical examination; it can be helpful in evaluating weakness, numbness, pain and symptoms such as fatigue, cramps and abnormal sensation that result from pathologies of the central and peripheral nervous system. It includes electromyography (EMG), nerve conduction studies (NCS) and evoked potentials (EP).

EMG is very essential for evaluation of muscular activity; it involves the placement of a needle into various muscles to record different stages of muscle activity, including rest, minimal contraction, and maximal activity. At rest, normal muscle is electrically silent. Damaged or denervated muscle may result in spontaneous depolarization of individual muscle fibers which can be detected through electromyography.

NCS are an important part of the complete electrodiagnostic exam. They assess the peripheral nerve ability to conduct electrical impulses. An electrical charge is delivered to a peripheral nerve. That charge is carried down the nerve and generates a muscle contraction. A recording electrode is placed on a muscle innervated by that nerve, and information about the impulse can be recorded, including its latency, the distance traveled and the nerve conduction velocity (NCV) can also be calculated. These are essential elements for assessment of nerve damage.

Somatosensory evoked potentials (SSEP) are electrical signals generated by the nervous system in response to sensory stimuli; they represent the function of ascending sensory pathway. They are initiated by repetitive sumaximal stimulation of a sensory nerve, mixed nerve or dermatome and recorded from the spine or the scalp.

Abstract No.: KL64

Abstract Title: CANCER PAIN MANAGEMENT

Authors(s): G. Akyüz

Presenting author: G. Akyüz

Institution: Marmara University, School of Medicine, Dept. Of P.M.&R., Istanbul - TURKEY

ABSTRACT:

Cancer is increasingly being viewed as a chronic illness requiring long-term management, and there is a growing need for evidence-based rehabilitation interventions for cancer survivors. There are immobilization, central/peripheral nervous system involvement, myopathy, bone invasion, lymphoedema, anaemia, psychosocial and sexual problems among the reasons of disabilities seen regarding to cancer. The incidence of cancer increases from 500 in 100,000 to 2000-4000 in 100,000 as women or men age from 50 to 80 years. The population is aging and the prevalence of cancer is increasing. Cancer patients need comprehensive care designed to relieve symptoms of pain, fatigue, and muscle weakness. They need education to help support their ability to reach functional independence and maintain quality of life. Rehabilitation professionals must be trained to manage problems associated with cancer and its treatment. It is known that interdisciplinary working, permissive approach, education and early treatment increase the success in cancer treatment. Physical activity has become a focus of cancer recovery research because it has the potential to reduce treatment-related burden and to optimize health-related quality of life. Cancer pain is present in 51% of patients (74% in advanced stage) and it effects quality of life and functionality negatively. It has psychological, cognitive and behavioural components. In 7-20% of patients with cancer pain thought of suicide is dominant as a result of depression and anxiety. In cancer patients, a) pain related with direct tumoral involvement (bone invasion, compression or invasion of peripheral nerves); b) pain related with cancer treatment (postoperative, postchemotherapy and postradiation problems) can be seen. Medical treatment in cancer pain differs according to intensity of pain. In mild degree of pain, simple analgesics (acetaminophen, paracetamol) and non steroidal anti-inflammatory drugs (NSAIDs) are given. In this stage, physical therapy modalities (TENS; high voltage galvanic stimulation, diadynamic currents e.g.), general therapeutic massage, biofeedback and relaxation excersises are very helpful. In moderate painful situations, weak opioids (codein, tramadol, oxycodon, hydrocodon) should be preferred. When it is necessary for functionality, ROM excersises, muscle stretching and strengthening excersises, balance and coordination excersises are added to tretament programme. In severe pain, strong opioids (morphine, hydromorphine, methadon) are used and additionally adjuvant drugs (tricyclic antidepressants, anticonvulsants) are given. In stituations unresponsive to treatment as well as spinal opioid administrations and invasive techniques (nerve blockages, stellate and lomber ganglion blocks in ANS involvement), other interventions (dorsal root rhizotomy, tractotomy, cordotomy, myelotomy) are tried. Although pain is a symptom that should be overcome, sometimes therapy can get hard and it can delay the return of patient to daily life.

Abstract No.: KL65

Abstract Title: CANCER REHABILITATION: A CHALLENGE FOR THE PHYSIATRIST

Authors(s): E. Antoniadou

Presenting author: E. Antoniadou

Institution: Physiatrist – Athens, Greece

ABSTRACT:

Despite the wide variety of pathologoanatomic diagnosis, cancer patients face some common problems which are: reduced strength and endurance, augmented fatigue, pain and discomfort, low function, reduced well-being.

Cancer rehabilitation can be defined as a process that assists the cancer patient to obtain maximal physical, social, psychological, and vocational functioning within the limits created by the disease and its resulting treatment.

It has been noticed that in acute medical settings, many patients with cancer have easily remediable but unrecognized rehabilitation problems, such as deconditioning, which indicates the importance of interdisciplinary efforts to preserve patient function.

An important finding was that rehabilitation is underused after the patient's condition is stabilized and after he or she is discharged from the hospital. PRM services must be considered on an outpatient or home-based basis to maintain gains and to prevent further deconditioning.

Thorough assessment of impairments, disabilities, and handicaps is paramount before the PRM specialist, as coordinator of a multidisciplinary team, proceeds with goal setting for cancer rehabilitation. The rehabilitation team must provide services to patients during all stages, applying any of the following four interventions that address the scope and course of the illness: Preventive, Restorative Supportive, and Palliative.

Over the last 3 decades, collaboration between PRM and the specialty of cancer medicine (i.e. oncology) has been growing.

Abstract No.: KL66

Abstract Title: EARLY REHABILITATION OF CARDIAC PATIENTS WITH MYOCARDIAL INFARCTION AND PCI

Authors(s): M. Lazovic

Presenting author: M. Lazovic

Institution: Institut of Rehabilitation, Belgrade, Serbia.

ABSTRACT:

Introduction: Primary percutaneous coronary intervention is the preferred treatment for myocardial infarction with ST-segment elevation and is effective in opening the infarct-related artery. Cardiac rehabilitation (CR) begins during hospitalization, not after discharge.

Early phase CR includes: patient and family education, preventing the deleterious effects of bed rest and safe discharge to home. Early rehabilitation of cardiac patients have Goals: help the patient to modify their coronary risk factors through education, decrease the patient's pain and fear of living, increase the patient's physical work capacity, give objective information back to all members of the cardiac rehab team and return the patient home and to the workplace. They should start to walk in the hallway at least twice daily either for certain specific distances or as tolerated without being unduly pushed or held back. Standing heart rate and blood pressure should be obtained followed by 5 minutes of warm-up or stretching. Walking, often with assistance, is resumed, with a target heart rate of less than 20 beats above the resting heart rate and an RPE of less than 14. Starting with 5-10 minutes of walking each day, exercise time gradually can be increased to up to 30 minutes daily.

Conclusion: The patient has now completed early Phase cardiac rehab and will progress now on to Phase II cardiac rehab.

References: Secondary prevention in primary and secondary care for patients following a myocardial infarction, NICE Clinical Guideline, 2007.

Abstract No.: KL67

Abstract Title: SNIFFING ENABLES COMMUNICATION AND ENVIRONMENTAL CONTROL FOR THE SEVERELY DISABLED

Authors(s): Anton Plotkin, Lee Sela, Aharon Weissbrod, Roni Kahana, Lior Haviv, Yaara Yeshurun, Noam Sobel, and Nachum Soroker

Presenting author: Noam Sobel

Institution: Weizmann Institute of Science, Rehovot - Israel

ABSTRACT: Paradoxically, improvements in emergency medicine have increased survival, albeit with severe disability ranging from quadriplegia to "locked-in syndrome". Locked-in syndrome is characterized by intact cognition yet complete paralysis, hence these individuals are "locked-in" their own body, at best able to communicate using eye-blinks alone. Sniffing is a precise sensorymotor acquisition entailing changes in nasal pressure. The fine control of sniffing depends on positioning the soft palate, which is innervated by multiple cranial nerves. This innervation pattern led us to hypothesize that sniffing may remain conserved following severe injury. To test this, we developed a device that measures nasal pressure and converts it into electrical signals. Experiments in 36 healthy subjects revealed that the device enabled sniffs to control an actuator with speed similar to that of a hand using a mouse or joystick. Functional magnetic resonance imaging of device-usage in 12 healthy subjects revealed a widely distributed neural network, allowing for increased conservation following injury. Also, device-usage shared neural substrates with language production; rendering sniffs a promising bypass mode of communication. Indeed, sniffing allowed two completely paralyzed "locked-in" participants to write text, and 16 quadriplegic participants to write text and drive an electric wheelchair. We conclude that redirection of sniff motor-programs towards alternative functions allows sniffing to provide a novel control-interface that is fast, accurate, robust, and highly conserved following severe injury.

Abstract No.: KL68

Abstract Title: THE THERAPEUTIC EFFECT OF BALNEO CLIMATOLOGICAL FACTORS AND RESOURCES IN JORDAN

Authors(s): Illias Salameh, Khalil Alabbad

Presenting author: Khalil Alabbad

Institution: Arab Centre of PRM, Amman - Jordan

ABSTRACT: A complete study for climate factors and natural agents available in Jordan which may be used in Balneo Climatic Therapy. -Concerning the climate in Jordan classified in general as Mediterranean climate (Macro climate) and particular as local climate (Micro climate). Four types of climate have been mentioned (under sea level, sea level, mountain, desert climate). -Concerning natural agents they are classified as two types (Natural mineral water and Mud). As for mineral water it has been classified from the physical point of view as the following: Hypothermic, Thermic, Hyperthermic water, and from the chemical point of view as: Sulfanic water, carbonic water, radon water. The mud has been classified into two types (Organic mud and Inorganic mud). Special characteristics of the Dead Sea region it has been proved their positive benefit results for psoriasis, certain rheumatic disease, certain locomotor and respiratory system.

Abstract No.: KL69

Abstract Title: NOVEL PHYSIATRIC APPROACHES FOR CHRONIC PAIN MANAGEMENT

Authors(s): Marta Imamura

Presenting author: Marta Imamura

Institution: University of Sao Paulo School of Medicine, Division of Physical Medicine and Rehabilitation, Department of Orthopaedics and Traumatology, São Paulo, Brazil

ABSTRACT:

Contemporary pain management has shifted from symptom control to management based on the pathophysiological mechanisms. The clear understanding of the complex mechanisms involved in pain generation, modulation, amplification and perpetuation plays a critical role in a comprehensive pain control program. Recently, it has been recognized that constant and intense nociceptive sensory information generated by painful, inflamed deep somatic structures produce significant neurochemical and metabolic changes and reorganizations within corresponding spinal cord segments. These changes include an increased excitability of dorsal horn neurons producing pain hypersensitivity in a segmental distribution. Together, these neurochemical changes suggest that pain induces and is partially maintained by a state of central sensitization in which an increased transmission of nociceptive information allows normally non-noxious input to be amplified and perceived as noxious stimuli. Finally, plastic changes in the spinal cord might induce changes in other central nervous system structures such as the limbic and the somatosensory cortex. Once these complex mechanisms are present, the rationale for treatment approaches should also target the central nervous system structures rather than using local anti-inflammatory agents' alone. These spinal cord changes may not be attenuated by blocking the original tissue damage and refractory pain may persist even after the removal of the etiological factors. Failure to recognize and diagnose peripheral and central sensitization often leads to only temporary pain relief. Effective physiatric approaches aim peripheral and central desensitization. Paraspinous block (PSB) with 1% Lidocaine effectively desensitizes (reverses to normal sensitivity) the SSS by blocking the nociceptive impulses from the SSL/ISL and prevents afferent bombardment of the dorsal horn. Subsequent needling and infiltration of the SSL/ISL with 1% Lidocaine as well as needling and infiltration of MTrPs in the myotome of the territory of the sensitized spinal segment leads to long term relief of neuromusculoskeletal pain and dysfunction. Shockwave therapy to rat skin decreases calcitonin gene-related peptide expression in dorsal root ganglion neurons and might also relief pain by decreasing central sensitization. Radial shockwave therapy seems to be better than placebo to decrease pain. There is also limited, however emerging evidence of the role of botulinum toxin in the management of chronic pain by inhibition of peripheral low grade inflammatory mediators. Modulation of the primary cortex by non invasive brain stimulation techniques including high frequency repetitive transcranial magnetic stimulation and anodal transcranial direct current stimulation demonstrated to be superior to placebo to achieve chronic pain relief.

ORAL PRESENTATIONS

Abstract No.: OP1007

Abstract Title: ANALYSIS OF COMPOUND MUSCLE ACTION POTENTIAL OF MEDIAN AND ULNAR NERVES: POSSIBLE

Authors(s): Naglaa Abdel-Mohsen Hussein, Mohamed Hassan Emam, Ehab Elzawawy

Presenting author: Naglaa A. Hussein

Institution: Department of physical medicine, rheumatology and rehabilitation, Alexandria University, Alexandria - Egypt

ABSTRACT: Objective: To analyze of shape, amplitude of CMAP of both median and ulnar in normal population and to analyze the anatomical innervations of small muscles of hand in normal cadavers. Design: Cross sectional study Settings: outpatient settings and department of anatomy at Alexandria University. Participants: 300 normal adults (82 males and 218 females) and 30 normal adult cadavers. Main outcome measures: Motor conduction study of both median and ulnar nerves for the included normal subjects. Surface recording of CMAP from thenar and hypothenar muscles respectively with analysis of the shape of the waveform and amplitude. The nerve supply of both thenar and hypothenar muscles were dissected for the included normal cadavers. The main nerve trunk (median or ulnar), the number of branches, their sizes and their sites of entering into the muscles were recorded. Results: The mean age of the studied population was 37.86 ± 8.83 (age range 19-69). The mean amplitude of the median nerve was significantly higher than that of the ulnar nerve (11.785 ± 5.0 , 10.45 ± 2.96 respectively, $p=.0001$). The mean distal latency of median nerve was significantly higher than that of ulnar nerve (3.38 ± 0.41 & 2.698 ± 0.40 respectively, $p=.0001$). The median nerve had mostly dome shaped CMAP rather than double peaked CMAP with significant difference ($p=0.0001$), while the shape of CMAP of the ulnar nerve was more frequently double peaked rather than dome shaped with significant difference ($p=0.0001$). The mean distal latency of the median nerve was significantly longer in those with dome shaped CMAP rather than those with double peak CMAP ($p=0.002$). Similarly, the mean distal latency of the ulnar nerve was significantly longer in those with dome shaped CMAP compared with those with double peak CMAP ($p=.0001$). There were no statistical significant differences between the amplitude of dome shaped CMAP and the double peaked CMAP in either the median or the ulnar nerve. The anatomical results showed that abductor pollicis brevis supplied by the median nerve in 90% of specimens, and by both nerves in 10%. The abductor digiti minimi brevis supplied by the deep branch of the ulnar nerve in 90% and by superficial branch of the ulnar nerve in 10%. There was a connection between the median and ulnar nerves in 50% of specimens. Conclusions: The configuration of the CMAP of the median nerve is mostly dome, whereas that of the ulnar is mostly double peaked. Variability in the pattern of innervations of the small muscle of the hand could be a possible etiological factor. Objective: To analyze of shape, amplitude of CMAP of both median and ulnar in normal population and to analyze the anatomical innervations of small muscles of hand in normal cadavers. Design: Cross sectional study Settings: outpatient settings and department of anatomy at Alexandria University. Participants: 300 normal adults (82 males and 218 females) and 30 normal adult cadavers.

Abstract No.: OP1007 (continuation)

Abstract Title: ANALYSIS OF COMPOUND MUSCLE ACTION POTENTIAL OF MEDIAN AND ULNAR NERVES: POSSIBLE

Main outcome measures: Motor conduction study of both median and ulnar nerves for the included normal subjects. Surface recording of CMAP from thenar and hypothenar muscles respectively with analysis of the shape of the waveform and amplitude. The nerve supply of both thenar and hypothenar muscles were dissected for the included normal cadavers. The main nerve trunk (median or ulnar), the number of branches, their sizes and their sites of entering into the muscles were recorded. Results: The mean age of the studied population was 37.86 ± 8.83 (age range 19-69). The mean amplitude of the median nerve was significantly higher than that of the ulnar nerve (11.785 ± 5.0 , 10.45 ± 2.96 respectively, $p = .0001$). The mean distal latency of median nerve was significantly higher than that of ulnar nerve (3.38 ± 0.41 & 2.698 ± 0.40 respectively, $p = .0001$). The median nerve had mostly dome shaped CMAP rather than double peaked CMAP with significant difference ($p = 0.0001$), while the shape of CMAP of the ulnar nerve was more frequently double peaked rather than dome shaped with significant difference ($p = 0.0001$). The mean distal latency of the median nerve was significantly longer in those with dome shaped CMAP rather than those with double peak CMAP ($p = 0.002$). Similarly, the mean distal latency of the ulnar nerve was significantly longer in those with dome shaped CMAP compared with those with double peak CMAP ($p = .0001$). There were no statistical significant differences between the amplitude of dome shaped CMAP and the double peaked CMAP in either the median or the ulnar nerve. The anatomical results showed that abductor pollicis brevis supplied by the median nerve in 90% of specimens, and by both nerves in 10%. The abductor digiti minimi brevis supplied by the deep branch of the ulnar nerve in 90% and by superficial branch of the ulnar nerve in 10%. There was a connection between the median and ulnar nerves in 50% of specimens. Conclusions: The configuration of the CMAP of the median nerve is mostly dome, whereas that of the ulnar is mostly double peaked. Variability in the pattern of innervations of the small muscle of the hand could be a possible etiological factor. Objective: To analyze of shape, amplitude of CMAP of both median and ulnar in normal population and to analyze the anatomical innervations of small muscles of hand in normal cadavers. Design: Cross sectional study Settings: outpatient settings and department of anatomy at Alexandria University. Participants: 300 normal adults (82 males and 218 females) and 30 normal adult cadavers. Main outcome measures: Motor conduction study of both median and ulnar nerves for the included normal subjects. Surface recording of CMAP from thenar and hypothenar muscles respectively with analysis of the shape of the waveform and amplitude. The nerve supply of both thenar and hypothenar muscles were dissected for the included normal cadavers. The main nerve trunk (median or ulnar), the number of branches, their sizes and their sites of entering into the muscles were recorded. Results: The mean age of the studied population was 37.86 ± 8.83 (age range 19-69). The mean amplitude of the median nerve was significantly higher than that of the ulnar nerve (11.785 ± 5.0 , 10.45 ± 2.96 respectively, $p = .0001$). The mean distal latency of median nerve was significantly higher than that of ulnar nerve (3.38 ± 0.41 & 2.698 ± 0.40 respectively, $p = .0001$). The median nerve had mostly dome shaped CMAP rather than double peaked CMAP with significant difference ($p = 0.0001$), while the shape of CMAP of the ulnar nerve was more frequently double peaked rather than dome shaped with significant difference ($p = 0.0001$). The mean distal latency of the median nerve was significantly longer in those with dome shaped CMAP rather than those with double peak CMAP ($p = 0.002$).

Abstract No.: OP1007 (continuation)

Abstract Title: ANALYSIS OF COMPOUND MUSCLE ACTION POTENTIAL OF MEDIAN AND ULNAR NERVES: POSSIBLE

Similarly, the mean distal latency of the ulnar nerve was significantly longer in those with dome shaped CMAP compared with those with double peak CMAP ($p=.0001$). There were no statistical significant differences between the amplitude of dome shaped CMAP and the double peaked CMAP in either the median or the ulnar nerve. The anatomical results showed that abductor pollicis brevis supplied by the median nerve in 90% of specimens, and by both nerves in 10%. The abductor digiti minimi brevis supplied by the deep branch of the ulnar nerve in 90% and by superficial branch of the ulnar nerve in 10%.

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Abstract No.: OP1007 (continuation)

Abstract Title: ANALYSIS OF COMPOUND MUSCLE ACTION POTENTIAL OF MEDIAN AND ULNAR NERVES: POSSIBLE

Design: Cross sectional study Settings: outpatient settings and department of anatomy at Alexandria University. Participants: 300 normal adults (82 males and 218 females) and 30 normal adult cadavers.

Main outcome measures: Motor conduction study of both median and ulnar nerves for the included normal subjects. Surface recording of CMAP from thenar and hypothenar muscles respectively with analysis of the shape of the waveform and amplitude. The nerve supply of both thenar and hypothenar muscles were dissected for the included normal cadavers. The main nerve trunk (median or ulnar), the number of branches, their sizes and their sites of entering into the muscles were recorded. Results: The mean age of the studied population was 37.86 ± 8.83 (age range 19-69). The mean amplitude of the median nerve was significantly higher than that of the ulnar nerve (11.785 ± 5.0 , 10.45 ± 2.96 respectively, $p = .0001$). The mean distal latency of median nerve was significantly higher than that of ulnar nerve (3.38 ± 0.41 & 2.698 ± 0.40 respectively, $p = .0001$). The median nerve had mostly dome shaped CMAP rather than double peaked CMAP with significant difference ($p = 0.0001$), while the shape of CMAP of the ulnar nerve was more frequently double peaked rather than dome shaped with significant difference ($p = 0.0001$).

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Abstract No.: OP1008

Abstract Title: EFFECT OF COMBINED RESISTIVE AND AEROBIC EXERCISE VERSUS AEROBIC EXERCISE ALONE ON CORONARY RISK FACTORS IN OBESE CORONARY PATIENTS

Authors(s): Naglaa Hussein, Mark Thomas, David Prince, Patricia Czojowski

Presenting author: Naglaa A. Hussein

Institution: Department of physical medicine, rheumatology and rehabilitation, Alexandria University, Alexandria - Egypt

ABSTRACT: Objective: To study the effect of combined resistive and aerobic training versus aerobic training alone on coronary risk factors in obese coronary patients. Design: Randomized prospective clinical trial. Outpatient setting. 50 coronary artery disease patients completed the study and were randomized to group I aerobic exercise (n=25), and group II combined resistive and aerobic exercise (n=25). All patients had dietary counselling, stress management and aerobic exercise 3 times per week for 36 sessions. Group II added resistive exercise from the 18th session. All exercises were telemetry-monitored. Body weight, body mass index, percent body fat, lipid profile, one repetition maximum for muscular strength, and cardiovascular conditioning parameters were measured for all patients at base line and at the end of the study. Results: Strength gains for group II were greater than for group I on the three resistance machines ($P<0.01$). Percent body fat was reduced for group II after training ($P<0.01$) with significant difference in between groups ($P<0.01$). The relative gain in lean mass was greater in group II ($P=0.0006$). Group II only had decreased cholesterol, triglyceride, and low density lipoprotein ($P<0.05$). High density lipoprotein significantly increased in both groups ($P<0.05$). All cardiovascular conditioning parameters significantly diminished in both groups after training ($P<0.05$). Group II had lower exercise systolic blood pressure ($P<0.05$) and relatively greater improvement in average work load ($P=0.0000$). Conclusions: Combined resistive and aerobic training give better control of coronary risk factors in obese coronary patients. Keywords: resistive exercise; obesity; lipids; exercise capacity.

Abstract No.: OP1011

Abstract Title: TREATMENT OF SPASTICITY AND FUNCTIONAL OUTCOME AFTER BOTULINUM TOXIN A (BOTOS®) INJECTION IN PATIENTS WITH NEUROLOGIC LESIONS

Authors(s): Dionyssiotis Y, Kiourtidis D, Karvouni A, Kaliontzoglou A, Kliafas I

Presenting author: Dionyssiotis Y

Institution: Rhodes General Hospital, Rehabilitation Department, Rhodes - Greece

ABSTRACT: Introduction: To observe the functional outcome of Botox injection in patients with neurologic lesions and to correlate it to the units injected, the regions of muscles selected the reduction of spasticity's degree. Material and method We examined records for all in- and out-patients (pts) with neurologic lesions (stroke, multiple sclerosis, spinal cord injury, traumatic brain injury etc.) referred to our departments during an 18 month period who received BoNT-A (Botox®, Allergan Inc, Irvine, CA, USA), (25 male / 18 female) for spasticity. We studied data on examinations of the injected muscles' regions, BoNT-A dosage, number of sessions, the reduction of spasticity and functional targets and parameters who interfere in rehabilitation process: 1) effect on the pain, 2) clonus, 3) Barthel index, 4) use of orthotics, 5) percentage of pts referred for baclofen pump implantation. Result Seven pts repeated 2nd, 8 pts 3rd, 2 pts 4th and 1 pt 5th Botox sessions. An improvement on spasticity degree ($p<0.0005$) was seen but did not differ significantly between sessions. No difference in improvement between patients with a traumatic or non-traumatic pathology was found. To maintain the functional benefits, sessions had to be repeated (mean interval 4 months). There was improvement of pain in all pts. Clonus was reduced and Barthel index was significantly increased between sessions ($p=0.048$). No significance between groups for baclofen pump referencing was found. We found a correlation between spasticity degree difference between sessions and units injected in the upper limbs ($r=0.5$) but no correlation with number of injections administered, and between the degree of improvement with Botox and baseline ASIA Impairment scale (AIS) score. Conclusion The main limitation of this study was the small participants' number under-powering the study. Also, different patients received different BoNT-A doses and number of injections. In a clinical setting this reflects every day practice. References: 1. Esquenazi A: Improvements in healthcare and cost benefits associated with botulinum toxin treatment of spasticity and muscle over activity. Eur J Neurol 2006;13 Suppl 4:27–34 2. Bhakta BB, Cozens JA, Bamford JM, Chamberlain MA. Use of botulinum toxin in stroke patients with severe upper limb spasticity J Neurol Neurosurg Psychiatry.1996;61:30-35. 3. Simpson DM, Alexander DN, O'Brien CF, Tagliati M, Aswad AS, Leon JM, Gibson J, Mordaunt JM, Monaghaw EP. Botulinum toxin type A in the treatment of upper limb extremity spasticity: a randomised double blind, placebo controlled trial. Neurology. 1996;46:1306-1310. 4. Pathak MS, Nguyen HT, Graham HK, et al: Management of spasticity in adults: practical application of botulinum toxin. Eur J Neurol 2006;13 Suppl 1:42-50

Abstract No.: OP1012

Abstract Title: GREEK GUIDELINES OF HELLENIC INSTITUTION OF OSTEOPOROSIS WITH RESPECT TO THE EXERCISE OF OSTEOPOROSIS AND FALLS

Authors(s): Dionyssiotis Y

Presenting author: Dionyssiotis Y

Institution: Rhodes General Hospital, Rehabilitation Deptment, Rhodes - Greece

ABSTRACT: Introduction: Although exercise is used on a widespread basis, in postmenopausal osteoporosis has not yet significant evidence-based data. These Greek guidelines with respect to the exercise of osteoporosis and falls emerged from an extensive review of the literature of the subject. Where specialized studies lacking we preferred to refer to the opinion of experts. Material and method: The effect of exercise on bone mineral density is side specific. For this reason, the exercises should be selected to focus in clinical points of interest. (A) Aerobic exercise is effective in reducing the loss of bone density in the spine and wrist. (A) The exercise should be intensive (i.e. capable of producing significant ground reaction forces, repetitive and in short time). (C) The muscle strengthening exercises are effective in reducing bone loss while the increase in muscle strength is associated with regional increase in bone density and is maintained for a short to moderate time duration. (A) Result: Although the exercise has proven benefits, the ideal type of exercise, duration and intensity to prevent falls is an area not yet fully clear. (B) Conclusion Exercises that improve balance, including Tai Chi, are effective in population groups at highest risk of falling. (A) References 1. Bonaiuti D, Shea B, Iovine R, Negrini S, Robinson V, Kemper HC et al. Exercise for preventing and treating osteoporosis in postmenopausal women. Cochrane Database Syst Rev 2002;(3): CD000333. 2. Gillespie LD, Robertson MC, Gillespie WJ, Lamb SE, Gates S, Cumming RG, Rowe BH. Interventions for preventing fall in older people living in the community. Cochrane Database Syst Rev. 2009 Apr 15;(2):CD007146.

Abstract No.: OP1013

Abstract Title: STATIC AND DYNAMIC BALANCE MODIFICATIONS AFTER TREATMENT OF FOCAL SPASTICITY WITH BOTULINUM TOXIN

Authors(s): P. Tonin, E. Cosentino, V. Iaia, F. Piccione

Presenting author: P. Tonin

Institution: IRCCS San Camillo, Lido di Venezia - Italy

ABSTRACT: Introduction: the aim of this study is to evaluate and quantify the effects on balance, posture and postural strategies of Botulinum Toxin inoculation in adult's leg muscles with focal spasticity through the observation of changes in barycentre, in postural oscillations and in somatosensory, visual and vestibular afference. Material and Method: 8 patients with spasticity in the leg's muscles so high to interfere with the correct posture and with the static and dynamic balance underwent an injection of botulinum toxin. Before treatment and 20 days after, patients were evaluated with a cinematic and stabilometric study in a modifiable environment by using the Smart Balance Master. The parameters considered were: assessment of body barycentre with opened and closed eyes during the oscillation of the system platform or walls; sensory analysis through the observation and differentiation of somatosensory, visual and vestibular afference; joint compensation strategies; analysis of postural oscillations; study of trajectories and speed to achieve an end-point in a stable and dynamized situation. Results: After the botulinum toxin treatment we observed an overall improvement of the data considered. There was a better control of body barycentre, both with eyes opened and closed, and a decrease in postural oscillations as demonstrated by the analysis of balls. The trajectories for reaching the proposed end-point were improved and in some patients the recovery of the ability to achieve the target in the injured side and a reduction of compensation strategies in the exercise execution were observed. The sensory analysis showed an improvement of the somatosensory components in the recovery of balance compared to the visual and vestibular ones, but difficulties during the dynamic situation persisted. Conclusion: In this study the efficacy of botulinum toxin in reducing spasticity and the disappearance of foot clono destabilizing effect is also supported by an increased barycentric and postural control. The foot's more physiological contact to the ground brings about better stability and improved balance control, shown by the decrease in the number and speed of postural oscillations and by the increase in ability to achieve a predetermined end-point resulting in an improvement of the patient's functional abilities.

Abstract No.: OP1015

Abstract Title: MOTION CAPTURE: CLINICALLY USEFUL IN THE EVALUATION BACK PAIN?

Authors(s): Capodaglio P, Cimolin V, Vismara L

Presenting author: Capodaglio P

Institution: Istituto Auxologico Italiano IRCCS, Piancavallo - Italy

ABSTRACT: Introduction Computer-assisted video motion analysis systems have been found to be reliable in static and dynamic measurements despite movement artifacts of the markers (Menegoni 2008). Our aim was to investigate whether measuring spinal posture, flexion and lateral bending with an optoelectronic system would provide clinically meaningful data. Methods and Subjects Thirteen obese subjects, 13 obese subjects with LBP, and 11 healthy subjects were enrolled in the study. Results Obesity was characterized by a generally reduced ROM of the spine, due to a reduced mobility at both pelvic and thoracic level. Obesity with LBP is associated with an increased lumbar lordosis. In lateral bending, obesity with LBP is associated with a reduced ROM of the lumbar and thoracic spine, whereas obesity on its own appears to affect only the thoracic curve. Discussion Obese individuals with LBP showed higher degree of spinal impairment when compared to those without LBP. Thoracic stiffness with normal lumbar ROM appears to be a feature of obesity and it appears plausible that it might play a role in the onset of LBP. Conclusion Obesity seems correlated to an increased anterior pelvic tilt and under dynamic conditions to impaired mobility of the thoracic spine. Lateral bending is performed in a qualitatively different modality when LBP is present. Optoelectronic systems appear to provide meaningful clinical results for detecting lower spinal impairments in obese patients. References Menegoni F, Vismara L, Capodaglio P, et al. JABB 2008; 6(3):178-185.

Abstract No.: OP1035

Abstract Title: SLEEP - WAKE DISTURBANCES IN MILD TRAUMATIC BRAIN INJURY

Authors(s): Russo M.B, Stetz MC, Stetz TA, Barthlen G

Presenting author: Russo M.B.

Institution: Sleep Centre Hawaii, Kailua, Hawaii - USA

ABSTRACT: **DISCLAIMER:** The views expressed in this abstract/manuscript are those of the author(s) and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government

Introduction: Mild Traumatic Brain Injury (mTBI) is a diffuse process involving disruption of both neuronal synaptic circuitry and glial myelin maintenance, and for this reason patients typically struggle to keep their former activities of daily living due to the development of many behavioral symptoms. Mechanisms for sleep initiation and maintenance are distributed throughout the brain and brainstem, and require delicately coordinated neuronal interactions. Because traumatic brain injury disrupts components of this intricate network, we hypothesized a high occurrence of sleep / wake disturbances in patients with traumatic brain injury.

Methods: A research psychologist reviewed the blinded records of 41 consecutive mTBI patients and 44 consecutive general neurology patients without TBI for sleep-related complaints. Of the TBI patients, none had sleep complaints prior to the head injury. Sleep/wake-related problems were defined as daytime dysfunction associated with not being able to fall sleep, feeling restless at night, having nightmares, unintended awakenings at night, early morning awakening, and having excessive daytime sleepiness. Based on unstructured clinical interview notes, patients were classified as either having or not having a sleep/wake-related problem. Chi-square statistic determined if sleep problems occurred at a greater than random rate. Student's two-tailed t-test was used to compare sleep-related complaints between groups.

Results: The mTBI sample was composed mostly of males (88%) between the ages of 19 and 46 years old (median 29). The non-TBI sample was composed almost equally of males and females (53% male) between the ages of 19 and 85. In the mTBI group, 40 of 41 (98%) patients had at least one sleep related complaint. In the non-TBI group, 34 of the 44 (77%) patients had at least one sleep-related complaint. Preliminary analyses show a significant difference in the level of sleep-related complaints between mTBI and non-mTBI neurology patients, $t(85) = -6.364$, $p = .000$. That is, the average presence of sleep-related complaints of mTBI patients ($M = 4.5$, $SD = 1.9$) was significantly higher than that of non-mTBI patients ($M = 2.1$, $SD = 1.6$).

Conclusion: We conclude that wake/sleep dysfunction is highly associated with mTBI and neurology patients in general. We recommend that mTBI patients be carefully screened for sleep disorders and excessive daytime sleepiness. We suggest that sleep disorders and excessive daytime sleepiness in neurological patients with or without traumatic brain injury, is an important component of their pathology and proper treatment may be equally important to their recovery.

Support: This research was performed with the approval of the Tripler Army Medical Centre Institutional Review Board and Department of Clinical Investigations in accordance with Army Regulation 40-38 (conduct of clinical investigations).

Abstract No.: OP1039

Abstract Title: THE INFLUENCE OF SPORTS SPECIFICITY ON BALANCE CONTROL

Authors(s): Mlaker B, Hlebs S, Sarabon N.

Presenting author: Hlebs S.

Institution: University of Ljubljana, Faculty of Health Sciences, Physiotherapy Department, Ljubljana - Slovenia

ABSTRACT: Introduction: Balance is influenced by various factors such as age, sex, and dominance of a leg, height, weight, size of the foot, footwear and previous injuries. During sporting the movement of various body positions represent big challenge for balance control. The specificity of sport can have impact on balance control and hence on rehabilitation protocols after injuries. This study aimed to investigate the balance between cyclists and football players. Methods and Subjects: Seventeen cyclists (20, 56 ± 4 , 7 years) and 17 football players (20, 67 ± 2 , 5 years) with no ankle, knee and hip injuries in last six months and without any neurological conditions or spinal injuries participated in the study. Balance was assessed with one-leg and two-leg stance on the specially designed balance board (Wise Technologies, Ljubljana, Slovenia), and tandem stance and one-leg stance on the balance pad (Alcan Airex Foams, Swiss) with eyes closed. Sample size and results of balance tests were expressed as mean \pm SD. The paired Student-t-test was used for between groups comparison. The statistical significance was set at $p < 0,05$. Results: Football players achieved statistically significant ($p < 0,046$) better time in one-leg stance on the balance pad with eyes closed than cyclists, $8,37 \pm 4,82$ s and $5,81 \pm 1,60$ s, respectively. The results of three parameters in one-leg stance on balance board were statistically significant better in football players than cyclists (time in extreme back position $p = 0,036$; changes in the forward direction $p = 0,035$; angle speed $p = 0,003$). There were no statistically significant differences between cyclists and football players at tandem and two-leg stance on balance board. Conclusion: It is already confirmed that football players have good results in one-leg tests. The diversity of movements and different body positions in football are probably significant when it comes to one-leg balance tests. It is suggested that in rehabilitation protocols the specificity of sports activity have to be considered. Key words: balance control, cyclists and football players. References: 1. Emery, C.A. Is there a clinical standing balance measurement appropriate for use in sports medicine? A Review of the Literature. J. Sci. Med. Sport. 2003. 6 (4): 492-504. 2. Gerbino, G.P., Griffin, E.D., Zurakowski, D. Comparison of standing balance between female collegiate dancers and soccer players. Gait & Posture. 2007. 26: 501 – 507. 3. Bronstein, A.M., Brandt, A., Woollacot, M.H., Nutt, J.G. Clinical disorders of balance, posture and gait. 2nd ed. Oxford University press Inc. New York 2004, 1 - 20. 4. Schmitt, H., Kuni, B., Sabo, D. Influence of professional dance training on peak torque and proprioception at the ankle. Clin. J. Sport. Med. 2005. 15: 331–9. 4. Lion, A., Gauchard, G.C., Deviterne, D., Perrin, P.P. Differentiated influence of off-road and on-road cycling practice on balance control and the related-neurosensory organization. J. Electromy. Kinesiol. 2008. 3: 56 - 62. 5. Verhagen, E., Van der Beek, A., Twiska, A., Bouter, L., Bahr, R., van Mechelen, W. The effect of a proprioceptive balance board training program for the prevention of ankle sprains. Am. J. Sports Med. 2004. 2 (6): 1385-93. 6 .Sarabon, N., Omejec, G.

Abstract No.: OP1039 (continuation)

Abstract Title: THE INFLUENCE OF SPORTS SPECIFICITY ON BALANCE CONTROL

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Abstract No.: OP1045

Abstract Title: THE EFFECT OF THE EXERCISE USING A VIDEO GAME ON THE PHYSICAL FUNCTION

Authors(s): Atsushi Matsuo, Hiroshi Maeoka, Makoto Hiyamizu, Shota Kikui, Miyuki Fukunaga, Hiroaki Kubo, Norihito Hiraoka, Shu Morioka

Presenting author: Atsushi Matsuo

Institution: Kio University, Nara - Japan

ABSTRACT: Introduction Evidence suggests that increasing intensity of rehabilitation results in better motor recovery. Limited evidence is available on the effectiveness of an interactive virtual reality gaming system for disable patients. The aim of the study was to compare game-based intervention (GBI) with conventional rehabilitation (CR) in a randomized controlled crossover trial. Methods and Subjects Twenty-six participants (13 male and 13 female, mean age: 72.0±15) were enrolled in this study. Participants were randomly divided into two groups, each comprising 13 participants. Participants in the group A underwent the conventional rehabilitation protocol for 2 weeks (120 minutes a day, 5 days a week) and in the following 2 weeks, they received an additional 15 minutes of the GBI. Participants in the group B underwent in the first 2 weeks, the rehabilitation program plus GBI and in the following 2 weeks, only the conventional rehabilitation program. All participants were evaluated at baseline (T0), at 2 weeks (T1) and at 4 weeks (T2) with the Functional Reach test (FR), Timed & Up Go test (TUG) and 30-second chair stand test (CS-30). Additionally, the centre of pressure measured using a stabilometer was assessed by two sway factors: total pass length (PL) and rectangular area (REA). Results At baseline there were no significant differences between the two groups. The TUG, the CS-30, the PL and the REA were significantly improved in both groups after training period. In the both groups, there were significant differences between T0 and T2 at the TUG and the CS-30. In the only group B, there was significant difference between T0 and T2 at the REA. There were no significant differences at the FR in both groups. Conclusion: Our results suggest that GBI has a positive additional effect on inpatients rehabilitation. That effect was especially remarkable in the TUG and the CS-30. Further studies on the combination of the GBI to physical training program may result in an innovative rehabilitation.

Abstract No.: OP1050

Abstract Title: URINARY INCONTINENCE - DID PELVIC MUSCLES EXERCISES DO AT HOME RESULT?

Authors(s): Joana Macedo, Sandra Magalhaes, Sofia Amorim, Ana Trepa

Presenting author: Joana Macedo

Institution: Centro Hospitalar do Porto - Hospital Geral de Santo Antonio, Porto – Portugal

ABSTRACT: Introduction Urinary incontinence (UI) is defined by the International Continence Society Standardization Committee as "a condition in which involuntary loss of urine is a social or hygienic problem and is objectively demonstrable." Successful treatment of urinary incontinence depends on the specific cause of incontinence. In general, the first choice for treatment is the least invasive, with the least number of potential complications for the patient. The pelvic floor rehabilitation emphasizes strengthening the pelvic floor muscles that are critical in maintaining urinary continence. Pelvic muscle exercises may be used alone, reinforced with biofeedback therapy (BF), or enhanced with electrical stimulation (EE). The aim of this work is to know the success or not of pelvic muscles exercises taught in the consultation and did at home by the patient without BF or EE. Methods and Subjects Were consulted the medical files of patients that were referred to PRM consultation diagnosed with IU and treated only with pelvic muscles exercises did at home, in a total of 48 patients. Were collected retrospectively, demographic data and clinical history, with a complete characterization of the incontinence. It was elaborate a questionnaire that patients responded via phone call. Results and Conclusion At the time of elaboration of the abstract all questionnaires are not available. Exact results and respectively conclusions of our study will be exposed when they are presented in the Congress. References Nadir N, Silverberg M. Urinary Incontinence. emedicine. October 20, 2009. Abrams P, Artibani W, Cardozo L, Khoury S, Wein A. Clinical Manual of Incontinence in Women. Health Publications 2005.

Abstract No.: OP1054

Abstract Title: NO IMMEDIATE EFFECTS OF 2-MINUTE WHOLE BODY VIBRATION OF POSTURAL STABILITY AND MOTOR NEURON EXCITABILITY IN ORDER INDIVIDUALS

Authors(s): J. Bagheri, J.B.J. Bussmann, H.L.D. Horemans, G. Visser, H.J. Stam

Presenting author: J. Bagheri

Institution: Erasmus MC, Rotterdam – The Netherlands

ABSTRACT: Background: Whole Body Vibration (WBV) is a relatively new method of exercise that might be valuable in improving body balance in elderly persons. WBV has shown to modulate motor neuron excitability, and it can be hypothesized that this modulation induces the effects on balance. Aims: The aim of the study was to determine the immediate effect of WBV on postural stability and motor neuron excitability in healthy adults. Methods: Ten healthy volunteers were recruited (n=10; 4 men, 6 women; mean age 58.2y). The study consisted of two sessions, in which subjects were asked to stand on a whole body vibration WBV) device (Power Plate) for 2 minutes. In one session the device was switched on (30 Hz and low amplitude; WBV condition) and it was switched off in the other (control condition). We evaluated postural stability with a force plate and motor unit excitability with soleus H- reflex measurements, before and immediately after each condition. Force plate parameters were normalised range, mean displacement and mean velocity of the center of pressure [Anterior-Posterior (AP) and Medio-Lateral (ML) direction]. H-reflex parameters were amplitude of H-reflex, amplitude of M-wave, and H/M ratio. The changes in the WBV condition were compared with the changes in the control condition via non-parametric test. Results: Postural stability parameters did not show any significant difference between WBV and control condition. Similarly, we did not find a statistical difference between both conditions for the H-reflex parameters. However, in the WBV condition the amplitude of H-reflex was significantly reduced after intervention (-25%, p=0.03). Conclusion: We conclude that a 2-minute period of WBV does not have an immediate effect on postural stability and H-reflex compared to a control condition.

Abstract No.: OP1056

Abstract Title: Early Rehabilitation in Patients with Temporary Pace Maker in Intensive Care Units

Authors(s): Matanovic D, Poavlivic S

Presenting author: Matanovic D

Institution: School of Medicine University of Belgrade, Klinical centre Serbia, Belgrade - Serbia

ABSTRACT: Cardiac rehabilitation (CR) is an effective but underprovided treatment for patients recovering from acute cardiac events i.e. acute myocardial infarction (AMI), percutaneous coronary interventions (PCI) and coronary artery bypass surgery (CABG). There are no any CR international guidelines for patients with a temporary pacemaker while there waiting for permanent one. The aim of this study is to define whether CR is effective and safe in the setting of temporary transvenous pacing. We have examined 51 patients hospitalized in intensive care unit. Eighteen of them were hospitalized with diagnosis of acute myocardial infarction (AMI) complicated by AV block and 33 patients with AV block in other conditions. All patients have indications for temporary pacing. We have an early rehabilitation program on every day basis which includes exercise for peripheral circulation and sitting on the edge of a bed. Before and after the rehabilitation program we registered a blood pressure. There was not any significant rise of blood pressure observed during and after an early rehabilitation program, and there were no tachyarrhythmias and any other complication noticed. The CR will accelerate patients return to their desired levels of daily activity. It will also improve patient's satisfaction. In our study we haven't registered any complication during an early rehabilitation program. The patients were in satisfactory capacity. Although larger studies are needed, these data suggest that this program is safe and effective.

Abstract No.: OP1060

Abstract Title: REHABILITATION OUTCOMES OF STROKE PATIENTS IN JERUSALEM BETWEEN 2002 AND 2006

Authors(s): Zeev Meiner, Anna Sajin, Ivelin Yovchev, Jeanna Tsenter, Irina Gartsman, Elior More, Mara Shochina, Eliana Ein-Mor, Isabella Schwartz

Presenting author: Zeev Meiner

Institution: Hadassah Hebrew University Hospital, Jerusalem - Israel

ABSTRACT: Objective: To describe the functional disability and rehabilitation outcomes of 556 stroke patients between 2002 until 2006. Background: Stroke is one of the major causes of debilitation and handicap. In the NASIS studies held in 2004 and 2007 in Israel, 13,000 new cases of stroke were identified each year, 27% of them were referred to rehabilitation therapy. The factors that influence the prognosis of rehabilitation in this population are not yet determined. Methods: This is an observational cohort study of all stroke patients treated in the department of Rehabilitation in Hadassah medical center in Jerusalem between the years 2002 and 2006. Demographic data, clinical characteristics, admission lengths of stay, neurological and functional status and discharge destination were obtained. Neurological evaluation was assessed using the NIH Stroke Scale (NIHSS). Activity of daily living (ADL) was measured using the FIMTM instrument. Overall prognosis was measured using the modified Rankin scale (MRS). Results: 556 stroke patients were included in the study, 330 (59%) were males. The mean age was 68.4 ± 12 and 356 (64%) of the patients were above the age of 65. Most of the patients (52%) had left hemispheric CVA. The time of arrival to rehabilitation was 17.1 ± 12 days and the mean total length of hospitalization in rehabilitation was 43.2 ± 25 days. The mean FIM value at admission was 76.8 ± 23 and the patients gained a mean of 19.4 ± 15 FIM units during the rehabilitation period. At the end of the rehabilitation period, 70% reached moderate, mild or no limitation scores according to the MRS (≤ 3). 96.3 % were released to their home among them 2/3 were independent or requires mild assistance. Significant grave prognostic factors were old age and existence of aphasia or neglect. Conclusions: Although stroke causes severe disability, at the end of the rehabilitation process most of our stroke patients are able to return to their home independently with FIM score above 90.

Abstract No.: OP1062

Abstract Title: EEG-BASED BRAIN-COMPUTER INTERFACE (BCI) IN CHRONIC QUADRIPLLEGICS USING ROBOTIC ARM DEVICE AS FUNCTIONAL ASSISTIVE TECHNOLOGY - CLINICAL SURVEY AND POSTTRIAL FOLLOW-UP

Authors(s): G. Onose, A. Anghelescu, C. Grozea, C. Chendreanu-Daia, A. Mirea, S. Fazli, M. Danoczy, F. Popescu

Presenting author: G. Onose

Institution: Teaching Emergency Hospital "Bagdasar-Arseni", Bucharest - Romania

ABSTRACT: AIM: To see how far non-invasive BCI can be brought into the lives of SCI patients for reaching and grasping assistance - to our knowledge, the first such study – using appropriate technological enhancements to BCI itself. MATERIAL & METHODS: In the 9 quadriplegic studied patients group cluster analysis was performed. Multiple regression method emphasized contribution to the dependent variable (EEG-BCI performance error) of the following independent variables: age, motor and sensitive AIS scores, and preferentially collected most discriminative frequency bands. RESULTS: The analysis of the EEG mapping based spectrograms of the studied quadriplegics, pointed out the highest performance level of control could be associated to the shift of the cerebral waves towards the fast frequencies, mainly to the beta-spectral power. In a formula that gives the dependent EEG-BCI variable, the most important contribution is brought by the age (coefficient 1.41; $p = 0.024$) then by the AIS motor score (coefficient = 0.74; $p = 0.034$, positively). DISCUSSIONS & CONCLUSIONS: According to our - preliminary - results, the motivation for quadriplegics to use EEG-BCI based mechatronic/robotic devices, is mainly related to their proficiency, determination and age, offering a valuable perspective to improve the severe activity limitations, post SCI paralyzed people encounter in managing activities/instrumental (activities) of daily living (ADL/ IADL) including possibly to compensate severe locomotion limitations in paraplegics. REFERENCES: Popescu F., Fazli S., Badower Y., Blankertz B., Muller K.-R. - Single trial classification of motor imagination using 6 dry EEG electrodes - PLoS ONE 2(7): e637. doi:10.1371/journal.pone.0000637, 2007

Abstract No.: OP1065

Abstract Title: OUR EXPERIENCE CONCERNING THE USE OF EXTRACORPOREAL SHOCKWAVE THERAPY FOR THE SPASTICITY MANAGEMENT, IN CHILDREN WITH CEREBRAL PALSY - PRELIMINARY RESULTS

Authors(s): G. Onose, L. Padure, C. Daia Chendreanu, A. Mirea, M. Bejan, L. Onose, M. Haras, A. Anghelescu

Presenting author: Gelu Onose

Institution: Teaching Emergency Hospital "Bagdasar-Arseni", Bucharest – Romania

ABSTRACT: BACKGROUND: The medical use of Shock Waves is called Extracorporeal Shock Wave Therapy (ESWT). Our purpose was to evaluate the response to ESWT in cerebral palsy spasticity. MATERIAL & METHODS: 50 spastic children (20 Males, 30 Females; 2-9.1 years old). We applied focused ESWT, targeting the mainly affected muscles, with the same parameters (energy: 0,15 mJ/mm²; shot dose: 500 shocks/ min; frequency: 10 Hz). Each patient received 1 therapy session. All had evaluations - global: segmental mobility, based on active range of motion) and analytical, based on Ashworth modified scale scores - at 3 days and at 2 weeks (+/- 5 days) afterwards; additionally, we evaluated global patient's or his/her adult attendant's related appraisal. RESULTS: ESWT proved statistically efficient on the global functioning in both, the upper (p=0.0046) and lower (p=0.0004) limbs. It resulted in a significant decrease of the Ashworth modified scale level for triceps suralis (p= 0.000) and for adductors (p=0.010), as only the number of these muscles was large enough for reliable mathematical assessment. Regarding adult attendant's related appraisal, its average (2.3) placed it towards the "good" established interval. DISCUSSIONS & CONCLUSIONS: ESWT improved spasticity in affected children. Further studies are needed for a more reliable statistical assessment and to improve the methodology. In this respect, we have recently started a study concerning the effects of ESWT on spasticity in adults, implying a unitary and more adaptive to the range of spasticity methodology (statistical results not available yet). REFERENCES: Wess OJ - A neural model for chronic pain and pain relief by extracorporeal shock wave treatment. Urol Res 36(6):327-334. doi:10.1007/s00240-008-0156-2, 2008

Abstract No.: OP1070

Abstract Title: A NOVEL TREATMENT FOR POST STROKE HEMIPLEGIC SHOULDER PAIN USING SEGMENTAL NEUROMYOTHERAPY: A RANDOMIZED CONTROLLED STUDY

Authors(s): Ratmansky Motti, Defrin Ruth, Soroker Nachum

Presenting author: Ratmansky Motti

Institution: Loewenstein Rehabilitation Hospital, Raanana, Raanana – Israel

ABSTRACT: Purpose: Assess the effect of segmental neuromyotherapy (SNMT) on post-stroke hemiplegic shoulder pain (HSP). Method: 24 post-stroke patients admitted for rehabilitation, with persistent HSP and positive Neer's and hand-behind-neck tests, received standard therapy for HSP. Of these, 12 patients received 12 additional treatments of SNMT. Shoulder pain severity and upper-limb function were evaluated using the Visual Analog Pain Scale (VAS), Algometry and the Fugl-Meyer arm score, spasticity was evaluated using the Asworth scale. Assessments were conducted before treatment (T1), one day after (T2), in the middle (T3), at the end (T4), and two month later (T5). Results: The treatment group demonstrated significant improvement in the Fugl-Meyer arm score, at T4 (4.67 ± 8.7 increase vs. 1.50 ± 2.9 decrease compared to baseline, $p=0.016$) and T5 (7.58 ± 10.2 increase vs. 1.33 ± 6.4 decrease compared to baseline, $p=0.044$). There was a significant improvement on Neer's test at T4 ($p=0.014$), and borderline significant improvement at T5 ($p=0.072$). A larger decrease in VAS scores was exhibited by the treatment group at T5 (3.17 ± 3.1 vs. 1.38 ± 2.5 , $p=0.068$). No significant differences were demonstrated between the groups in the HBN test, algometry to painful muscles and in spasticity evaluation by using the Asworth scale. Conclusion: Four weeks of SNMT for stroke patients with HSP undergoing rehabilitation, in addition to standard therapy, provide a significant advantage in pain relief and overall arm function.

Abstract No.: OP1073

Abstract Title: HEMISPHERAL ACTIVATION DURING SNOEZELN TREATMENT IN STROKE PATIENTS

Authors(s): Luly Treger, Ella Birg, Gayil Tahel

Presenting author: Luly Treger

Institution: Loewenstein Hospital Rehabilitation Center, Rishon Letzion – Israel

ABSTRACT: Introduction and Aim: Treatment in a controlled multi-sensory environment (CMSE), referred to as "Snoezelen", is used as a common treatment tool in post stroke patients. The Functional Transcranial Doppler (TCD) is a method of showing a change in blood flow in the main arteries of the brain bilaterally during different kinds of activity. An increase in blood flow velocity in the Middle Cerebral Artery (MCA) is an expression of hemispherical activation during the execution of a task. The purpose of the research is to examine hemispheric activation during Snoezelen treatment in post stroke patients. Methods and Subjects: 15 post stroke inpatients, which received standard rehabilitation treatment, were included into the study. All participants underwent TCD investigation while receiving different stimuli (visual, sensory, auditory) in the Snoezelen environment. Results: Our research showed an increase of blood flow in the damaged hemisphere after applying all kinds of stimulus during the test. A significant increase of blood flow was found in the MCA of the damaged hemisphere after applying visual stimulus and in the resting period after applying other kinds of stimulus. This may indicate of a more significant activation of the damaged hemisphere (but not the non-damaged) after applying a visual stimulus and in resting time, after applying all kinds of stimulus. Conclusions: The Snoezelen environment treatment program creates a positive response in the post stroke patients and can be effective for neurological and functional improvement. The TCD results demonstrated that for stroke patients, the application of visual stimuli in the Snoezelen environment causes more activation in the damaged hemisphere than that of the non-damaged hemisphere.

Abstract No.: OP1075

Abstract Title: PHYSIOTHERAPY IN DELAYED REHABILITATION OF SEVERE TBI PATIENTS

Authors(s): Martin Neeb, Tali Cohen, Janet Berman, Elior Moreh, Jeanna Tsenter, Zeev Meiner, Isabella Schwartz, Iris Fishes

Presenting author: Martin Neeb

Institution: Department of Physiotherapy and Physical Medicine and Rehabilitation, Hadassah Medical Center1, Jerusalem - Israel

ABSTRACT: Objective: To describe the physiotherapy treatment and outcome of 8 severe traumatic brain injury (TBI) patients referred to our rehabilitation centre from countries outside of Israel several months after brain injury. Background: The incidence of TBI is 1.5/1,000, 20% of cases being moderate and severe. The main causes of TBI are motor vehicle accidents and falls. Long term complications include spasticity, heterotopic ossification (HO), and epilepsy. The outcome of severe TBI patients whose rehabilitation was delayed is unknown. Methods: Between 2006 and 2010, 8 patients from countries outside of Israel after severe traumatic head injury were treated in the rehabilitation department of Hadassah University Hospital, Jerusalem, Israel. Physiotherapy treatment included: balance exercises, stretching, strengthening, bed mobility, hydrotherapy, gait preparation and gait training including robotic assisted gait training (Lokomat). In addition, all patients received standard daily multidisciplinary rehabilitation treatment. Rehabilitation outcomes were the functional ambulatory capacity scale (FAC) and functional evaluation scale compose of 5 domains including bed mobility, bed to chair transfer, sitting and standing balance and walking. ADL functions were evaluated using the Functional Independence Measurement scale (FIM). Results: All patients were males with mean age of 25.5 years (17 - 49 years). They were all injured in motor vehicle accidents. Mean Glasgow Coma Scale at injury was 4.7 (3-7) and the mean acute hospitalization period was 146 days (22-380 days). Their mean stay in the rehabilitation department was 113 days (34-186 days). Upon admission, none of the patients could walk with mean FAC of 0/5. On discharge all had achieved assisted walking and two independent walking with mean FAC score of 1.5/5 ($P<0.001$). At discharge, all patients improved in bed mobility, transfer and sitting balance. In standing balance and walking, only 3 out of 8 were able to walk with supervision, all the others still need assistance in walking. On admission, all patients required maximal assistance in ADL and the average FIM score at admission was 31.5 ($SD=8$) which improved to 60 ($SD=23$) ($P<0.05$) at discharge. Conclusions: The rehabilitation of the TBI patients required special expertise and techniques after its delayed start. However, the prolonged comprehensive rehabilitation permitted even severe TBI patients to achieve improvement in function and quality of life.

Abstract No.: OP1086

Abstract Title: A NEW GRADING FOR EASY AND CONSIGNE DESCRIPTION OF FUNCTIONAL STATUS AFTER SPINAL CORD LESIONS

Authors(s): Amiram Catz, Yoav Benjamini

Presenting author: Amiram Catz

Institution: Loewenstein Rehabilitation Hospital, Raanana - Israel

ABSTRACT: Introduction: Disability scales describe daily function using multiple item scores. A study was designed to develop a concise and interpretable data-based characterization of daily task accomplishment for patients with spinal cord lesions (SCL). Methods and subjects: The study was based on cross-sectional statistical analysis of Spinal Cord Independence Measure (SCIM) III item scores (SIS) of 328 patients who participated in a multi-centre study at 13 spinal units in 6 countries. The k-means clustering approach, with the k-medoids algorithm, was used to generate clinically meaningful SIS clusters, characterized by smaller differences between patients' SIS within clusters than between the centres of the clusters. Results: Analysis revealed 8 SIS clusters corresponding to 8 functional grades designated as A-H. A higher grade indicates that the patient carries out more difficult tasks. Patients with functional grades of A-F probably require some assistance in every daily activity. A grade A patient probably cannot carry out any SCIM III task. A grade H patient can likely carry out all SCIM III tasks without assistance. Based on the patient's SIS, a customized software program locates the nearest cluster centre and identifies the functional grade to which the patient belongs. Throughout rehabilitation, the patients' functional grade improved, and the distribution of patients with similar functional grades within the total SCIM III score deciles remained stable. Discussion: A new classification based on SIS clusters enables a concise description of overall functioning and task accomplishment distribution in patients with SCL. A software tool is used to identify the patients' functional grade. Conclusions: The findings support the validity and reliability of the classification.

Abstract No.: OP1090

Abstract Title: THE COMPLEX CORRECTION OF THE FUNCTIONAL RESERVES OF THE ORGANISM AT THE PERSONS WITH RISK OF THE ARTERIAL HYPERTENSION DEVELOPMENT

Authors(s): E. Ivanova, F. Muharliamov, s. Pletnev, A. Uyanaeva, A. Razumov

Presenting author: E. Ivanova

Institution: The Russian Scientific Center for Restorative and Resort Medicine, Moscow - Russia

ABSTRACT: Key words: Functional reserves, complex correction, arterial hypertension, BIOLONG-pearl baths, water-soluble antioxidant.

Introduction: Actual studying of indicators of functional reserves and adaptable possibilities of an organism at the persons inclined to development of a proof arterial hypertension, working out of complex programs the adapted influence constructed on principles of complementarily, strengthening of effects of their components, in our opinion, is.

Material and method: We survey 150 men at the age from 20 till 45 years. Complex of restorative correction:

- BIOLONG-pearl baths;
- psychological and relax therapy;
- physical trainings;
- an individual diet.

BIOLONG is the foam washing composition containing in quality of the basic operating beginning a preparation mitofen - water-soluble polymeric structurally functional analogue natural coenzyme Q10. Unlike analogue the preparation is an effective water-soluble antioxidant. The preparation promotes increase of power supply of live cages at the expense of more favorable use of oxygen in a respiratory chain, and also will neutralize oxidizers which are formed at sharp oxygen insufficiency in organism fabrics.

Result: There were normalization of variability the arterial pressure is noted, especially during evening and night time (in 84% of cases), absence of incidental increase the arterial pressure during the evening and night time observed before treatment, is revealed decrease in the general vascular peripheral resistance at carrying out of loading test (62%), improvement microcirculation blood-groove (90%), normalization daily excretion catecholamine (30%), harmonization of functional activity cardio respiratory systems at physical activity (86%), reduction of degree of meteo sensitivity (54%), and also mood improvement, decrease in uneasiness and activity increase (94%).

Conclusion: The given technology can be recommended for inclusion in programs of medical rehabilitation, restorative and improving establishments, SPA and WELLNESS centers.

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Abstract No.: OP1091

Abstract Title: MODULATION OF CORTICAL EXCITABILITY BY TRANSCRANIAL DIRECT STIMULATION IN STROKE PATIENTS

Authors(s): Lee Suk Kim, Dae-Yul Kim, Chung Reen Kim

Presenting author: Dae-Yul Kim

Institution: Institute for Orthopaedic Surgery 'Banjica", Belgrade – Serbia

ABSTRACT: Introduction: It has been reported that transcranial direct current stimulation (tDCS) is effective in promoting the recovery of motor function, cognition, and speech in stroke patients. However, only a few studies have reported the change of cerebral excitability. We investigate the effect of tDCS on upper extremity motor function and cerebral excitability in stroke patients. Methods and subjects: Hemiparetic stroke patients whose symptom onset occurred at least three months previously and whose upper extremity motor function was more than Brunnstrom stage 3 were included. We delivered DC at 2mA for 20 minutes to the anodal group and sham stimulation to the sham group on the ipsilesional motor cortex. The treatment period was two weeks (five days per week), and the effect of tDCS was evaluated both before and immediately after, one month later, and then three months later, using the Fugl-Meyer Assessment (FMA) score. Functional magnetic resonance imaging (fMRI) was carried out both before and immediately after tDCS. Results: We enrolled ten hemiparetic stroke patients. The patients were divided into an anodal group and a sham stimulation group. FMA scores were significantly improved after one month and three months compared to their pre-treatment scores in anodal group. However, sham group patients did not show improvement of FMA scores. The activity of contralesional primary sensorimotor cortex was significantly increased in anodal group than sham group. The decreased activity of both frontoparietal cortex and the primary sensorimotor cortex as well as the increased activity of the ipsilesional primary motor cortex were correlated with increased FMA scores. Discussion: We demonstrated that tDCS modulated cortical excitability and the cortical change was correlated with the improvement in motor function of upper extremity after tDCS. Conclusion: It seems that tDCS is a useful modality for recovery of upper extremity. Further study is necessary for larger randomized controlled trial. References 1. Alonso-Alonso M, Fregni F, Pascual-Leone A. Brain Stimulation in Poststroke Rehabilitation, *Cerebrovasc Dis* 2007;24:157–66. 2. Kimberley TJ, Khandekar G, Borich M. fMRI reliability in subjects with stroke. *Exp Brain Res*. 2008;186:183-90. 3. Schlaug G, Renga V, Nair D. Transcranial Direct Current Stimulation in Stroke Recovery. *Arch Neurol*. 2008;65:1571-6. 4. Uy J, Ridding MC. Increased cortical excitability induced by transcranial DC and peripheral nerve stimulation. *J Neurosci Methods*. 2003;127:193-7. 5. Hummel F, Cohen LG. Improvement of motor function with noninvasive cortical stimulation in a patient with chronic stroke. *Neurorehabil Neural Repair*. 2005;19:14-9.

Abstract No.: OP1093

Abstract Title: ADMISSION NORTON SCALE SCORES CORRELATE WITH REHABILITATION OUTCOME AND LENGTH IN ELDERLY PATIENTS FOLLOWING HIP ARTHROPLASTY

Authors(s): Dan Justo, Natalia Vislapu, Victor Shvedov, Marina Fickte, Alexander Danylesko, Polina Kimelman, Charlotte Merdler, Yaffa Lerman

Presenting author: Dan Justo

Institution: Tel-Aviv Sourasky Medical Center, Tel-Aviv - Israel

ABSTRACT: Introduction: Norton scale scores are used for evaluating pressure sore risk. The aim of the present study was to determine if Norton scale scores in elderly patients upon admission to rehabilitation following hip arthroplasty correlate with rehabilitation outcome and length. Methods and subjects: This was a retrospective study conducted at a geriatric department in a tertiary medical centre. Included were consecutive elderly patients admitted for rehabilitation following hip arthroplasty during 2009. Admission Norton scale scores, admission albumin serum levels, mini-mental status examination (MMSE) scores, discharge walking functional independence measure (FIM) scores, and rehabilitation length in days were documented. Results: The cohort included 201 patients: 160 (79.6%) females and 41 (20.4%) males. The cohort mean age was 82.7 ± 6.5 years (median: 83 years; IQR: 79-87 years). The mean discharge walking FIM score was 5.2 ± 0.9 (median: 5; IQR: 5-6), and the mean length of rehabilitation was 19.9 ± 7.8 days (median: 18 days; IQR: 14-24 days). Admission Norton scale scores correlated with the discharge walking FIM scores ($r=0.28$; $p=0.002$), and the length of rehabilitation ($r=-0.22$; $p=0.014$) following adjustment for age, admission albumin serum levels, MMSE scores, gender and the type of hip surgery. Linear regression analysis showed that admission Norton scale scores were independently associated with the discharge walking FIM scores ($p=0.002$) and rehabilitation length ($p=0.016$). Conclusions: Admission Norton scale scores correlate with rehabilitation outcome and length in elderly patients following hip arthroplasty. The Norton scoring system may be used for predicting the outcome and the duration of rehabilitation in elderly patients following hip arthroplasty.

Abstract No.: OP1094

Abstract Title: THE INFLUENCE OF THE NEUROLOGICAL LEVEL OF INJURY IN BONE'S MINERAL CONTENT AND MECHANICAL PROPERTIES, LEAN MASS AND FAT MASS IN PARAPLEGIA

Authors(s): Y. Dionyssiotis, K. Petropoulou, N. Papaioannou, P. Papagelopoulos, G. P. Lyritis, T. Thomaides

Presenting author: Y. Dionyssiotis

Institution: Rehabilitation Department, Rhodes General Hospital, Rhodes - Greece

ABSTRACT: AIM To investigate the influence of the neurological level of injury (NLoI) in bone's mineral content (BMC) and mechanical properties, lean mass (LM) and fat mass (FM) among paraplegics METHODS Thirty complete paraplegics were separated in group A (15 men, high paraplegia) and group B (15 men, low paraplegia) in comparison with 10 healthy men as control group (C). In all subjects stress strain index (SSI) at 14% (SSI2) and 38% (SSI3) of the tibia length and the difference δ SSI 3-2 ($SSI3 - SSI2$), by peripheral quantitative computed tomography (pQCT, Stratec XCT 3000, Stratec, Pforzheim, Germany) and values of lower limbs' BMC, LM and FM (g) by whole body dual X-ray absorptiometry ((DEXA, Norland XR 36, Norland Corporation) were measured. RESULTS Bone strength parameters, BMC and LM were statistically decreased, but no difference was found in FM, compared to controls. A correlation between the duration of paralysis, age and δ SSI 3-2 was found in group of low paraplegics ($r=0.53$, $p=0.027$ and $r=0.5$, $p=0.04$, respectively). Duration of paralysis was strongly correlated with FM in high paraplegics' lower limbs ($r=0.5$, $p=0.05$). CONCLUSIONS Because of the non significant duration of paralysis the paraplegic groups act different in mechanical properties of the tibia and lower limbs' body composition. REFERENCES Dionyssiotis Y, Lyritis G, Papaioannou N, Papagelopoulos P, Thomaides T. The influence of the neurological level of injury muscles and fat in paraplegia Journal of Rehabilitation Research & Development 2009 46 (8): 1037 -1044

Abstract No.: OP1097

Abstract Title: EARLY POSTOPERATIVE FITTING OF THE AIR-LIMB PROSTHESIS FOR TRANSTIBIAL AMPUTATIONS

Authors(s): Kristal Anat, Dvir Zeevi, Yizhar Ziva, Siev-Ner Itzhak

Presenting author: Siev- Ner Itzhak

Institution: Sheba Medical Center, Tel Hashomer, Kiryat Ono – Israel

ABSTRACT: Introduction: According to the method of immediate fitting of a temporary Prosthesis, the prosthesis is adjusted after the amputation, or during the first week after it. The rehabilitation process begins with the patient standing while partially bearing weight on the Prosthesis. In spite of many experiments and trials to adopt this process of rehabilitation, it has not been universally adopted, mainly because of the materials used (Plaster of Paris). Presently, as materials used have improved research and experiments are being renewed, to evaluate the efficiency of the process, using the Air- Limb Prosthesis. Objectives: The aim of the study was to check whether an early adjustment of the Air-Limb prosthesis, will shorten the healing time of the stump and the process of rehabilitation. Methods 20 Transtibial amputees were recruited and divided in to two groups. The research group received the Air- Limb 5 days post amputation and began exercising with it. The control group was managed with standard soft dressings. The duration of stump maturation, from amputation to fitting of a permanent prosthesis and the duration of the total days of hospitalization were calculated. Results: The results of this research show that the research group was fitted with a permanent Prosthesis in half the time, comparing to the control group, (40 ± 49 days; 79 ± 109 days) ($p=0.034$). Furthermore, the research group's total time of hospitalization, was significantly shorter; 68 ± 56 days in the research group compared to 125 ± 87 days in the control group ($p=0.046$). In addition, both groups showed strong correlation between the time from amputation to the adjustment of a permanent Prosthesis and total time of rehabilitation ($r=.988$; $p=.000$). Conclusion In conclusion, in the current study, the use of the Air- Limb prosthesis significantly shortened the rehabilitation process of transtibial amputee's, without compromising the maturation process of the stump.

Abstract No.: OP1098

Abstract Title: MEDICAL DECISION-MAKING IN INJURED VOLLEYBALL PLAYERS CANDIDATES FOR PROFESSIONAL TEAM

Authors(s): Atzmon Tsur

Presenting author: Atzmon Tsur

Institution: Western Galilee Hospital, Nahariya - Israel

ABSTRACT: Introduction: Competitive volleyball teams master six basic skills: 1. Serve: the ball is first tossed high in the air, and then the player makes a timed approach and jumps to make contact with it. 2. Reception: the attempt by a team to properly handle the opponent's serve, or any form of attack. 3. Set: to put the ball in the air in such a way that it can be driven by an attack into the opponent's court. The setter coordinates the offensive movements of a team, and is the player who ultimately decides which player will actually attack the ball. 4. Attack: to handle the ball so that it lands in the opponent's court and cannot be defended. 5. Block: the actions taken by players standing at the net to stop or alter an opponent's attack. 6. Dig: the ability to prevent the ball from touching one's court after a spike or attack, particularly a ball that is nearly touching the ground. Methods: Five professional volleyball players were candidates to join a first division team in Israel. Their medical dossier presented previous injuries occurred during their sport's activity. Two of the players had a suprascapular nerve injury, one had a lesion in the hamstrings, another one had an operated ankle sprain and the fifth one had an operated ACL tear in both knees and a mallet Vth finger. The team physician had to make the decision of whether they are able to continue playing volleyball at a high level, taking into consideration the different skills necessary in this sport. Discussion and Conclusions: Players having suprascapular nerve injury might have difficulties in hitting the serve and blocking the ball. Those with unstable knee or ankle are at risk when landing following a jump. Lesion in the hamstrings cause local pain during jumping to attack or to block the ball and a mallet finger will disturb the player in setting the ball or handling it in attack. Key words: volleyball, techniques, injuries.

Abstract No.: OP1100

Abstract Title: CUEING DEVICES FOR GAIN ABILITY IN PARKINSON: WHICH ONE IS BETTER?

Authors(s): Areerat Suputtitada, Mana Sriyudthasak, Chatkaew Pongmala

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ABSTRACT: INTRODUCTION AND OBJECTIVE: Parkinson's disease is the neurodegenerative disorders that results in characteristic motor abnormalities including postural instability and gait impairment. It consists of short shuffling steps, decreased walking speed, increased cadence and gait freezing. The use of sensory cues to improve gait in Parkinson's disease patients has been established as an effective assistance for improving gait. Martin (1967) was the first who discovered visual cue such as transverse line could improve gait of Parkinson's disease patient. Present studies develop visual, auditory or somatosensory cue to improve gait of Parkinson's disease patient. The purpose of this study is to examine the effect of cueing device using visual, auditory and somatosensory stimuli during walking in Parkinson's patient using motion analysis. MATERIALS: CUEING DEVICE: It consists of 3 components; Visual, Auditory and Somatosensory parts. A laser pointer with a switch projecting the transverse line by using fibre optic is used for the visual part. An auditory part will use ISD1730 to generate the rhythm sound. For the somatosensory part, we will use vibration and microcontroller to create the rhythm vibration. METHODS 17 Parkinson patients and 17 normal elderly are asked to walk on normal speed along 10 m walkway 8 times by walking without cueing device, walking with visual cue, walking with auditory cue, walking with somatosensory cue, walking with visual and auditory cues, walking with visual and somatosensory cues, walking with auditory and somatosensory cues and walking with three cues. Both conditions are done 3 times and all are measured by using motion analysis device. RESULTS There are statistically significant improvement of freezing of gait, step length, cadence and walking velocity in both groups after cueing devices compare to baseline by Mann-Whitney U test at $p < 0.05$. There are statistically significantly better score of step length and walking velocity in Parkinson group compare to normal elderly group by Wilcoxon Signed rank test at $p < 0.05$. There is no statistically significant difference between each type of cues by ANOVA at $p < 0.05$. DISCUSSION: This combined cueing device that we made by ourselves can improve gait ability by motion analysis in Parkinson patients as other previous studies. There is no statistically significant difference between each type of cues. So that for the clinical use, we can select to use each cue depend on the intact sensation that each patient has. SUMMARY This experimental with normal control study revealed the significantly effective of Visual, Auditory and Somatosensory cues for improve gait ability in Parkinson patients. The efficacy of all gait abilities were more statistically significant in Parkinson patients when compare to normal elderly. This combined cueing device was the product we made by ourselves. There is no statistically significant difference between each type of cues. CONCLUSION Visual, Auditory and Somatosensory cues can improve gait ability in Parkinson patients.

Abstract No.: OP1102

Abstract Title: MOTOR IMAGERY ABILITY IN TRAUMATIC BRAIN INJURY

Authors(s): K. Oostra, A. Vereecke

Presenting author: Kristine Oostra

Institution: University Hospital Ghent, Gent - Belgium

ABSTRACT: Motor imagery can be defined as the process of mental stimulation of a given action without actual motor execution. Motor imagery may enhance motor recovery after acquired brain injury and has recently been recommended for use in rehabilitation programs. Prior to mental training it is necessary to assess whether a person is able to engage in motor imagery. This study was performed to examine motor imagery ability in patients with traumatic brain injury. Participants were 20 patients with traumatic brain injury and 13 healthy volunteers (controls). The following psychometric tests were performed: - Movement Imagery Questionnaire –RS - Mental chronometry tests - Hand laterality judgement test - Imagery of gait test Results show that accuracy of motor imagery is at least partially preserved in patients with traumatic brain injury although imagined movements are performed more slowly. Hence mental practice using motor imagery can be a valuable and cost effective training method after acquired brain injury. Bibliography Braun S. The effects of mental practice in stroke rehabilitation: a systematic review. Arch Phys Med 2006; 87 : 842-852 Dickstein e.a. Motor imagery for gait rehabilitation in post-stroke hemiparesis Phys ther 2004; 84: 1167-1177 Hall C. e.a. Measuring Movement imagery abilities: a revision of the movement Imagery questionnaire. Journal of mental imagery 1997; 21: 143-154 Liu K. e.a. Mental imagery for promoting relearning for people after stroke : a randomized controlled trial Arch Phys med 2004; 85: 1403-1408 Malouin F.e.a. reliability of mental chronometry for assessing motor imagery ability after stroke. Arch Phys Med 2008; 89: 311-319

Abstract No.: OP1104

Abstract Title: MODULAR SEGMENTAL ENDOPROTHESES FOR RECONSTRUCTION OF DIAPHYSEAL DEFECTS. ADVANCED CLINICAL OUTCOME WITH INTENSIVE REHABILITATION PROGRAM

Authors(s): V.I. Sakellariou, AF. Mavrogenis, H. Tsibidakis, G. Mazis, A. Farmakidis

Presenting author: V.I. Sakellariou

Institution: 1st Orthopaedic Department, University of Athens, ATTIKON University General Hospital, Athens - Greece

ABSTRACT: Introduction: Advances in imaging, surgical techniques, radiation therapy, and chemotherapy; patients with bone malignancies have had a considerable improvement in prognosis of diaphyseal malignant bone lesions. Aim: To present preliminary results from the use of an intramedullary diaphyseal segmental defect system for limb salvage after primary or metastatic tumour resection. Material & Methods: Six patients underwent wide segmental resection and limb salvage surgery for primary or metastatic bone tumors involving the diaphysis of the femur, the tibia and the humerus using a modular intramedullary diaphyseal segmental defect fixation system. There were 4 men and 2 women with a mean age of 62 years (range, 40 to 77 years). Histological diagnosis included adamantinoma, dedifferentiated synovial sarcoma attached to the tibia, multiple myeloma, and metastatic renal cell carcinoma, myeloid carcinoma of the thyroid gland and metastatic adenocarcinoma of the stomach. Results: The mean follow-up was 16 months (range, 11 to 24 months). At the latest examination, 5 patients were free of local or distant disease; one patient had deceased with distant disease, without evidence of local recurrence. Revision surgery was necessary in one patient because of mechanical loosening of the proximal fixation of the prosthesis. The mean increase of the Enneking rating from the pre to the postoperative status was 87.82%. Conclusion: The intramedullary diaphyseal segmental defect fixation system used herein is associated with a satisfactory functional and oncological outcome after wide resection of diaphyseal bone tumors.

Abstract No.: OP1106

Abstract Title: THE DIAGNOSTIC UTILITY OF ULTRASONOGRAPHY IN THE DIAGNOSIS OF CARPAL TUNNEL SYNDROME IN PARAPLEGIC PATIENTS

Authors(s): Tsilikas K, Papadakis N, Groumas N, Kappas K, Fezoulidis I, Vlychou M.

Presenting author: Tsilikas Konstantinos

Institution: University Hospital of Larissa - Greece

ABSTRACT: The diagnostic utility of ultrasonography in the diagnosis of carpal tunnel syndrome in paraplegic patients. Tsilikas K*, Papadaki PJ**, Groumas N***, Kappas K*, Fezoulidis IV*, Vlychou M*. *Department of Radiology, University Hospital of Larissa, GR **Department of Radiology, EIAA Hospital, GR ***Department of PMR, EIAA Hospital, GR Introduction: The aim of this study was to assess the diagnostic performance of ultrasonography (US) of the median nerve in detecting the carpal tunnel syndrome (CTS) in paraplegic patients. Methods and Subjects: A total of 66 individuals with chronic paraplegia participated in this study. 26 subjects (31 wrists) reported either bilateral or unilateral symptoms of CTS while 40 paraplegic patients were asymptomatic volunteers. All US examinations were performed by the same radiologist. All patients underwent nerve conduction studies (NCS) after the ultrasound exam, which was considered as the standard of reference for the diagnosis of CTS. Results: Abnormal US images were obtained in 28/31 (90.3%) wrists while NCS confirmed the diagnosis of CTS in 14/31 (45,1%) cases. In 9/31 (29%) wrists, NCS was within the upper physiological limits and in 5 cases was normal. In one asymptomatic patient the US exam was abnormal while NCS was within the upper normal limits. Discussion: The entrapment of the median nerve in the carpal tunnel can be determined by US measurements. Conclusions: US is a non-invasive imaging technique comparable to NCS in diagnosis of CTS in paraplegic patients. References Pinilla I et al. The usefulness of ultrasonography in the diagnosis of carpal tunnel syndrome. J Hand Surg 2008; 33(4):435-9. Boninger ML et al: Wheelchair pushrim kinetics: body weight and median nerve function. Arch Phys Med Rehabil 1999; 80 (8):910-5.

Abstract No.: OP1107

Abstract Title: INCOMPLETE SPINAL CORD INJURY AND USE OF BOTULINUM TOXIN IN REDUCING SPASTICITY AND IMPROVING GAIT

Authors(s): Martinez MC, Montesinos LL, Castillo D, Rodriguez S, Ramirez L, Bori I

Presenting author: Castillo D

Institution: Hospital Universitario Vall D'Hebron, Barcelona - Spain

ABSTRACT: 78% of patients affected with spinal cord injury (SCI) 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(BT) in the treatment of spasticity secondary to incomplete SCI 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 spasticity. **OBJECTIVE:** To evaluate the efficacy of the treatment with BT in one patient affected with spasticity in lower limb secondary to incomplete SCI and the improvement in gait function. A forty eight year old patient who suffered a herniated disc at C6-C7 surgically treated with discectomy. After surgery, he presented as complication a SCI, level C5 sensitive, C7 motor Brown Sequard Syndrome (ASIA D). After 9 months of the injury, the patient was transferred to our unit for the evaluation and treatment of spastic left lower limb. The patient had spasticity with diminishing strength in the involved limb. His unstable and supervised crutch-assisted gait was being performed using orthopaedic shoes because of his equinovarus foot with claw toes. BT type A was infiltrated periodically in medial and lateral gastrocnemius, soleus, tibialis posterior and flexor digitorum longus every 5-6 months. The patient can perform independent gait with a Jousto peroneal orthosis using a cane and regular shoes. **CONCLUSIONS:** Selective infiltration of spastic muscles after an incomplete SCI reduces spasticity of the involved muscles without diminishing the global strength and improving gait.

Abstract No.: OP1109

Abstract Title: FUNCTIONAL RECOVERY OF THE PATIENTS ELDER THAN 80 WITH HIP FRACTURE

Authors(s): Ilic D, Vukomanovic A, Djurovic A.

Presenting author: Ilic D

Institution: Klinik for Physical and Rehabilitation medicine. Military Medical Academy - Serbia

ABSTRACT: Aim: The aim of this study was to assess the functional recovery of the patients elder than 80 after surgical treatment of hip fracture, and to determinate the factors that affected the recovery. Methods: Prospective study of 75 patients elder than 80, with fractures in the proximal part of femur treated with appropriate procedures (arthroplasty and osteosynthesis). Monitoring parameters: survival, functional status on discharge (ability of standing and walking, walking distance). Data analysis: Fisher's exact test. Results: Early rehabilitation started at the first postoperative day and lasted for 5 ± 1.5 days; 5(3-11). During hospitalisation in the orthopaedic department, four patients died (5.33%). 50 patients (66.67%) were able to walk, precisely 22 patients (29.33%) used the walking frame, and 28 patients (37.33%) used crutches. These patients were able to walk the shorter distances in their room (27 patients or 54%) or longer distances out of room (23 patients or 46%). Others (21 patients, or 28%) were only able to sit in their bed. The type of surgery affected the functional recovery of the patient, whether or not to begin to walk, but did not affect the walking distance. Other monitoring parameters, sex, age, associated diseases, hematocrit, vision, did not influence the functional recovery. Discussion: The type of surgery has affected the functional recovery of the patients, because the patients with arthroplasty walk have full weight bearing, while the patients with osteosynthesis walk without the weight bearing. Conclusion: Previous studies reported the functional recovery of the patients elder than 80 was less successful compared with younger population, but our results show that 66.67% patients were able to walk in the first five therapeutic days after the hip fracture operation. References: 1. R. Dorotka; H. Schoechnner; W. Buchinger. The Influence of Immediate Surgical Treatment of Proximal Femoral Fractures on Mortality and Quality of Life; Journal of Bone and Joint Surgery; Nov 2003; 85, 8; Pro Quest Medical Library p. 1107. 2. D. Hay, M.J. Parker. Hip Fracture in the Immobile Patient; Journal of Bone and Joint Surgery; Sep 2003; 85, 7; Pro Quest Medical Library. 3. Sexon, Stephen B. Lehner, James. T. Factors Affecting Hip Fracture Mortality. Journal of Orthopaedic Trauma. 1987; 1(4):298-305.

Abstract No.: OP1110

Abstract Title: DEPARTMENT OF ACUTE GERIATRIC AND REMOBILISATION UNDER THE DIRECTION OF A SPECIALIST OF PHYSICAL MEDICINE AND REHABILITATION

Authors(s): C. Angleitner, P.Heis, P. Golmaer, s. Traussnigg, I. Reiter

Presenting author: Christian Angleitner

Institution: Institute of Physical Medicine and Rehabilitation; Department af Acute Geriatric and Remobilisation, Ried - Austria

ABSTRACT: In Austria the first Department for Acute Geriatric and Remobilisation under the guidance of a specialist in physical medicine and rehabilitation was launched in May 2006. Currently the department is made up of 20 beds. The care for hospitalized patients takes place around the clock by a team consisting of six specialists who show them responsible for the on-call duties. The average workload at the department in 2009 was more than 95%, the average age of patients was 76.34 years and the average durance of stay 18.2 days. The patients came 26% from orthopaedic, 24% from traumatic, 24% from neurological, 9% from internistic, 2% from surgical and 3% from other medical departments. In our department twice a week an interdisciplinary meeting takes place with doctors, physiotherapists, occupational therapists, speech therapists, neuropsychologists, clinical psychologists, massage therapists, nurses and nutritionists. Our department-benchmark is the Functional Independence Measure (FIM). If necessary other geriatric assessments are carried out such as the Timed "Up and Go" test, the modified Moberg picks up test, the Mini-Mental State Examination, and others as recommended by the Austrian Society for Geriatrics. By default every patient is tested with the Mini Nutritional Assessment. The average FIM development was 16.3 points, slightly more than one point for each day of therapy. 69% of our patients could leave us for home, 16% to convalescent homes, 8% into homes for the elderly and 4% were discharged to nursing homes. 2% had to be transferred to other departments of the hospital.

Abstract No.: OP1114

Abstract Title: LOWER LIMB DEFORMITIES TREATED WITH HEXAPOD EXTERNAL FIXATOR (TAYLOR SPATIAL FRAME) AND EARLY MOBILISATION

Authors(s): H. Tibidakis, V.I.Sakellariou, A. Farmakidis, G. Karaliotas, D. Kotzia, M. Kaligerou, A. Kanellopoulos

Presenting author: H. Tsibidakis

Institution: 1st Orthopaedic Department, University of Athens, ATTIKON University General Hospital, Greece

ABSTRACT: Aim: To study the clinical outcome of TSF system combined with early mobilization in treating lower limb deformities in children Material and Methods: From January 2004, in 61 children (37 male and 24 female), 67 extremities, with a mean age 8.9 years, a TSF external fixator was applied for the treatment of trauma or bone deformities. 21 children were operated for angular deformity, 19 for bone lengthening, 10 for rotational deformity, 6 for combined angular deformity and lengthening and 11 for pseudoarthrosis. Intra and postoperative difficulties were classified using the Palay method in problems, obstacles and complications. An intensive therapeutic protocol was adopted including early mobilization, partial weight bearing and muscle strengthening exercises immediately after surgery. Results: There was a 5.9% (4/67) TSF system failure rate including 2 cases of axial mal-alignment, 1 case of pin fracture and 1 case of knee subluxation. There were 3 cases with delayed bone healing that needed infusion DBM, 1 peroneal nerve palsy due to hematoma formation treated with decompression of the region, 1 early bone fusion that needed re-operation and 2 cases of percutaneous achilles lengthening. Complications presented in 5.9% of (4/67) the cases including 1 fracture, 1 pseudoarthrosis, and 1 peroneal nerve palsy. Mean postoperative range of motion was good in 66/67 cases (knee flexion >120 degrees, extension 0-5 degrees) with only one cases presenting with limitation of arc of motion. Conclusions: Combination of TSF with early mobilization and intensive physiotherapeutic program was associated with an excellent postoperative clinical outcome in children with lower limb deformities.

Abstract No.: OP1120

Abstract Title: 12 YEARS EFFECTS OF PHYSIOTHERAPY-BASED REHABILITATION FOLLOWING DISC HERNIATION OPERATION: RESULTS OF A RANDOMIZED CLINICAL TRIAL

Authors(s): Ebenbichler Gerold, Inschlag Silke, Amtmann Gabriele, Pflueger Verena, Stemberger Regina, Posch Martin, Jovanovic Mifsud, Novak Klaus, Resch Karl Ludwig

Presenting author: Gerold Ebenbichler

Institution: Physical Medicine & Rehabilitation, Vienna Medical University & Vienna General Hospital, Vienna - Austria

ABSTRACT: Introduction and Aim: Erdogmus et al (Spine 2007) provide 1 of only a few studies on the rehabilitative effects of a comprehensive physiotherapy intervention. The present study is a 12-year follow-up and aims at evaluating the long term effects of physiotherapy-based rehabilitation starting 1 week after lumbar disc surgery. Methods and Subjects: This study was a three-group, randomized, single blinded, controlled trial which took place at an outpatient department of PM&R. Of 120 patients following first-time, uncomplicated lumbar disc surgery who participated in the original study, 78 (65%) completed a 12 years follow-up examination. In the original study, patients were randomly assigned to "comprehensive physiotherapy", "sham intervention" (neck massage), or no therapy. The main Outcome Measure was the German version of the "Low Back Pain Rating Score (LBPRS; Nuhr 2004). Secondary parameters were patients' overall satisfaction with treatment outcome and socioeconomic measures. Results: At 12 years after operation, the group undergoing "comprehensive physiotherapy" had significantly better functional outcomes as rated on the LBPRS than the untreated group (mean difference: - 12.9 [95%CI: - 2.9; -22.9]). In the subsequent analysis, the LBPRS outcome did not differ between physiotherapy and "sham" therapy (md:-2.7 [95%CI:-13.2; 7.8]. There was, however, a clinically relevant, almost significant difference between the sham therapy and no therapy (mean difference: - 10.2 [95%CI: 0.36; - 20.75]). Intention to treat analysis and per protocol analysis revealed similar results. No statistically significant between-group differences were found for the secondary outcome parameters. Discussion and Conclusion: A "comprehensive physiotherapy" intervention following lumbar disc surgery may produce long term health benefits over no intervention, but may not be superior to "sham". One might speculate that "comprehensive physiotherapy" acted both psychologically and physiologically in these patients. References Erdogmus CB, Resch KL, Sabitzer R, Muller H, Nuhr M, Schoggl A, Posch M, Osterode W, Ungersbock K, Ebenbichler GR. Physiotherapy-based rehabilitation following disc herniation operation: results of a randomized clinical trial. Spine (Phila Pa 1976). 2007 Sep 1;32(19):2041-9. Nuhr MJ, Crevenna R, Quittan M, Auterith A, Wiesinger GF, Brockow T, Nuhr P, Fialka-Moser V, Haig A, Ebenbichler G. Cross-cultural adaption of the Manniche questionnaire for German-speaking low back pain patients. J Rehabil Med. 2004 Nov;36(6):267-72.

Abstract No.: OP1121

Abstract Title: EFFECTIVENESS OF MEDICAL TRAINING THERAPY IN PATIENTS WITH IDIOPATHIC SUB ACUTE AND CHRONIC LOW BACK PAIN: RESULTS OF A SYSTEMATIC REVIEW

Authors(s): Manuel Scharrer, Gerold Ebenbichler, Kurt Ammer, Martin Posch

Presenting author: Gerold Ebenbichler

Institution: Physical Medicine & Rehabilitation, Vienna Medical University & Vienna General Hospital, Vienna - Austria

ABSTRACT: Background & Aim: Medical training therapy (MTT) to improve muscular strength and endurance is a special form of therapeutic exercise usually performed on machines and follows evidence based guidelines. In Europe, MTT is increasingly recommended to patients suffering from sub-acute and chronic back pain. The evidence for the effectiveness of MTT in these patients, however, seems unclear. Aim of this systematic review was to determine whether MTT is effective in reducing pain and improving function in patients with sub-acute or chronic low back pain. Methods: Data sources: MEDLINE, EMBASE, CINAHL, Pedro using a RCT filter (1964 till October 2009), the Cochrane Central Register of Controlled Trials (The Cochrane Library 2009, Issue 4). References cited in the identified articles were screened. Review methods: We included randomized controlled trials that examined exercise or MTT in adult patients with low back pain compared to placebo, no intervention or other interventions. Study outcomes had to include at least one of the following: pain intensity; functional status, absenteeism. Two reviewers independently selected studies and extracted data on study characteristics, quality, and outcomes at short, intermediate, and long-term follow-up which were identical to those used by Hayden (Hayden et al., 2005). Furthermore, visual analogue scale ratings (0% - 100%) with exact qualifiers at 0, 25, 50, 75 and 100% of the beam estimated the qualitative aspects of the training intervention. Disagreements were resolved by consensus involving a third independent expert reviewer. Results: A total of 79 randomized controlled trials met inclusion criteria with 7 treating sub-acute, 67 chronic, and 5 both sub-acute and chronic low back pain patients, respectively. A total of 2 studies were identified that examined the effectiveness of MTT according to the principles of MTT. Both trials, one was of high quality, found MTT to decrease pain and improve function significantly better than did no therapy. A total of 53 LQ and 26 HQ quality trials examined the effects medical exercise therapy that met with some of the criteria for MTT and found evidence that this intervention was better than no therapy or other types of therapy to improve pain and function in the short-term and intermediate term. Conclusion: There is a lack of evidence that would support the effectiveness of MTT in the treatment of sub-acute or chronic low back pain. Future high quality RCT will have to clarify whether medical training therapy on machines is at least as effective as other forms of therapeutic exercise and whether or not the expenses for medical training therapy within the rehabilitation programs for patients with sub-acute and chronic low back pain is well invested. Limitations: This review largely reflects limitations of the literature, including low quality studies with heterogeneous outcome measures, inconsistent and poor reporting, and possibility of publication bias.

Abstract No.: OP1122

Abstract Title: WALKING ABILITY AND HIP FRACTURES IN ELDERLY

Authors(s): F. Gimigliano, M.D; Amico, A. Capaldo, M. donnarumma, G. Iolascon

Presenting author: F. Gimigliano

Institution: Second University of Naples, Naples - Italy

ABSTRACT: INTRODUCTION: The aim of our study was to assess the correlation among walking autonomy, number of comorbidities and type of hip fractures (medial or lateral) in elderly osteoporotic patients. METHODS AND SUBJECTS: During a 6 months period, at the Rehabilitation Institute "Villa Margherita" in Benevento, 88 female patients, who had sustained a hip fracture, were asked about their walking ability before the fracture. It was used the FAC (Functional Ambulation Category). Demographic and comorbidities data were also collected. RESULTS: The mean age of the 88 patients recruited was 80.18 (min. 55; max 94). The 45% of them were overweight (BMI > 25.00). The 68% (60 patients) had a lateral hip fracture. The 55.7% had had a vertebral fracture before the hip fracture. Only the 23.86% (21 patients) were treated for osteoporosis before the hip fracture. The 83% of patients were, before the fracture, able to walk independently (FAC 3-5) and the 49% was completely independent (FAC 5). Most of the patients (97.7%) had at least one comorbidity. There was an increasing risk for a medial hip fractures among patients who had a FAC 0-2 before the fracture (OR = 2.16). The presence of at least 3 different comorbidities was associated to major walking difficulties (FAC 0-2) (OR = 3.43). DISCUSSION AND CONCLUSION: The risk of falling is obviously increased in patients who require physical assistance during walking and in particular the risk of a medial fracture (intracapsular) seems to be consistently higher. The presence of comorbidities is strongly related to walking ability. REFERENCES 1. Pfeiffer E. A short portable mental status questionnaire for the assessment of organic brain deficit in elderly patients. J Am Geriatr Soc. 1975 Oct;23(10):433-41.

Abstract No.: OP1124

Abstract Title: TREATMENT MODALITIES FOR POST MASTECTOMY LYMPHEDEMA

Authors(s): Marta Torres, ns Lucas, Filipa Januario, Maria Joaquim Tao, Carla Amaral, Luis Andre Rodrigues

Presenting author: Marta Torres

Institution: University Hospital of Coimbra, Coimbra - Portugal

ABSTRACT: Introduction: Arm lymphedema (ALE) is one of the most common and serious complications following axillary node dissection. Its reported incidence is approximately 25% and its prevalence is reported to increase in the years after surgery. ALE can lead to significant physical, psychological, economic and social disruption. Different strategies have been tried to approach and treat it. Objectives: to review the available modalities of treatment and their efficiency in reducing post mastectomy ALE and its symptoms. Material/Methods: Systematic search of the databases: PubMed/MEDLINE, Science Direct and Cochrane Library. Results: 32 articles relevant to the subject were consulted. Discussion/Conclusion: ALE is difficult to reverse so effort should be made in trying to prevent it. Combined Physical Therapy (skin care, manual lymphatic drainage, exercises, multi-layer bandaging and compression done by a low-stretch sleeve) is effective. However, the value of its different components remains uncertain. Manual lymphatic drainage done by a certified physical therapist is more effective than simple lymphatic drainage. Evidence is emerging that unrestricted physical activity and moderate resistance exercises won't alter the risk of developing ALE though it remains a controversial subject. Furthermore it has been showed that a controlled upper body strengthening program won't worsen ALE and might lead to fewer and less severe problems. Low intensity laser therapy and hyperbaric O2 have been tried and show some moderately positive results that would warrant larger trials to be further investigated. Vitamin E, benzo-pyrones, aromatherapy were tried without success'

Abstract No.: OP1125

Abstract Title: BENEFITS OF TAI CHI CHUAN IN THE ELDERLY

Authors(s): Ines Lucas, Marta Torres, Filipa Januario, Sofia Lopes, Carla Amaral,
Luis Andre Rodrigues

Presenting author: Ines Lucas

Institution: Peto Andras Institution for Conductive Education of the Motor Disabled & Conductors College,
Budapest - Hungary

ABSTRACT: Fifteen cerebral paretic children treated by conductive education were examined, and their parents were interrogated after stem-cell therapy in International Peto Institute. Our hypothesis was that the parents were partial and more subjective. Their subjective opinions were compared with clinical findings. During the interviews the following questions were put: Who did the patients ask for information about stem-cell therapy? To their knowledge what kind of cells did the patients get? How were the stem-cells got into the patient's body? Did the patients get rehabilitation treatment during the stem-cell therapy? Did any complication appear in connection with the stem-cell therapy? Did the patients get information about what kind of changes and improvements should they observe? How did the patients judge the effect of stem-cell therapy? How did the conductor judge the effect of stem-cell therapy? The patients' neurological status and results of their functional appraising tests, before and after the stem-cell-therapy, were compared after the interviews. Experiences: Parents judged the effect (or inefficiency) of the treatment as objective as conductors did, or as it turned out from neurological examinations and functional tests. However they didn't discuss their experiences with other parents or with specialist treating the children. Parents got contradictory opinions during the consultancy because the knowledge of specialist treating and examining the cerebral paretic children was incomplete about stem-cell therapy. Suggestion: The patients deliberating stem-cell therapy and specialists - who treat cerebral paretic children - should get acquainted with the handout of The International Society for Stem Cell Research about the possibilities with stem-cell therapy.

Abstract No.: OP1126

Abstract Title: CHARACTERISTICS AND PRINCIPAL MEDICAL VARIABLES OF POLIOMYELITIS AND POST-POLIO PATIENTS IN JERUSALEM

Authors(s): Isabella Schwartz, Irina Gartsman, Yechiel Friedlander, Orly Manor, Eliana Ein Mor, Zeev Meiner

Presenting author: Isabella Schwartz

Institution: Rehabilitation Department Hadassah Medical Centre, Jerusalem - Israel

ABSTRACT: Objective: To compare the general medical status as well as social and economic status of polio survivors with the general population in Jerusalem and to determine the medical, demographic, socioeconomic and psychological parameters associated with the severity of post-polio syndrome (PPS) in this population. Background: According to the Israeli ministry of health, 2500 polio survivors are currently living in Israel, 500 of them in the Jerusalem\’s area. These patients are suffering from many motor and functional disabilities. Recently, high percentage of polio survivors goes on to develop PPS characterized with new muscle weakness, new muscle atrophy and new functional disabilities. The extent and the influence of PPS on the quality of life of polio survivors as well as the parameters associated with the severity of the syndrome in Israel are unknown. Methods: This is an ongoing prospective cohort study of polio patients attending the post-polio clinic in the rehabilitation department in Hadassah Medical centre in Jerusalem in the years 2005-2010. Enrolled patients had been interviewed by a physiatrist specialized in the post-polio syndrome. Demographic, medical, social, and functional data were recorded using a particular questioner which was adjusted to the polio population. These data will be compared to the same data of age and gender matched healthy controls from the Central bureau of statistic of Israel and the SHARE database. The severity of PPS will be determined according to the index of PPS (IPPS) score. Results: 269 polio patients were enrolled. The mean age was 59.3 years (SD=10.8, range 33-93). There were 126 (46.8%) men and 143 (53.2%) women. 204 (76.4%) were residence of Jerusalem, 225 (83.6%) were Jews and 42 (15.6%) were Muslims. 190 (72.5%) were married, 85 (31.6%) were employed, 20 (7.5%) were retired and 101 (37.5%) were unemployed. The correlation between medical, demographic, socioeconomic and psychological parameters and the severity of PPS will be presented. Conclusions: Determining the extent of disabilities in polio survivors is important in order to preserve the functional abilities of this population and to develop rehabilitation programs in order to prevent further deterioration due to PPS.

Abstract No.: OP1129

Abstract Title: RELATIONSHIP OF L5-S1 ROOT DYSFUNCTION AND PIRIFORMIS MUSCLE TRIGGER POINTS FORMATION

Authors(s): Vorniotakis, hatzoglou, Gkoutza, Mpitzolas, Filiopoulos, Tsirliagkos Efst., Loizidis Th.

Presenting author: Th. Loizidis

Institution: Euromedica Arogi Rehabilitation Centre, Pylaia - Greece

ABSTRACT: Introduction: The piriformis muscle syndrome has been described in the literature since 1934 and accounts for 6-8% of patients with buttock pain, which may variably be associated with sciatica. The syndrome may appear as sciatica (pseudosciatica) and it may be similar to that of lumbar radiculopathy, primary sacral dysfunction or innominate dysfunction. On the other hand radiculopathy may be the reason for trigger point creation or activation through the dysfunctional nerve terminal. It is mentioned in bibliography that L5 herniation can lead to piriformis atrophy. We would like to examine the percentage of patients who receive treatment for piriformis muscle trigger points, and at the same time, have also symptoms of L5 - S1 radiculopathy. Methods and Subjects: A retrospective study was conducted. For a period of two years (1/10/2007 – 31/9/2009) all consecutive patients complaining for low back pain and received treatment for piriformis muscle were included in the study. A total of 102 patients had positive the piriformis test and received treatment at piriformis muscle. Patients with spine surgery in the segment of L5-S1 with improvement of the neurological symptoms after surgery, but continued to experience pain in the buttock or the thigh were also included in the study. Patients who had pain problems for quite a long time and alterations in the gait or posture were also noted. All patients a) proved positive to the piriformis test b) had positive straight leg raise test at some point in their history. The piriformis test that was conducted was the forced adduction of the affected flexed hip, with the patient lying on the painful side, to produce buttock pain. All patients received treatment (acupuncture and/or injection-ultrasound guided) to piriformis muscle. Results: A total of 102 patients received 135 treatments for piriformis muscle tightness and presence of trigger points. Twenty eight were males with a mean age \pm se of 52,17 \pm 2,97 years and 74 were females with mean age \pm se of 60,86 \pm 1,91 years (*p=0,018). The mean number of days from the presentation of symptoms until the visit to the physician's office was 299,39 \pm 99,8 days for males and 377,59 \pm 85,07 for females (Non statistical important NS). All patients recognized their pain during treatment or had a twitch response and reported reduction of pain at of at least 50% immediately after treatment. Patients who reported less than 50% reduction of pain were excluded from the study. All patients received an exercise program after the treatment including extension of the lumbar spine press ups (if it was not contraindicated) and stretching of piriformis muscle. Of all patients, 78 had a positive MRI or CT scan of lumbar spine confirming the presence of herniated disc on segment of L5, S1 or had surgery at that segment. Discussion: There are times in clinical settings that piriformis syndrome can 'masquerade' intervertebral discitis, lumbar radiculopathy, primary sacral dysfunction, sacroiliitis, sciatica and trochanteric bursitis.

Abstract No.: OP1129 (continuation)

Abstract Title: RELATIONSHIP OF L5-S1 ROOT DYSFUNCTION AND PIRIFORMIS MUSCLE TRIGGER POINTS FORMATION

The clinical symptom complex in piriformis syndrome consists of buttock (and possibly leg pain) and dysesthesias aggravated by sitting or lower limb exertion. The functional biomechanical deficits include a tight piriformis and external rotators, hip abductor weakness, sacroiliac joint hypomobility and lower lumbar spine dysfunction. The piriformis muscle referred pain from a trigger point may radiate to the sacroiliac region, laterally across the buttock and over the hip region posterior, and to the proximal 2/3 of the posterior thigh. On the other hand compensation of the nerve function (radiculitis, radiculopathy) of L5 – S1 root can produce the same clinical features and also can lead to a pathologic release of Ach in the neuromuscular junction leading to the formation of taught bands and trigger points. Piriformis muscle is innervated directly by L5 - S1 and S2 roots. TrP's formation on this muscle may be caused by nerve dysfunction. In our sample 78/102 (76,7%) of patients had a confirmed history of L5-S1 radiculitis or radiculopathy. Our results suggest that there may be a connection between trigger point formation and root disorder. Conclusion The presence of dysfunction of L5-S1 root can activate trigger points on piriformis muscle and sustain the pain symptoms. Simple treatment methods dry needling and injections accompanied with stretching exercises can relief symptoms.

Abstract No.: OP1136

Abstract Title: A MULTIDISCIPLINARY MEDICAL CHART FOR REHABILITATIVE EVALUATION OF DISABILITY IN MARFAN SDR.

Authors(s): C.Gallo, V. Bozzo, B. Contini, C.Foti

Presenting author: Carla Gallo

Institution: Tor Vergata University, Rome - Italy

ABSTRACT: Key words Marfan, Rehabilitation, multidisciplinary, ICF Introduction Marfan Syndrome is a genetic disorder involving aortic dilation, musculoskeletal and ocular problems. The co-morbidities must be studied in multidisciplinary centres utilizing a single common medical chart shared between Specialists with same languages and methods Materials and Methods This article describes a medical chart with socio-economic data, measuring musculoskeletal pain, Scoliosis, arthritis, osteoporosis, cardiovascular, ocular and respiratory disability, using the scales: SF36QoL, Tinetti scale, Borg scale, Test Vittorio, 6 Minutes Walking Test, ROM, MRC, Kendall's and Cobb's Scoliosis evaluation, VAS pain scale, MOC, Ritchie index, ICF, and at least 5 links to specific evaluations: ocular, cardiologic, orthopaedic, radiologic e neurologic Results the document is on line for all Specialist by password for legal updating and archiving, 6 pages long in its rehabilitative part, all ICF items can be consulted in 34 linked pages Discussion Data are selected based on their capacity of analysis, objectivity and repeatability Data entry and evaluation times are estimated at no more than 20 min or less improving time available for therapeutic actions or further evaluations Conclusion Using technology improves: coordination in multidisciplinary centres, specificity and trustworthiness of clinical evaluation References: Cieza A, et Al. Identification of candidate categories of the ICF for a Generic ICF Core Set based on regression modelling. BMC Med Res Methodol. 2006 Jul 27; 6:36

Abstract No.: OP1137

Abstract Title: THE EFFECTIVENESS OF LOCOMOTOR THERAPY USING THE LOKOMAT SYSTEM IN PATIENTS WITH MULTIPLE SCLEROSIS

Authors(s): Isabella Schwartz, Anna Sajin, Elior More, Iris Fisher, Martin Neeb, Adina Forest, Vicktoria Elkarif, Yishai Geleg , Eliana Ein Mor, Adi Vaknin, Dimitrios Karusis, Zeev Meiner

Presenting author: Isabella Schwartz

Institution: Departments of Physical Medicine and Rehabilitation, Hadassah-Hebrew University Hospital, Jerusalem - Israel

ABSTRACT: Objective: To evaluate the efficacy of robot-assisted gait training (RAGT) using the the Lokomat system as compared to regular physiotherapy in MS patients with severe walking disabilities [Expanded Disability Status Scale (EDSS) 5.5-7]. Background: MS is a chronic neurological disease that is characterized by patchy inflammation, gliosis and demyelination within the central nervous system. It is the third most common cause of neurological disability in adults between 18-50 years of age. Preservation of locomotor activity in MS patients is of utmost importance. Methods: We conducted a randomized controlled clinical trial comparing RAGT with regular physiotherapy in a group of stable MS patients during an outpatient rehabilitation program. Inclusion criteria were chronic or secondary progressive MS with EDSS between 5.5 to 7 and stable treatments 3 months before entering the study. The study and control groups were treated with 12 sessions of 30 minutes each during 3-4 weeks by RAGT or conventional walking training (CWT) respectively. The primary outcome measures were FAC and 6 minutes walking distance and the secondary outcomes were TUG test, 10 meter walking test, Berg balance test, EDSS score, FIM score , and SF36. All tests were performed at baseline, at the end of the treatment period and at 3 and 6 months thereafter by a blinded rater. Results: Sixteen patients were randomly allocated to RAGT and 17 to CWT. There were 3 drop-outs (2 related directly to treatment) in the RAGT group and 1 in the CWT group. Both groups were comparable at baseline, mean age of treatment group was 46.8 ± 12 as compared to 50.5 ± 11 in the control group ($P=0.36$). Mean EDSS was 6.2 ± 0.5 as compared to 6.0 ± 0.6 in the control group ($p=0.28$). The initial FIM score was 110 ± 7 in the treatment group as compared to 110 ± 10 in the control group ($p=0.99$). The FAC score as well as the FIM, EDSS and BBT scores improved significantly in both groups without significantly difference between the groups. Other secondary outcomes did not change during the study. There were no side effects of the Lokomat treatment Conclusions: Robot-assisted gait training in MS patients is feasible and has similar beneficial effect as conventional walking training. RAGT may be an effective as an additional therapeutic option in MS patients with severe walking disabilities.

Abstract No.: OP1138

Abstract Title: FROM ACUTE HOSPITAL TO CBR THROUGH REHABILITATION CENTRE

Authors(s): Lutsky Lena, Treger Iuly

Presenting author: Treger Iuly

Institution: Loewenstein Hospital Rehabilitation Center, Rahanana - Israel

ABSTRACT: Introduction: There is increasing pressure on rehabilitation services around the world to provide more resources and facilities in the community. Clalit health services had developed the local model of rehabilitation in Tel-Aviv Jaffa district. The rehabilitation specialist of the district (RSTAJ) decides about the referral of acute patient from general hospital to rehabilitation centre, supervises patient's functional improvement in rehabilitation ward and manages the continuation of treatment in appropriate community based rehabilitation (CBR) setting. The aim of the study was to investigate the feasibility of this rehabilitation model. Methods & Subjects: There are 255.116 citizens in Tel-Aviv Jaffa district of Clalit health services. Patients with severe functional decline after illness or injury were examined by RSTAJ. For 18 months of the study 127 of them were sent to Lowenstein Hospital Rehabilitation Centre (LHRC). Before the discharge of patient from the ward the appropriate form of CBR was planned by the rehabilitation team and RSTAJ. The length of stay (LOS) in the LHRC and the place of after-discharge destination were investigated in all the patients. Results: The LOS in LHRC was 57.7 ± 40 days. 11 (8.7%) patients died after the discharge. 14 (11.0%) patients continued their intensive rehabilitation treatment in day rehabilitation setting in LHRC or in day centre of the district. Only 8 (6.3%) patients were discharged to nursing facilities. 69 (54.3%) continued rehabilitation treatment in CBR by multidisciplinary team of the district. 25 (19.7%) came back home with family practitioner supervision with only one specialist from rehabilitation team of the district. Discussion & Conclusion: The results of the study show, that the model of rehabilitation specialist from CBR, which professionally supervises the rehabilitation process of severely injured patient from acute hospital back to home through rehabilitation centre can be reasonable.

Abstract No.: OP1142

Abstract Title: CONTRIBUTION OF MEDIATION TO THE POTENTIAL OF LEARNING AND CHANGE OF CLIENTS FOLLOWING STROKE: IMPLICATIONS FOR INTERVENTION

Authors(s): Noomi Katz, Liat Livni, Asnat Bar-Haim Erez, Sarah Averbuch

Presenting author: Sarah Averbuch

Institution: Ono Academic College, Or Yehuda - Israel

ABSTRACT: Introduction: The Loewenstein Occupational Therapy Cognitive Assessment (LOTCA) (1, 2) was originally designed as a primary cognitive evaluation for clients with neurological dysfunctions. It has been standardised and researched extensively for reliability and validity in various populations and cultures. More recently a dynamic version was developed for children DOTCA-Ch (3, 4) based on theoretical postulates of measuring the potential for learning with mediation. This system was recently applied to the adult and elderly populations and developed into dynamic versions (DLOTCA & DLOTCA-G). The aims of the current study are to 1) present standards of performance on the batteries for clients following stroke and for healthy adults and elderly; and 2) to provide data on the contribution of the dynamic cueing system to the learning potential of the above populations. Methods and subjects Two populations of participants following stroke and healthy were tested. 83 clients and 45 healthy participants were tested on the DLOTCA, ages 40-70 years. Furthermore, 52 clients and 61 healthy elderly were tested on the DLOTCA-G, ages 71-85 years. Clients were tested in 5 rehabilitation facilities. Inter rater reliability among the participating occupational therapists was high. Results Internal consistency alpha coefficient level in each area was found to be high ranging from $r=.60$ to $.73$ except for the visual perception domain. Significant differences were found between pre and post mediation on almost all subtests in both populations with moderate to high effect sizes ranging from $d=.35$ to 2.11 . Frequencies of mediation level show high percentages of level 3 'specific feedback'. However, level of mediation increased with increased level of the difficulties in the test domains of visuomotor construction and think operations. Healthy individuals with low years of education and elderly benefitted from the mediation process as well. Results from all groups of the study will be outlined in the presentation. Discussion and Conclusions The findings show the benefits of the dynamic versions beyond the assessment of present status of cognition. The advantage of dynamic assessment is the ability to understand performance not only in the 'here and now' but to evaluate what is the learning potential of the individual if provided with cues, help, or mediation. The data suggests that clients, following stroke, have potential to change and improve their cognitive performance. The information allows for better cognitive functional intervention plans, thus contributing to effectiveness of occupational therapy intervention. References 1.Itzkovich, M., Averbuch, S., Elazar, B. & Katz, N. LOTCA Second Edition, A Manual and a Test Kit. Pequannock NJ: Maddak Inc. 2000. 2.Elazar, B., Itzkovich, M., & Katz, N. LOTCA-G - A geriatric version for assessing elderly. A Manual and a Test Kit. Pequannock NJ: Maddak Inc.1996. 3.Katz, N., Parush, S., & Traub Bar-Ilan, R. DOTCA-Ch - Dynamic Occupational Therapy Cognitive Assessment for children. Pequannock NJ: Maddak Inc. 2005. 4. Katz, N., Goldstand, S., Traub Bar-Ilan, R., & Parush, S. The Dynamic Occupational Therapy Cognitive Assessment for Children (DOTCA-Ch): A new instrument for assessing learning potential. American Journal of Occupational Therapy. 61, 41-52, 2007.

Abstract No.: OP1145

Abstract Title: PREDICTIVE VALIDITY OF TIMED UP AND GO TEST IN NURSING HOME

Authors(s): Miroljub Jakovljević

Presenting author: Miroljub Jakovljević

Institution: University of Ljubljana, Faculty of Health Sciences, Ljubljana - Slovenia

ABSTRACT: Introduction: The timed get up and go (TUG) test is a measurement of mobility. It includes a number of tasks such as standing from a seating position, walking, turning, stopping, and sitting down. The objective was to evaluate predictive validity of the TUG test in the elderly population for cut-off values calculated prospectively and retrospectively. Methods and subjects: Six month prospective follow-up cohort study for falls included 53 (seven male and 46 female) older persons living in nursing home, mean age 79.8 years (SD 7.8). Predictive validity of the TUG at baseline (prospective) and at the end (retrospective) of the study was compared using ROC analysis. Results: During the six-month period, the time needed for performing the TUG test did not change significantly. Twenty four (45.3 %) participants fell on average 2.5 (SD 1.5, range 1-5) times. Prospective cut-off value of the TUG test was 18.2 s; the retrospective cut-off value was 19.7 s. estimated area under ROC did not differ significantly between prospective and retrospective TUG test cut-off values. While the sensitivity decreased from 71% (prospective cut off value) to 67 % (retrospective cut-off value), specificity remained at 75%. Discussion and conclusion: The predictive ability of the TUG test within the six months was similar irrespective of whether the cut-off value was calculated prospectively or retrospectively. Because of relatively low sensitivity and specificity, the TUG test should be used for falls prediction together with other tests and/or questionnaires, at least in the nursing home environment. Keywords: fall risk, functional testing, predictive validity, elderly.

Abstract No.: OP1146

Abstract Title: OUTCOME OF COMATOSE PATIENTS AFTER EARLY REHABILITATION TREATMENT INCLUDING THE MULTIMODAL STIMULATION PROGRAM

Authors(s): M. Lippert-Grüner

Presenting author: M. Lippert-Grüner

Institution: ANR Bonn / University of Cologne, Cologne - Germany

ABSTRACT: A result of improvements in the rescue system and progress in intensive care therapy, an increasing number of patients have survived severe traumatic brain injury in recent years. An early and consistent administration of the correct rehabilitation programme is of crucial importance for the restoration and improvement of cerebral function, as well as social reintegration. Prospective study conducted at the neurosurgical department of a university hospital to assess the one - year - outcome of comatose patients after severe traumatic brain injury. 27 patients after severe traumatic brain injury were included. Patients received multimodal early-onset stimulation and continuous inpatient and outpatient rehabilitation therapy. The stimulation therapy consists of acoustic, tactile, olfactory, gustatory and kinesthetic procedures, administered daily in two units of one hour each following a well determined pattern. Special demands have to be made concerning restriction of frequency and intensity of sensory stimulation in order to avoid straining the reduced possibilities of the injured brain. 12-months outcome was assessed by means of Glasgow outcome scale, Barthel index, Functional independence measure (FIM) and need of care. 7 patients died, 4 remained in a vegetative state, 7 were severely disabled, 6 were moderately disabled, and 3 achieved a good recovery 12 months after injury. Mean Barthel index was 66.7 and mean FIM was 85.2. The majority of patients still were at least intermittently dependent on care. The results of our study show, that despite intensive rehabilitation treatment, severe traumatic brain injury today is still burdened with significant mortality and morbidity in terms of major disability and major dependency on care in the majority of cases. Initial GCS scores and duration of coma allow for outcome prognosis to a certain extent.

Abstract No.: OP1149

Abstract Title: RECREATIONAL PHYSICAL ACTIVITIES AMONG CHILDREN WITH A HISTORY OF SEVERE TRAUMATIC BRAIN INJURY

Authors(s): Katz-Leurer Michal, Rotem Hemda, Keren Ofer, Meyer Shirley

Presenting author: Katz-Leurer Michal

Institution: Tel-Aviv University, Tel-Aviv - Israel

ABSTRACT: Objective: To describe leisure time physical activity (LTPA) and physical capabilities such as balance, muscle strength and walking performance, and to evaluate the associations between physical capabilities and LTPA among children post traumatic brain injury (TBI) as compared to a peer group of typically developed (TD) controls. Participants: Convenience sample of 15 children 1.5-7 years post severe TBI and 15 age and sex matched controls. Main Outcome Measures: LTPA by the Godin and Shephard (G&S) questionnaire. Balance tests – the Timed Up and Go test (TUG) and functional reach test (FRT). Maximal isometric strength was assessed by using a hand held dynamometer; walking dynamics were recorded by an electronic mat and the 6 minute walk test and energy expenditure index (EEI). Perceived exertion was rated by the OMNI scale. Results: Children post severe TBI participate significantly less in LTPA as compared to TD controls ($p<0.01$). Walking performance was comparable between groups except for step length which was significantly shorter among children post TBI. Hip extensor strength and balance performance were significantly lower among children post TBI. Balance performance was positively associated with LTPA. Conclusions: We suggest that attention should be directed towards improving balance performance as part of the training repertoire of children and adolescents with post severe TBI. The efficacy of such training program, in particular its contribution to LTPA participation should then be further assessed.

Abstract No.: OP1150

Abstract Title: CLINICAL PREDICTION RULES (CPR) AND CONTRAINDICATIONS OF SPINAL MANIPULATION FOR NON-SPECIFIC LOW BACK PAIN (NSLBP)

Authors(s): Diego Merkier

Presenting author: Diego Merkier

Institution: Sheba Medical Center, Ramat Gan - Israel

ABSTRACT: Introduction: Spinal Manipulative Therapy (SMT) is widely used in NSLBP. The literature was reviewed for CPR for indications and contraindications on SMT in NSLBP.

Methods: Literature Review: Pubmed, Cochrane, WHO publications.

Keywords: manipulation, clinical prediction rules, contraindication

Results:

Validated CPR for Lumbopelvic manipulation for NSLBP:

1. Onset of symptoms (<16 days)
2. Lumbar hypomobility,
3. No symptoms distal to the knee,
4. One or both hips with $> 35^{\circ}$ of internal rotation
5. Fear Avoidance Beliefs Questionnaire, Work subscale - FABQW <19

Patient side laying or supine for SMT (high velocity techniques) had shown similar positive outcomes. Low velocity techniques had shown poorer outcomes.

Contraindications to SMT range from absolute to relative and include articular derangement, bone weakening and destruction, circulatory, haematological and neurological disorders, psychological factors.

Discussion and Conclusion: The use of CPR and contraindications for SMT on NSLBP may improve successful outcomes and reduce injuries.

References:

A Clinical Prediction Rule To Identify Patients with LBP Most Likely To Benefit from Spinal Manipulation: A Validation Study Childs JD, et al Ann Intern Med. 2004 Dec 21;141(12):920-8.

Comparison of the effectiveness of three manual physical therapy techniques in a subgroup of patients with LBP who satisfy a CPR: a randomized clinical trial. Cleland JA, et al. Spine (Phila Pa 1976). 2009 Dec 1;34(25):2720-9.

WHO guidelines on Basic Training and Safety in Chiropractic. Geneva 2005

Abstract No.: OP1154

Abstract Title: THE EFFECT OF VARIABLE GAIT SPEED ON WALKING DYNAMICS AMONG CHILDREN POST SEVERE TRAUMATIC BRAIN INJURY AND TYPICALLY DEVELOPED CONTROL

Authors(s): Katz-Leurer Michal, Rotem Hemda, Keren Ofer, Meyer Shirley

Presenting author: Katz-Leurer Michal

Institution: Alyn Rehabilitation Centre, Jerusalem - Israel

ABSTRACT: The goal of the present study was to look at the effect of changing walking parameters on the dynamic walking characteristics among children post severe traumatic brain injury (TBI) and typically developed (TD) controls. Methods: Thirteen children post severe TBI, mean of 3.5 years post trauma, with a walking velocity >1.1 m/sec, and 15 typically developed (TD) controls participated in this study. Ages were 7-13 years. Gait speed, step time and length and step time and length variability were assessed by an electronic walkway. The children completed three cycles on the walkway for each of the following situations: comfortable walking, walking as fast as possible, as slow as possible and walking on a straight line. Results: Despite a similar walking performance while walking at a "regular" speed, children post severe TBI exhibit a significantly reduced range of walking speeds (73-154 cm/sec), about half, as compared to TD children (54-193 cm/sec) across the study assignments. In addition, while "walking on a straight line" children post TBI walk slower, with increased step variability as compared to their peers. Conclusion: Children post severe traumatic brain injury may achieve independent walking at a comparable rate to typically developed controls; however their impairments will be exacerbated as the demands increase. Since a variety of walking speeds is crucial for independent daily living at any age and for children in particular, and since adequate balance is an inherent element of walking, these issues need repeated assessments and the children should receive appropriate treatment.

Abstract No.: OP1157

Abstract Title: FOCAL DYSTONIA TREATMENT AND DOCUMENTATION WITH VIDEO RECORDING AND ANALYSIS OF THE TEMPORAL – SPATIAL CHARACTERISTICS OF GAIT

Authors(s): Loizidis Th, Vorniotakis P, Nikodelis Th, D. Hatzoglou, Gkoutza St, Filiopoulos G, Psychidis G

Presenting author: Theodoros Loizidis

Institution: Arogi Rehabilitation Center Thessaloniki, Pylaia, Greece

ABSTRACT: Introduction: Dystonia is a syndrome characterized by sustained muscle contractions resulting in abnormal movements or sustained postures. Dystonia is usually idiopathic in nature, in adults dystonia is most often focal or segmental in distribution, with an estimated prevalence of 12-30 per 100000 for focal .These movements and postures are the result of sustained co-contraction of both agonist and antagonist muscles. Most focal dystonias respond to injections of botulinum toxin. In PRM practice is very important to quantify the results of a treatment and to assess the final outcome. This sometimes is rather difficult when it comes to small alterations of the quality and quantity of the movement pattern. The basic spatiotemporal characteristics of gait can easily be identified with a simple video analysis and a few observational gait charts has been published. . All these are based on video analysis with commercial video camera and filling a specific chart. The purpose of this study was the presentation of the treatment of a patient with dystonia to the gait pattern. Gait was documented with a simple video analysis program which can obtain all the basic spatiotemporal parameters (stride and step length, time of single and double support, velocity and cadence). The specific system has been compared in the past with a 3-D kinematic analysis system and the spatiotemporal characteristics of gait were found to be highly correlated. Material and methods: A patient with idiopathic dystonia in the left gastrocnemius soleus flexor digitorum longus and brevis, flexor hallucis longus and brevis first came to the clinic at 10-11-2008. The spatiotemporal characteristics of her gait was recorded and analyzed with on video. An insole AFO was prescribed and a session with botulinum toxin was given at 16-2-2009. Another video gait analysis was taken at 22-7-2009. Final session of botulinum toxin was given on 8-4-2010. Results: The patient had frequent initial contact with her toe. The foot on swing phase was supinated. After the botox injection and the accommodation of the custom made AFO, the patient presented dystonic contractions only when walking bare foot. Walking with the custom made AFO the temporal characteristics of her gait were within the normal scores. She had smaller stance phase on her left foot when walking with her shoes. No sign of dystonia was present while she was walking with the AFO or with the shoes. Unfortunately when walking bare foot she had sometimes initial contact with the toes. Conclusion: Botulinum toxin injection and an AFO orthosis is a reliable treatment for focal dystonia of the lower limb. Qualitative video gait analysis along with quantification of spatiotemporal parameters of gait through dedicated software can produce reliable results for the course of our intervention.

Abstract No.: OP1161

Abstract Title: SURGICAL REPAIR OF ACHILLES TENDON RUPTURE: RESULTS OF THREE SURGICAL TECHNIQUES

Authors(s): Dragan Lonzaric and Aleksandar Krusic

Presenting author: Dragan Lonzaric

Institution: University Clinical Centre, Maribor - Slovenia

ABSTRACT: Introduction and aim: There is no consensus regarding the most appropriate primary surgery technique for acute Achilles tendon rupture, and the most appropriate postoperative rehabilitation. Comparative retrospective analysis of results of 3 surgical techniques in our hospital was done. Subjects and methods: In total 262 patients (1999-2004) were included. Group A (open technique) included 42 (16%) patients, group B (percutaneous suturing - Cretnik and Kosanovic) included 159 (61%) patients and group C (percutaneous fixation with two embracing and crossed loops - Krusic) included 61 (23%) patients. The rehabilitation protocol for patients from group B included individual manufacturing of closed functional orthoses (CFO), which were worn for 3 weeks. The evaluation of functional results was based on outcomes present in patients' medical documentation, which covered the postsurgery period of the first 6 months. Results: Patients in group C showed the best functional results: the greatest ankle ROM, the fastest full bearing, the fastest walking on toes and heels, and the shortest duration of physical limitations ($P < 0.001$, for all). In group A there were no reruptures, in group B there were 2 reruptures and in group C only 1. Conclusion: The best functional recovery was attained in the group C. CFO permits early weight bearing and ROM exercising without increasing complications rates. There were no statistically significant differences between group B and C with regard to major and minor complications. Reference: Cretnik A, Kosanovic M, Smrkolj V. Percutaneous versus open repair of the ruptured Achilles tendon. A comparative study. Am J Sports Med. 2005;33:1369-79.

Abstract No.: OP1163

Abstract Title: HYPERCOAGULABILITY AND BRAIN HEMORRHAGE: IS SINUS VEIN THROMBOSIS THE LINK

Authors(s): Yaron Sacher, Tatiana Vander, Corrine Serfaty and Nachum Soroker

Presenting author: Yaron Sacher

Institution: Lewenstein Hospital, Kokhav Yair – Israel

ABSTRACT: Background: Intracerebral hemorrhages account for approximately 15% of stroke cases and the majority of these are secondary to arterial hypertension. However, less frequent causes should be also considered. Cerebral Sinus Vein Thrombosis (CVST), a possible consequence of hypercoagulable states, may present, atypically, as an intracerebral hemorrhage, demanding high degree of clinical suspicion for detection of its true nature and institution of the proper treatment. The aim was to study the role of these factors in patients that presented with cerebral hemorrhage and were referred to rehabilitation. Methods and subjects: Retrospective multiple case study of 15 patients referred to rehabilitation after suffering atypical cerebral hemorrhage, where CSVT and/or hypercoagulable state were identified. Results: 11 women and 4 men were identified and included in the study.. 10 patients went through the appropriate vascular imaging studies and were diagnosed as having CSVT. In 5 other patients these studies were not performed. Hypercoagulable states, either hereditary or environmental, were identified in all patients but two. Discussion: Hypercoagulable states may present, atypically, as a cerebral hemorrhage, possibly through the development of CSVT. Early detection of this pathology is vital since it implies that long term anticoagulant treatment should be considered promptly. Therefore, vascular imaging studies should be carried out in cases of cerebral hemorrhage that cannot be readily attributed to other causes.

Abstract No.: OP1167

Abstract Title: CORRELATION BETWEEN QUALITY OF LIFE WITH THE RANGE OF MOTION OF THE KNEES IN REHABILITATED PATIENTS AFTER BILATERAL TOTAL KNEE REPLACEMENT

Authors(s): Nožica- Radulović T, Stanković J, Jovičić N, Milić-Krčum B, Majstorović N

Presenting author: Nožica- Radulović

Institution: Institute for Physical Medicine and Rehabilitation "Dr Miroslav Zotovic", Banja Luka -Bosnia Herzegovina

ABSTRACT: Quality of life represents a personal feeling and observations about their individual, physical, emotional and social well being. Measuring the quality of life is important to be able to make accurate decision about treatment and to take measures to preserve the quality of all parts of life, especially physical function. Objective: The aim of this study is to estimate the influence of comprehensive postoperative rehabilitation on the quality of life in patients after bilateral total knee replacement, in correlation with the range of motion in the knees. Materials and methods: This prospective study included 20 patients of both sex after bilateral total knee replacement due to major degenerative changes of the knees, during 2008. and 2009. All patients had organized comprehensive medical rehabilitation at the Institute for physical medicine and rehabilitation Dr Miroslav Zotovic in Banja Luka. The quality of life was assessed for all patients with modified Womac Index after comprehensive postoperative medical rehabilitation. Parameters used for analysis were: age, sex, occupation, period of time between two surgical procedures, duration of rehabilitation, range of motion for flexion and extension for both knees on admission and on discharge and evaluation of quality of life with modified Womac Index on admission and on discharge after comprehensive postoperative rehabilitation. Results: Evaluation of rehabilitation success regarding quality of life was presented with modified Womac Index score. The numerical data analysis was done using paired-samples t-test and correlation. Results showed statistically significant improvement in quality of life for all segments. None of the motion range parameters of the left and the right knee has shown a statistically significant correlation with Womac Index on admission nor at discharge. Conclusion: The quality of life in patients with bilateral total knee replacement was improved in all parts, especially regarding the pain, after comprehensive postoperative medical rehabilitation. There was no statistically significant correlation between the Womac index and the range of motion of the knees. Reference: 1. Sharkey P F, Hozak W J, Rothman R H, Shastri S, Jacoby S M."Why are total knee arthroplasties failing today, Clin.Orthop. Relat. Res (2002), 404; 7-14 2.Hemelynck K. LCS Mobile Bearing Total Knee Arthroplasty.Springer, Berlin 2002 : 96 – 100. 3. Insall J, Kelly M. The total condylar prothesis. Clin Orthop 1986. 4. Sestan B, Gulan G. Aloartroplastika koljena, Rijeka 2009. 5. Matokovic D, Haspl M. Korektivne osteotomije u liječenju degenerativnih promjena koljenskog zgloba. Lijec Vjesn 2000. 6. Shoji H, Solomonow H, Yoshino S, D Ambrosia R, Dabezies E. Factors affecting postoperative flexion after total knee arthroplasty. Orthopedics 1990. 7. Parsley B, Eugh G, Dwyer K. Preoperative flexion – Does it influence postoperative flexion after posterior crucate retaining total knee arthroplasty? Clinical Orthorpedics and Related Research 1992. Key words: rehabilitation, quality of life, Womac Index.

Abstract No.: OP1168

Abstract Title: OUTCOMES OF INPATIENT REHABILITATION OF ELDERLY PATIENTS AFTER HIP FRACTURE

Authors(s): Radosavljević N, Radosavljević Z, Milenković D, Milićević-Marić V

Presenting author: Radosavljevic N

Institution: Institute of Rehabilitation, Mladenovac- Belgrade

ABSTRACT: The aim of this study was to determine the effectiveness of inpatient physical treatment of geriatric patients after surgically treated hip fractures. The study was conducted at the Institute for Rehabilitation of Belgrade. For observed patients were recorded general data, information on other diseases, data about fracture and surgery and Mini Mental Score (MMS). Parameters used for evaluation of rehabilitation are part of Functionale Independance Measure (FIM) scale related to the self-care, locomotion and transfer and the Berg balance scale (BBS). We examined 69 patients, average age of 75.43 years of whom 87.8% were females. In observed group 73.5% had hypertension and 48.5% were cardiac patients. Diabetes mellitus had a 20.6%. Average MMS value was 20.9. The average time elapsed from surgery until rehabilitation was 53.16 days. Complete physical treatment, including hydrotherapy had 39.7% of patients without hydrotherapy 37.9% and reduced physical therapy had 32.4%. Four patients (5.88%) did not completed rehabilitation because of complications. Rehabilitation took an average of 29.15 days. On the admission the average score of FIM was 32.15 (SD 10.02) and on discharge 52.82 (SD14, 39). Average admission value of BBS was 20,28 (SD 7.85) and on discharge 39.84. The FIM score at the beginning and end of rehabilitation as well as the BBS showed highly statistically significant difference ($p = 0.000$). Our inpatient rehabilitation treatment showed high efficacy in the rehabilitation of elderly patients after hip fracture treated surgically, measured by FIM and BBS score.

Abstract No.: OP1170

Abstract Title: **BENEFITS ON FATIGUE, SPASTICITY PERCEPTION AND QUALITY OF LIFE DETERMINED BY THERAPEUTIC EXERCISE IN HYPOGRAVITY ENVIRONMENT IN PATIENTS WITH MULTIPLE SCLEROSIS: A PROSPECTIVE RANDOMIZED PILOT STUDY**

Authors(s): E. Ciocchetti, E. Magni, C. Ljoka, G. Della Bella, and C. Foti

Presenting author: E. Ciocchetti

Institution: Tor Vergata University in Rome, Physical and Rehabilitation Medicine, Department of Public Health, Rome, Italy

ABSTRACT: Introduction. Therapeutic Exercise in Hypogravity Environment (TEHE) has been increasingly promoted in rehabilitation of patients with MS (pwMS), thanks to the water properties of making possible to exercise in a global way. The aim of this study was to assess whether an Intensive program (high frequency-short duration) may lead additional benefits to pwMS on fatigue, perception of spasticity, quality of life, compared to a Standard program (low frequency-long duration).

Material and method: Twenty-four MS patients, meeting specific inclusion criteria, were enrolled in the PM&R Department of Tor Vergata University and randomly assigned to two groups: the first performing an Intensive program (5 sessions a week for 2 weeks) and the second a Standard program (2 sessions a week for 8 weeks) of TEHE. Subjects were assessed through appropriate rating scales at the beginning and at the end of the exercise cycle.

Results: The Pre-Post analyses of the results from both the groups showed reduction in fatigue and spasticity perception and improvement in quality of life, but the Standard program group only showed statistically significant changes ($p < 0.05$).

Conclusion: The results suggest that TEHE conducted in an Intensive mode does not produce additional benefits in pwMS compared to the Standard low frequency-long duration mode. Further studies are to be conducted to identify the most favourable plans of TEHE for pwMS.

Abstract No.: OP1176

Abstract Title: PERIPHERAL ARTERIAL DISEASE: AN EXCLUSION CRITERIA FOR EXERCISE TRAINING?

Authors(s): Magalhães S, Rocha JA, Silva AI, Parada F

Presenting author: Magalhães S

Institution: Centro de Medicina de Reabilitacao de Alcoitao, S. Joao da Madeira - Portugal

ABSTRACT: Introduction: Peripheral arterial disease (PAD) is strongly associated with increased cardiovascular risk and limits walking ability, further contributing to decreased physical activity, cardiopulmonary and peripheral muscle deconditioning, more adverse cardiovascular risk factor profile aggravating atherogenesis and worsening prognosis of ischemic cardiopathy. We intended to analyse prevalence of vascular claudication in a hospital-based cardiac rehabilitation (CR) setting, and establish its influence on cardiac rehabilitation outcomes, including functional, psychosocial and quality of life aspects. Methods and Subjects: Longitudinal study of patients who completed a CR program between October 2008 and March 2010. Data on sociodemographic, clinical, laboratorial, echocardiographic and functional capacity was collected from clinical files. Quality of life and walking limitation were assessed by Short-Form 36 (SF-36) version 2 and the Walking Impairment Questionnaire (WIQ), respectively. We summarized walking ability using a mean value of the three components of the WIQ, and further categorized patients in two groups: claudicating (<80%) and non-claudicating (≥80%). Results: A total of 147 patients were analyzed, including 66 (44,90%) with clinical claudication. Except for gender, with higher proportion of claudication in females (81,8% versus 40,9% for males, $p<0,001$), there were no difference between groups in age, level of education or professional status. Prevalence of hypertension, diabetes and tobacco consumption, overweight and abdominal obesity was higher in the claudicating group. Walking impairment was associated with higher levels of anxiety, depressive symptoms, functional capacity and functional impairment in both physical and mental dimensions of health-related quality of life, both at program entry and completion. Both groups showed similar improvements in anthropometric, functional and quality of life measures. Discussion: Presence of significant claudication results in lower quality of life, even in those engaged in CR. The maintenance of walking impairment due to a decreased exercise tolerance, favours a sedentary lifestyle further impairing cardiovascular risk profile and overall cardiopulmonary and muscular conditioning. Conclusion: Intermittent claudication is a major symptom of systemic atherosclerotic disease, resulting in severe calf pain after short walks. An individually tailored CRP allows for significant gains in functional capacity and health-related quality of life, even in those severely impaired by their peripheral arteriopathy, and should not be considered an exclusion criteria for exercise training. Adjustments in both intensity and volume of exercise training sessions will allow for significant improvements and compliance with recommendations for secondary prevention in coronary heart disease.

Abstract No.: OP1185

Abstract Title: THE IMPACT OF BODY IMAGE DISTURBANCE ON REHABILITATION PROGRAM IN LOWER LIMB AMPUTEES: A PILOT STUDY

Authors(s): C.Damiani, V.Rosati, I.Clemenzi, C.Foti

Presenting author: C.Damiani

Institution: San Raffaele Portuense, Rome - Italy

ABSTRACT: Introduction: Amputee gait training with prosthesis seems to be greatly correlated to a disturb of the self body image because of limb loss and phantom pain syndrome .In the literature this correlation is still undetected. The aim of this monocentric pylot study is to verify and quantify the self body image disturbance. It's important also to verify the impact of self body image disturbance on rehabilitation program in these patients, such as adaptament to the prosthesis, anxiety and depression. Methods: 33 inpatients were enrolled in this experimental study. All group participated in a conventional amputee rehabilitation program. Inclusion criteria: lower limb amputation Exclusion criteria: non-collaborative patient; serious cognitive impairment; central nervous system disorders; severe comorbities. Main outcome measures: FIM, MMSE, ABIS, TAPES, MPQ, CES-D, STAI-Y performed at the beginning and at the end of the rehabilitation program. Results: All patients have a great functional improvement. There is a strong negative correlation between the self body image disturbance and general and social adaptament to the prosthesis. There is a strong positive correlation between body image disturbance and state and trait anxiety and depression. Conclusion: This study shows the importance of a specific rehabilitation program. In particular we can observe the need of an early and appropriate prothesization for reconstruction of the correct self body image.

Abstract No.: OP1186

Abstract Title: TAI – CHI EFFECTS ON BALANCE, MOBILITY, AND GAIT IN PARKINSON DISEASE

Authors(s): C. Damiani, S. Cassarino, S. Ippolito, L. Bestavashvili, I. Clemenzi, C.Foti

Presenting author: C. Damiani

Institution: San Raffaele Portuense, Rome – Italy

ABSTRACT: Tai Chi Chuan is an ancient body-mind exercise which could create excessive physical and mental challenges for PD. For this reason it has been developed a Parkinson's specific TCC-based exercise program able to improve postural control without risks of injuries. The aim of this study is to evaluate the effects of Yang Style TCC on postural control and mobility in PD patients. 14 patients with PD, Hoehn Yahr 1.5-3, MMSE > 20, without severe co-morbidity, able to walk independently for at least 3m with or without assistive devices were divided in two group: Group A who underwent the rehabilitative standard protocol +TCC program, 60 min/weekly/12 sessions and group B treated only by standard protocol. The postural and movement control in static and dynamic single leg stance were examined by an advanced computerized system Delos that permits to evaluate the choice of postural strategy. All patients were evaluated by UPDRS, Tinetti balance, Barthel, FES, Delos at admission/discharge. The psychological evaluation was performed before, during and after the treatment (Hamilton Scale, group sessions). The results obtained confirmed the postural control and mobility improvement. The psychological evaluation has shown the self-confidence and mood improvement. The 4 forms of specific TCC accompanied by visual cue could be useful as an adjunctive strategy to improve postural static and dynamic control in patients with PD. The follow up study will be performed to confirm the results obtained and to verify the duration of the treatment effects in time.

Abstract No.: OP1187

Abstract Title: **ULTRASOUND GUIDED INTERVENTIONAL PROCEDURES: THE PERCUTANEOUS TREATMENT OF CALCIFYING TENDINITIS OF ROTATOR CUFF TENDONS**

Authors(s): Prof Foti Calogero, Luigi Di Lorenzo

Presenting author: Prof Foti Calogero

Institution: Tor Vergata University, Rome - Italy & RUMMO Hospital BN

ABSTRACT: Calcific tendinitis is a common painful condition of the shoulder due to deposition of hydroxyapatite crystals. There is general agreement that calcific tendinitis should initially be treated non-operatively and excision reserved for cases unresponsive to conservative treatment. Percutaneous needle extraction has been used with good results in 60–70% of patients when procedures have been performed under fluoroscopic control. Ultrasonography has been shown to detect and localize rotator cuff calcifications reliably. We report results of our first US-guided treatments of painful calcific tendinitis of the rotator cuff resistant to conservative therapy in order to report and explain the “easy-to-perform” methodology to Congress auditorium and discuss with it in Congress the clinical based evidence reported in literature by published papers and Evidence Based notes. Material and method: the so-called “aspiration irrigation technique” is worldwide performed Under ultrasound guidance, an amount of local anaesthetic (usually lidocaine 2%) is injected within the subacromial bursa by a first needle 16/18G 40mm. The needle path is toward the rotator cuff calcification to be treated. A second 18G 40mm needle is inserted within the calcification. One out of 2 needles is alternatively used to go through within the calcification and usually we use a needle-guide inside one of the 2 so to try to break the calcification together with an additional rotational performed movement. Afterward, we do an injection of saline water and local anaesthetic through one of the 2 needle and perform aspiration by the other one in an effort to remove calcified material. At the end of these procedures, 1 ml/40 mg of depo-medrol is injected into the subacromial bursa to treat painful inflammation. At the end of procedure residual calcific deposits remain within the tendons and are expected to be reabsorbed in 6 month. Ice bag, NAISDs (usually indometacine 25 mg tabs bd) levofloxacin 500 mg once day for a week and Laser HILT therapy is performed. Result. In the plenary session we eventually we’ll present iconography and methodology. Conclusion: US offer precise guidance for needle placement into the calcification without radiation exposure. The most of authors reported results to be favourable in over 70% of cases and 1 year follow-up shows that they are also maintained. Best results are obtained when the calcification has a faint or absent acoustic shadow and the deposit is more than 1 cm in diameter.

Abstract No.: OP1190

Abstract Title: THE DYNAMICS OF EDUCATIONAL PROCESS IN REHABILITATION AND PHYSIOTHERAPY IN ROMANIA

Authors(s): Adriana Sarah Nica, Gilda Mologhianu, Andreia Murgu, Roxana Miclaus, Consuela Brailescu, Rodica Scarlet, Marius Ivascu

Presenting author: Nica Sarah Adriana

Institution: "Carl Davila" University Of Medicine And Pharmacy, National Institute Of Balneoclimatology, Bucharest – Romania

ABSTRACT: Physical medicine and rehabilitation in Romania had developed from the balneology and physical medicine, in close relationship with sports medicine.

In the context of the socio-economic dynamics the specialists' training suffered changes imposed of the historical events (the two world wars, changes of the political context and system in Romania) as well as the real needs of special medical offer and the politicians' mentality, medical comprehension and decision.

The Rehabilitation and Physical therapy's developed between 1910-1922, then was guided by the first balneal law in 1926 and after 1949 the National Institute of Balneoclimatology has been created and structured. This represented the start of the national balneal network development and of the specific structures in rehabilitation in the major cities (hospitals and ambulatories).

In this context the educational program for the rehabilitation specialists (doctors and psysiotherapists) associated a lack of human resources. The solution was to use the specialist trained in National Institute of Physical Education and Sports (Sports teachers), which followed a special training in rehabilitation under medical supervision.

Curriculum programs have been developed and applied following the international curriculum. 15 years ago the duration of the residency for doctors in rehabilitation changed to 3 years and in different specialties connected to rehabilitation turned to 2 years.

The rehabilitation curriculum follows the European curriculum dynamics from the first "White book of Rehabilitation" in 1990 to the last forms.

The physiotherapist specialty had a large number of names from balneo-physiotherapist, kinetotherapist and has been modified after European and North American models.

The process of changing and adapting the name is still continuing, in order to achieve the same international recognition.

Abstract No.: OP1192

Abstract Title: EFFECTS OF THE HEAT INHALATION AS A NOVEL METHOD OF WHOLE BODY WARMING IN NORMAL SUBJECTS

Authors(s): Junichi Iiyama, Shinji Miyazaki

Presenting author: Junichi Iiyama

Institution: Kumamoto Health Science University Graduate School of Health Science, Kumamoto - Japan

ABSTRACT: It has been reported that repetitive low temperature sauna bathing improve endothelial function with cardiovascular diseases, for example, severe heart failure, arteriosclerosis obliterans, coronary risk factors and so on. Although whole body thermal therapy has many therapeutic meaning, there are some restrictions to use sauna and bath tub as a device for general body heating practically, especially in case that the subjects have some physical disabilities. The object of this study is investigating the effects of thermal air inhalation to develop the new device of whole body heating through respiratory tract. Seven healthy male subjects were inhaled thermal air at 43~44 degree Celsius for 12 min using the commercial steam vaporizer. They were covered with cloth material to prevent heat loss from the body surface. We measured sublingual temperature, tympanic temperature, blood pressure and heart rate. Though, sublingual temperature rose up significantly 0.5 degree Celsius and declined immediately after the inhalation, tympanic temperature rose up only 0.1 degree Celsius while inhaling and rose up 0.2 degree Celsius after the inhalation. Systolic blood pressure fell down 5 mmHg immediately after heat inhalation with statistical significance. Heart rate rose up 12 bpm and kept 15min after finishing heat inhalation. The time lag between sublingual and tympanic temperature was probably due to the difference of heat diffusion. It is supposed that the inhaled heat in respiratory tract was distributed evenly across the body by systemic circulation. Thermal inhalation would be a novel way of whole body thermal therapy. Now we are developing the more effective inhalation system which is easy to heat our body in any place and in any subjects

Abstract No.: OP1194

Abstract Title: URINARY DYSFUNCTION AND HEALTH RELATED QUALITY OF LIFE IN PARKINSON'S DISEASE

Authors(s): D. Marin, P. Di Benedetto

Presenting author: D. Marin

Institution: Institute of Physical Medicine and Rehabilitation, Udine - Italy

ABSTRACT: INTRODUCTION Urinary dysfunction is highly prevalent among individuals with idiopathic Parkinson's Disease (PD). There has been increasing attention of the importance of this and other non-motor features of the condition. We want study the impact of lower urinary tract symptoms (LUTS) in health related quality of life (QoL) and depression symptoms in PD patients. METHODS: We studied 40 (20 male and 20 female) PD patients divided in two matched groups: the first included patients with LUTS while the second was a control group (C). The patients were evaluated with UPDRS, Hoehn-Yahr Scale, MODA (scale for dementia), and Beck Depression Inventory (BDI). QoL was evaluated with SF-36 and Qualiveen questionnaire (that is a new urinary disorder specific health related quality of life inventory). RESULTS and DISCUSSION: The two groups were similar in terms of age, disease duration, results at the MODA and at two clinical scales. The LUTS group shows higher scores compared to the C group at BDI scale. On the SF36 questionnaire the LUTS group showed significant lower scores in the scales of mental health and social functioning. PD patients with LUTS also completed the Qualiveen. The higher scores found were in the scale "bother with limitation", than "frequency of limitation", "fears" and "feelings". Qualiveen and BDI had a significant positive correlation (Spearman. .651 sig. 0.01). SF36 and Qualiveen had a significant negative correlation (Spearman. -.561 sig. 0.05). CONCLUSIONS In our sample, PD patients with LUTS show a higher depressive symptomatology and a reduction of daily live activities related with urinary disorders.

Abstract No.: OP1197

Abstract Title: PHYSICAL INVOLVEMENT AND THE LEVEL OF AEROBIC CAPACITY (VO2MAX) IN BREAST CANCER SURVIVOR

Authors(s): Brdareski Z, Djurovic A, Susnjar S, Konstantinovic Lj, Ristic A, Vanovic M, Dekić Lj.

Presenting author: Brdareski Z.

Institution: Clinic for Physical Medicine and Rehabilitation, Military Medical Academy, Serbia

ABSTRACT: The breast cancer survivors (BCS) are usually less active and they have the increased risk of developing of cardiovascular disease, diabetes and depression. The aim of this study was to determine whether physical activity (PA), related to the housework along with usual form of exercise, have an impact on the level of the VO2max. Material and methods: prospective clinical research with 28 BCS. Data on PA (housework and degree of other PA) are taken with the survey list. The level of VO2max was measured by Astrand-test on a bicycle ergometer. Statistics: xav, SD, Chi-square test, student t-test; p 0.05. Results: Group A (insufficient levels of VO2max) consisted of 14 woman. In group B, 12 had average, and 2 had high level of VO2max. They spent 13.89 ± 5.31 hpw for housework and 4.56 ± 3.15 hpw for other forms of PA. The groups didn't significantly differ neither to the level of physical activity nor to the level of education. Discussion: there is ACSM recommendation of at least 30 minutes of moderate level physical activity p/d or 20-60 minutes, 3-5 times a week. Although the majority of participants (23) reported to walk fairly regularly, and 18 of them have other forms of exercise, only those who had aerobic training (swimming, langlauf machine) had a high VO2max. Conclusion: In our group of participants, regardless to regular involvement in housework and some other PA (mostly walking), 50% of them did not have a satisfactory level of VO2max. Reference: 1. Nieman D. Exercise testing and prescription – a health related approach. Fifth edition; McGraw Hill: 2003. 2. Julie K Silver Exercise in survivors of cancer BMJ 2007;334:484-485 (10 March), doi:10.1136/bmj.39134.625012.80

Abstract No.: OP1198

Abstract Title: CHRONIC LOW BACK PAIN, DEPRESSION AND FUNCTIONAL IMPAIRMENT: A CORRELATION STUDY

Authors(s): Ana Montez, Pedro Figueiredo, João Páscoa Pinheiro, Manuel Quartilho, João Branco

Presenting author: Pedro Figueiredo

Institution: Hospitais da Universidade de Coimbra - Serviço de Medicina Física e de Reabilitação, Coimbra - Portugal

ABSTRACT: Introduction: Low back pain represents 18% of chronic pain. One in five chronic pain sufferers had been diagnosed with depression as a result of their pain and these two conditions are frequently associated. This study pretends to determine the relationship between low back pain, psychopathological symptoms and its influence in patients' quality of life. Methods and Subjects This clinical study included 31 patients with chronic low back pain for more than 12 weeks, from both genders older than 40 years old and younger than 70 years old. Assessment tools included the following health questionnaires: Oswestry Disability Index: version 2, Brief Symptom Inventory e Short-Form-36, in the Portuguese validated versions. Results This sample obtained an "incapacity score" of 35,80%, corresponding to moderate disability. The quality of life of the patients with low back pain is globally poor and its physical dimension is more affected than its mental dimension. It was demonstrated a higher prevalence of somatization and depression in this sample than in the general population. The Positive Symptoms Indíce of Brief Symptom Inventory also has a higher value on this sample; which allows us to classify it as a population with a higher prevalence of emotional disturbances. There are significant correlations between these psychopathological dimensions and the total Oswestry Disability Index (incapacity) but not with the pain intensity. The pain resulting incapacity is associated with a lower quality of life. The quality of life is also lower when associated with somatization and depression, but it is essentially affected on its mental dimension. Discussion and Conclusion Low back pain is associated with more incapacity and its course is associated with psychological and social variables. It supports the importance of effective managing psychological factors and emotional distress when treating low back pain.

Abstract No.: OP1203

Abstract Title: STROKE AND HEALTH-RELATED QUALITY OF LIFE

Authors(s): Micha M., Mathiopoulos A. and K. Petropoulou

Presenting author: Micha M.

Institution: National Rehabilitation Centre, B' Department Of Physical Medicine and Rehabilitation, Athens - Greece

ABSTRACT: AIM: The assessment of health-related quality of life (HRQoL) in Greek patients with a history of stroke and the identification of factors associated with it. MATERIALS AND METHODS: A perspective study of HRQoL in 36 patients with stroke by means of general questionnaires SF-36 and EQ-5D. Barthel index was used for the evaluation of activities of daily living (ADL) and the severity of stroke was graded by National Institute of Health Stroke (NIHS) scale. Demographics and clinical characteristics of the patients were also recorded. RESULTS: Mean age of patients: 64.3 ± 15.9 years, mean duration of disease: 5.9 ± 5.1 years. 41.7% presented with uninhibited bladder and spasticity was detected in 58.3%. 25% of the patients were able for therapeutic ambulation with low mean scores on SF-36 in the domains: physical role ($p=0.002$), social role ($p=0.018$) and emotional role ($p=0.049$). Mean value of EQ-5D: 0.21 ± 0.4 , while the mean scores on SF-36 dimensions were found low, ranging from 23.5 (physical functioning) to 49.1 (role emotional). 83.3 % had medium to severe problems with self-care, 97.2% with mobility, 83.3% reported bodily pain and 91.7% presented with stress and depression. Patients with urinary disturbances were found to have lower scores in social role ($p=0.033$) and mental health ($p=0.044$). Subjects with spasticity were found with low scores in domain of mental health ($p=0.035$). Significantly low indices of HRQoL by means of EQ-5D were found in subjects with urinary disturbances ($p=0.002$) and spasticity ($p=0.018$). Negative correlation between Barthel index and NIHS was found, with correlation coefficients ranging between 0.37 and 0.72. CONCLUSIONS: Stroke has a negative impact on HRQL in patients with history of stroke and the factors associated with it should be appropriately managed by the rehabilitation specialist. AIM: The assessment of health-related quality of life (HRQoL) in Greek patients with a history of stroke and the identification of factors associated with it. MATERIALS AND METHODS: A perspective study of HRQoL in 36 patients with stroke by means of general questionnaires SF-36 and EQ-5D. Barthel index was used for the evaluation of activities of daily living (ADL) and the severity of stroke was graded by National Institute of Health Stroke (NIHS) scale. Demographics and clinical characteristics of the patients were also recorded. RESULTS: Mean age of patients: 64.3 ± 15.9 years, mean duration of disease: 5.9 ± 5.1 years. 41.7% presented with uninhibited bladder and spasticity was detected in 58.3%. 25% of the patients were able for therapeutic ambulation with low mean scores on SF-36 in the domains: physical role ($p=0.002$), social role ($p=0.018$) and emotional role ($p=0.049$). Mean value of EQ-5D: 0.21 ± 0.4 , while the mean scores on SF-36 dimensions were found low, ranging from 23.5 (physical functioning) to 49.1 (role emotional). 83.3 % had medium to severe problems with self-care, 97.2% with mobility, 83.3% reported bodily pain and 91.7% presented with stress and depression. Patients with urinary disturbances were found to have lower scores in social role ($p=0.033$) and mental health ($p=0.044$).

Abstract No.: OP1203 (continuation)

Abstract Title: STROKE AND HEALTH-RELATED QUALITY OF LIFE

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Negative correlation between Barthel index and NIHS was found, with correlation coefficients ranging between 0.37 and 0.72.

CONCLUSIONS: Stroke has a negative impact on HRQL in patients with history of stroke and the factors associated with it should be appropriately managed by the rehabilitation specialist. **AIM:** The assessment of health-related quality of life (HRQoL) in Greek patients with a history of stroke and the identification of factors associated with it. **MATERIALS AND METHODS:** A perspective study of HRQoL in 36 patients with stroke by means of general questionnaires SF-36 and EQ-5D. Barthel index was used for the evaluation of activities of daily living (ADL) and the severity of stroke was graded by National Institute of Health Stroke (NIHS) scale. Demographics and clinical characteristics of the patients were also recorded. **RESULTS:** Mean age of patients: 64.3 ± 15.9 years, mean duration of disease: 5.9 ± 5.1 years. 41.7% presented with uninhibited bladder and spasticity was detected in 58.3%. 25% of the patients were able for therapeutic ambulation with low mean scores on SF-36 in the domains: physical role ($p=0.002$), social role ($p=0.018$) and emotional role ($p=0.049$). Mean value of EQ-5D: 0.21 ± 0.4 , while the mean scores on SF-36 dimensions were found low, ranging from 23.5 (physical functioning) to 49.1 (role emotional). 83.3 % had medium to severe problems with self-care, 97.2% with mobility, 83.3% reported bodily pain and 91.7% presented with stress and depression. Patients with urinary disturbances were found to have lower scores in social role ($p=0.033$) and mental health ($p=0.044$). Subjects with spasticity were found with low scores in domain of mental health ($p=0.035$). Significantly low indices of HRQoL by means of EQ-5D were found in subjects with urinary disturbances ($p=0.002$) and spasticity ($p=0.018$). Negative correlation between Barthel index and NIHS was found, with correlation coefficients ranging between 0.37 and 0.72. **CONCLUSIONS:** Stroke has a negative impact on HRQL in patients with history of stroke and the factors associated with it should be appropriately managed by the rehabilitation specialist.

Abstract No.: OP1204

Abstract Title: CHARACTERIZATION OF A POPULATION OF SPINAL CORD INJURED (SCI) PATIENTS IN A REHABILITATION CENTRE - A DESCRIPTIVE AND CORRELATIONAL STUDY

Authors(s): Pedro Figueiredo, Arminda Lopes, Paulo Margalho

Presenting author: Pedro Figueiredo

Institution: Hospitais da Universidade de Coimbra - Servico de Medicina Fisica e de Reabilitacao, Coimbra - Portugal

ABSTRACT: Introduction: This work aims to do a statistical analysis of the characteristics of the population of spinal cord injured patients admitted to a rehabilitation centre, emphasizing the development of functional and studying correlations between demographic, clinical and functional. Methods and Subjects: The sample includes patients admitted to a rehabilitation centre during a period of 7 years. Retrospective review of case reports of hospitalization. We collected demographic, the etiological diagnosis, neurological assessment (ASIA Impairment Scale (AIS)), functional status (FIM admission and discharge). We calculated the values of "functional gain and functional gain per day of hospitalization" and "chronicity of lesion". Data on functional status were considered only in the first hospitalization. Results: The study included 306 patients (100 women and 206 men) with mean age of 47 years. Of these, 131 were paraplegics and 175 quadriplegics. The vast majority of injuries are traumatic (traffic accidents, fall). The average length of stay was 119 days. The average FIM at the admission is 76/126 and 95/126 at discharge, and the average functional gain of MIF 19/126. O value entry has a statistically significant correlation (Spearman coefficient) with age and the value ex MIF. There is also a significant correlation between the chronicity of lesion and the FIM at admission. There was also a statistically significant correlation between the functional gain and length of stay and functional gain day. There is a significant negative correlation between the functional gain in the MIF and chronicity of lesion. Discussion and Conclusion: The study demonstrates the higher prevalence of this condition in men and the high incidence of trauma. It demonstrates the influence of age on the initial functional status. The results suggest a reasonable adjustment mean duration of hospitalization and the criteria for admission patients.

Abstract No.: OP1205

Abstract Title: PREDICTING OUTCOME FOLLOWING SPINAL CORD INJURY

Authors(s): Athanasios E. Kyriakides

Presenting author: Athanasios E. Kyriakides

Institution: Physical & Rehabilitation Medicine Dpt 'Kentavros' Volos, Athens - Greece

ABSTRACT: Predicting outcome following spinal cord injury Introduction: Functional outcome in terms of capacity to walk is the most important issue that spinal cord injured patients desire to know. The prediction of this function is essential for the patient, his family and the rehabilitation team in order to organise the future. Methods: This article presents a review of the evidence for predicting neurological recovery following spinal cord injury. It also highlights the significance of the psychosocial approach of spinal cord injured patients and presents some ethical issues that arise in SCI rehabilitation resulting from the direct interaction of the doctor with the patient. Results: In latest years our knowledge of the course of neurological recovery has increased. This information enables us, based on the detailed neurological assessment to predict functional capacity with accuracy within the first days post-injury. Discussion / Conclusion: Basic requirements to predict functional outcome are the skill of performing an accurate neurological examination and also the knowledge of the relationship of function to recovery. Furthermore the ability to prognosticate performance in real life depends on possible limitations on implementing SCI guidelines in different European countries according to special national characteristics.

Abstract No.: OP1206

Abstract Title: APPLICATION OF THE BRIEF ICFCORE SET FOR OSTEOPOROSIS: PATO SURVEY

Authors(s): Francesca Gimigliano, Giovanni Iolascon, Raffaele Gimigliano

Presenting author: Francesca Gimigliano

Institution: Second University of Naples, Naples - Italy

ABSTRACT: Osteoporosis (OP) is a disease characterized by low bone mass and microarchitectural deterioration in bone tissue, leading to enhanced bone fragility and a consequent increase in fracture risk. Fragility fractures cause significant morbidity, disability, and decrease in quality of life, as well as leading to long-term limitations in functioning. Based on the International Classification of Functioning, Disability and Health, it was defined the typical spectrum of problems in functioning of patients with OP. The main aims of our study was to use the Brief ICF Core Set for OP to classify the different rehabilitative needs of osteoporotic patients with and without fragility fractures and to correlate the fragility fracture risk, calculated with the FRAX tool, to the rehabilitative needs. We are conducting a National survey involving 83 Rehabilitation units. Each unit was asked to enrol, in a six months period, 100 osteoporotic patients (50 with a fragility fracture and 50 without). Data are collected using both the FRAX tool and the Brief ICF Core Set for Osteoporosis. References 1. Cieza A, Schwarzkopf SR, Sigl T, Stucki G, Melvin J, Stoll T, Woolf AD, Kostanjsek N and Walsh N. ICF Core Sets for Osteoporosis. J Rehabil Med 2004; Suppl. 44: 81–86. 2. Kanis JA, Oden A, Johansson H, Borgstrom F, Strom O, McCloskey E. FRAX and its applications to clinical practice. Bone. 2009;44(5):734-43.

Abstract No.: OP1208

Abstract Title: UNILATERAL DIAPHRAGMATIC PARALYSIS:
AN UNDERDIAGNOSED AND UNDERTREATED CONDITION?

Authors(s): Magalhaes S, Miranda MJS, Palhau L

Presenting author: Magalhaes S

Institution: Centro de Medicina de Reabilita  o de Alcoit  o, Arrifana, Portugal

ABSTRACT: Introduction: Diaphragm muscle is an important component of normal breathing process, especially during inspiratory phase. Its role in breathing is highly dependent of its shape and global movement¹, with body position interfering with its efficacy. Diaphragmatic paralysis is a pathologic condition, with many possible etiologies, being the idiopathic cause the most frequent²; it can affect one or both diaphragmatic halves. Unilateral diaphragmatic paralysis may induce dyspnea on exertion and orthopnea³, but as an uncommon diagnosis, is frequently underdiagnosed and undertreated as well. In the literature, little information is available, especially about the possible benefits of conservative approach with respiratory rehabilitation. We intend to discuss the possible benefits of conservative treatment with a respiratory rehabilitation program in the unilateral diaphragmatic paralysis. Methods and Subjects: Review of unilateral diaphragmatic paralysis was made using international medical databases, restricted to the period 2000-2010. Keywords: "unilateral diaphragmatic paralysis"; "unilateral diaphragm paralysis". Discussion: Recognition of unilateral diaphragmatic paralysis is frequently suspected after a chest radiography and further documented by fluoroscopy, ultrasound⁴, pulmonary function tests with MIP/MEP evaluation (maximal inspiratory pressure and maximal expiratory pressure, respectively), with an electromyographic study allowing to characterize the lesion. Recovery prognosis of diaphragm paralysis is quite uncertain, being described in small studies the possibility of spontaneous recovery. The role of a conservative diaphragm rehabilitation approach is uncertain, although data existing in literature is scarce and the timing of intervention variable⁵. Conclusions: Unilateral diaphragmatic paralysis is an uncommon cause of exertion dyspnea and orthopnea, with more important repercussion on life quality and exercise ability, than previously expected. A conservative intervention based on respiratory rehabilitation may help improve symptoms, isolated or associated to a surgical procedure. More studies are needed to document the efficacy of such a conservative approach, helping to establish a treatment protocol of unilateral diaphragmatic paralysis. References: 1- Moore KL, Dalley AF. Clinically oriented anatomy. 6th ed. Lippincott Williams&Wilkins. 2. Dernaika T, Younis W, Carlile P. Spontaneous recovery in idiopathic unilateral diaphragmatic paralysis. *Respir Care* 2008; 53 (3): 351-54 3- Hart N, Nickol AH, Cramer D et al. Effect of severe isolated unilateral and bilateral diaphragm weakness on exercise performance. *Am. J. Respir Crit Med* 2002; 165:1265-1270 4- Summerhill E et al. Monitoring recovery from diaphragm paralysis with ultrasound. *Chest* 2008; 133:737-743 5- Gayan-Ramirez G et al. Functional recovery of diaphragm paralysis: a long-term follow-up study. *Respir Med* 2008; 102, 690-698.

Abstract No.: OP1210

Abstract Title: PEER COUNSELLING IN AMPUTEE GROUPS

Authors(s): C. Damiani, I. Clemenzi, V. Rosati, C. Paniccia

Presenting author: Carlo Damiani

Institution: San Raffaele Portuense, Rome - Italy

ABSTRACT: Peer counselling is an active listening technique for problem solving to assist and advise people with the same issues. It is a modern technique of consulting based on the solution of patients social, physical and mental requires. In lectures this technique is used for dependents from alcohol, smoking, gamblers, depression post-partum, food disorders, and sexual problem in SCI. The Amputee Coalition of America uses the Peer Counselling within Peer Mentoring Program (PMP), so a peer counselling course for formation of peer and National Peer Network was born. The aim of our work is to verify the effectiveness of this technique in amputee patients within rehabilitative program. Methods: From 2008 there have been performed the 8 weekly sessions of 1 hour duration of the psycho-therapeutic group consisted of amputee patients (10-12 persons per group). Inclusion criteria: amputee patients with inferior limb amputations, MMSE >15. Exclusion criteria: severe mental disorders. During these sessions there has been created the figure of peer counsellor in each group. We have observed 12 groups of amputees in 2 years where the peer counsellor was elected inside each group. The patients have been evaluated by the following scales pre- and post-treatment: ABIS, SF-36. Discussion: The peer counsellor program has determined an efficient elaboration of bereavement. Otherwise we have observed an improvement of the mood state and quality of life and a good perception of the proper physical and mental self. Conclusion.. It might be useful the application of the peer counsellor technique on the rehabilitative project to facilitate the acceptance of the proper condition.

Abstract No.: OP1211

Abstract Title: SPASTICITY AND DYSTONIA AN ESSENTIAL DIFFERENTIAL DIAGNOSIS IN CEREBRAL PALSY

Authors(s): Magalhães S, Ribeiro MM, Vaz R, Magalhães M

Presenting author: Sandra Magalhães

Institution: Hospital de Santo Antonio - Centro Hospitalar do Porto, Fiaes – Portugal

ABSTRACT: : Introduction: Cerebral palsy (CP) represents a group of disorders of the development of movement and posture, causing activity limitations that are attributed to non-progressive disturbances that have occurred in the developing foetal or infant brain. Hypertonia is a common symptom in these patients, with different neurological conditions such as dystonia and spasticity. Selecting and evaluating appropriate treatments for children with CP has been challenging. One difficulty is in the ability to quantify the presence and importance of coexisting motor signs. We present three CP cases to try to find clinical marks that help to separate dystonia from spasticity and demonstrate how these interfere with the treatment algorithm. Clinical Cases The first two cases are examples of pure spastic and dystonic cases: a 16 years old female with a spastic paraparesis and a 25 years old man with a generalized dystonia. The last case, is a 38 years female with a mixed hypertonia form. The patient presents a very severe generalized dystonia that justified palidal DBS treatment, and has also a hemiparesis with a typical spastic flexed posture of the hand. Comments: All these cases were selected from our Neurological Department for botulinum toxin outpatient clinical but they need and they have different approaches. A complete clinical assessment, allow us to distinguish between different motor disorders, the degree to which each contributes to reaching performance and have important treatment implications. Bibliography: Gordon LM, Keller JL, Stashinko EE, et al. Can Spasticity and Dystonia Be Independently Measured in Cerebral Palsy? Paediatric Neurology2006;35(6):375-381.

Abstract No.: OP1220

Abstract Title: ELECTROPHYSIOLOGICAL MONITORING OF ACTION OBSERVATION EFFECTS IN STROKE

Authors(s): Silvi Frenkel-Toledo, Shlomo Bentin, Dario G. Liebermann, Nachum Soroker

Presenting author: Silvi Frenkel-Toledo

Institution: Department of Neurological Rehabilitation, Loewenstein Hospital, Raanana - Israel

ABSTRACT: Introduction: Recent evidence suggests that Action Observation (AO) activates cortical motor areas, apparently through the “Mirror Neuron System (MNS)”. This activation is accompanied by attenuation of alpha oscillations over the sensory-motor cortex, termed “ μ suppression”. Our objective was to investigate whether μ suppression can be used clinically to monitor the neurophysiological effects of AO in stroke rehabilitation. Methods and Subjects: EEG was recorded while 30 stroke patients and 24 healthy control participants observed and execute different grasping manual movements. μ suppression was calculated relative to a baseline condition during which the participants observed a ball rolling on the screen. Concomitant EMG was recorded from right and left upper-limb muscles in order to investigate the relationship between μ suppression and muscle activation. Results: Observing video clips showing human upper limb movements induced μ suppression as shown by the ratio of the EEG power in the alpha range in all biological movement conditions relative to the baseline condition. The suppression was reduced and more asymmetrical across the cerebral hemispheres in stroke patients than in healthy controls both in the observation and execution conditions. The specific pattern revealed by patients was related to lesion location and extent. Discussion: Various properties of μ rhythm suppression may shed light on the mechanism underlying AO. Conclusion: These preliminary results support the assumption that μ suppression reflects the involvement of the motor system during AO and is likely to serve as a useful marker of AO therapeutic effect in hemiparetic stroke patients. References: Perry, A. and Bentin, S. Mirror activity in the human brain while observing hand movements: A comparison between EEG desynchronization in the μ -range and previous fMRI results. Brain Res 2009; 1282:126-132.

Abstract No.: OP1222

Abstract Title: FUNCTIONAL MOTOR EFFECTS OF VIRTUAL AND PHYSICAL ENVIRONMENT TRAINING ON UPPER EXTREMITY PERFORMANCE IN STROKE PATIENTS

Authors(s): Dario G. Liebermann, Osnat Snir, Sigal Berman, Harold P. Weingarden, Mindy F. Levin, Patrice (Tamar) L. Weiss

Presenting author: Dario G. Liebermann

Institution: Physical Therapy Department, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv – Israel

ABSTRACT: Background: Hemiparetic stroke patients present arm movements that result from a combination of residual upper limb motion and compensatory actions. In this study, we describe first the arm kinematics characteristics of stroke patients during reaching towards virtual and physical targets. Secondly, we focus on the clinical implications of virtual reality (VR) versus conventional (physical environment PE) interventions on the functional recovery of arm motion. Method: A group of 16 right-hemiparetic stroke patients (age range = 46-87 years) performed 84 reaching movements towards virtual and physical targets while seated. Reflective markers were attached to selected bony landmarks of the affected arm and 3D kinematic data were recorded using an optoelectronic system at a sampling rate of 100 Hz for 150 s. A clinical trial was carried out with second group of 12 patients (age range = 33-80 years) that were randomly assigned to either a conventional PE or a VR training groups. Both interventions consisted of 3 x 45-minute sessions per week for 3 weeks, and were directed at improving reaching ability of the affected upper extremity. Fugl-Meyer (FMA) and Wolf assessments of upper extremity function were carried out at 4 points in time: two baseline measures prior to the intervention, one time immediately after the intervention and one time 30 days after the intervention. The data were analyzed using ANOVAs for the kinematic data, and non-parametric statistics (Friedman and Wilcoxon tests) for the clinical data. Results: Arm motion of patients in VR condition was jerkier with large paths and longer than usual movement durations accompanied by pronounced arm rotations around the hand-shoulder axis. The randomized clinical trial showed no significant differences between subgroups in the week prior to the intervention in any of the clinical outcome measures. Neither were there any significant differences between the first and second baseline measures for each subgroup. The VR patients improved significantly in the FMA and Wolf assessments immediately following the intervention, and maintained this improvement 30 days after the intervention ceased. In contrast, the conventional PE subgroup achieved only a significant improvement in some of the clinical tests at the 30-day follow-up test. Conclusions: The findings suggest that during the performance of reaching in VR condition arm motion is specific. However, video capture VR as a treatment method for improving reaching in patients with stroke suggests that such a condition may in fact enhance arm function in spite of the specificity of the performed movements. The current research was partially funded by the Israeli Ministry of Health (PLW, DGL, HW), the Israel-France Research Networks Program in Neuroscience and Robotics (SB, DGL), and by REPAR (Quebec Rehabilitation Research Network - Canada) (MFL, PLW, DGL). MFL holds a Canada Research Chair in Motor Recovery and Rehabilitation.

Abstract No.: OP1223

Abstract Title: COMPARISON BETWEEN CORTICOSTEROID SUB-ACROMIAL INJECTIONS AND SHOULDER HYPERTHERMIA. VALUATION ON PAIN AND FUNCTIONAL STATUS OF PATIENTS WITH ROTATOR CUFF TENDINOPATHY: A SINGLE-BLIND, RANDOMIZED, CONTROLLED TRIAL

Authors(s): A. Specchia, A. Rabini, A. Sgadari, S. Paravati, G. Tancredi, C. Nigito, L. Maggi, P. Ferrara, G. Ronconi, C. Foti, C. Bertolini, D.B. Piazzini.

Presenting author: A. Specchia

Institution: Physical and Rehabilitation Medicine Unit, U.C.S.C. Rome - Italy
Physical and Rehabilitation Medicine Unit Policlinico Tor Vergata, Rome - Italy

ABSTRACT: Introduction: Aim of the study is to compare improvements in pain and functional status of patients with rotator cuff tendinopathy after corticosteroid sub-acromial injections and induction of Hyperthermia. Methods and Subjects: 92 patients randomized in 2 groups: corticosteroid sub-acromial injections (46) or induction of deep Hyperthermia (46). Quick-DASH, Constant-Murley scale and VAS were measured at baseline, after 1 month (T1), at 3 months (T2) and at 6 months (T3). Results: The I group reported an improvement of 22% ($p < 0,001$) at the quick-Dash, of 20% ($p < 0,001$) at the Constant-Murley, and of 32% ($p < 0.001$) at the VAS. The II group reported a similar improvement of 20% ($p < 0,001$) at the quick-Dash, 19% ($p < 0,001$) at the Constant-Murley, and of 20% ($p < 0.001$) at the VAS. Discussion: In I group Quick-DASH and VAS results improved until T2; Constant's values shows a progressive positive trend until T3. Differently after deep Hyperthermia Quick-DASH values show a worsening in the scores between T1-T3; VAS and Constant results show a constant improvement. Conclusion: Both treatment shows improvements in rotator cuff-tendinopathy. Subjective results last longer in first group. Since deep Hyperthermia has different drawbacks other than Cortisone injections, deep Hyperthermia merits further scientific investigation as a treatment modality for patients with shoulder pain. References: VAN DER WINDT et al (1998) Effectiveness of corticosteroid injections versus physiotherapy for treatment of painful stiff shoulder in primary care. British Medical J. 317:1292-96. GIOMBINI et al (2006) Short-term effectiveness of hyperthermia for supraspinatus tendinopathy in athletes: a short-term randomized controlled study. Am J Sports Med. 34:1247-53.

Abstract No.: OP1226

Abstract Title: CLINICAL CORRELATIONS BETWEEN LUMBAR SUPERFICIAL VEINS AND BATSON'S EPIDURAL PLEXUS CONGESTION IN CHRONIC LOW BACK PAIN

Authors(s): Foti C, Simeoni K, Monticone M

Presenting author: Foti C

Institution: Tor Vergata University, Rome - Italy

ABSTRACT: Batson's epidural venous plexus plays a crucial role for the generation of vascular back pain, in particular in those conditions characterized by venous congestion, such as heart failure or pregnancy. Except some rudimental cuspids, the vertebral venous system is considered to be a valveless anastomotic system; as a result, the blood is supposed to flow in either direction depending on changes of cardiovascular conditions during the day. Within the narrow boundaries of the neural canal, the epidural veins can therefore get congested, inducing low back pain. The aim of this case report was to highlight a correlation between lumbar superficial veins in patients with chronic low back pain and epidural deep venous plexus congestion. The patients selected underwent a morphologic examination of venous epidural plexus (included its connections with lumbar superficial blood vessels) through a 3D dynamic contrast-enhanced Magnetic Resonance Angiography. The Authors found two different radiological behaviours: total and partial congestion of the vertebral deep venous system. Clinical consequences were discussed and therapeutic strategies were suggested.

Abstract No.: OP1234

Abstract Title: CAUSAL CONNECTION BETWEEN FRACTURE RISK, LENGTH OF MENOPAUSE AND T SCORE – HALLMARKS IN OSTEOPOROSIS PREVENTION

Authors(s): B.Vuković-Janković, S.Janković, Č.Vučetić, M.Janković,

Presenting author: B.Vuković

Institution: Republic fund PIO, Beograd, Indija - Serbia

ABSTRACT: Osteoporosis is a bone disease characterised by structural deterioration of bone tissue and loss of bone density over time. Osteoporosis is a potentially crippling disease because it is commonly accompanied by bone fractures which present a significant cause of disability and even death in osteoporosis patients. Fracture risk increases as bone density decreases. In women, oestrogen loss after menopause is associated with rapid resorption and loss of bone density. Osteoporosis can be prevented by making sure you get enough calcium and vitamin D, which are essential. The prevention of the secondary consequences of osteoporosis was the topic we addressed in this paper. In order to achieve the desired goal we had to evaluate and to establish connection between bone density (T score), number of fractures, length of menopause, patient age and preventive measures (dietary supplements/drugs and physicorehabilitational procedures) of 147 women in this open clinical study, during 18 months of observation. Bone density was measured on the Lunar DPX apparatus for osteodensitometry on TH 11-L4 level, at the beginning and at the end of observation. After summarising the results we found out that there was a statistically significant connection between bone density, age, length of menopause and the number of bone fractures. There is a statistically significant difference between patients which had an adequate intake of dietary supplements/drugs along with adequate physicorehabilitational procedures and those which didn't have regular and adequate therapy in bone loss- osteoporosis(T score) and bone fracture risk. If a fracture appears due primarily to bone loss, timely diagnosis and preventive measures/treatment will stop this loss or increase bone mass at the relevant site, which is essential, and that our task.

Abstract No.: OP1241

Abstract Title: **SHOULDER CALCIFICATION PATHOLOGY: ECHOGRAPHIC DISAPPEARANCE OF THE CALCIFICATION DUE TO ACUPUNCTURE AND CO2 LASER COMBINED TREATMENT**

Authors(s): Tramontana A. MD, Nigito C. MD, Cassarino S. MD and Foti C. MD

Presenting author: Tramontana Alfonso

Institution: Physical Rehabilitation Medicine Tor Vergata University, Reggio Calabria - Italy

ABSTRACT: Introduction: The acupuncture treatment was shown to provide for analgesic and therapeutic effects. Aim of the study: The purpose of this study was to investigate the effects of acupuncture and CO2 laser Material and methods: We performed a single blind study. 30 patients (15 female mean age 63; 15 male mean age 54) suffering by calcific tendinitis participated in this study. The diagnosis of calcific tendinitis was established by analysis of standard radiographs and ultrasonograms of the shoulder. Patients suffered by systemic diseases associated with an increased risk of calcification, dermatologic diseases, neoplastic diseases, cardiovascular diseases, pregnancy or pace-maker was excluded. The patients were assessed using VAS scale and the Constant scale. The treatment consists in 4 sessions (2 sessions per week) of 50 minute according with the following program: 20 minutes with needle inserted, 10 minutes with laser co2 stimulation, 20 minutes with electroacupuncture. Conclusion: The results seems indicate that acupuncture and CO2 laser treatments could contribute to reduce pain and improve ROM in a first stage of chronic shoulder pain in rotator cuff tendinitis. Gentili S.;Rocco A;Siri E;Ljoka C;Sciarra T;Giordani L;Foti C; "Gli applicatori induttivi ad onde corte nel trattamento ipertermico riabilitativo della spalla dolorosa" Atti del XXXI congresso Nazionale SIMFER- Verona 2003 Uhthof HF. Calcifying tendinitis. Ann Chir Gynaecol 1999; 85:111-5 Chen CJ, Yu HS 2003 Acupuncture, electrostimulation, and reflex therapy in dermatology. Dermatol Ther 16(2):87-92)

Abstract No.: OP1245

Abstract Title: NAVIGATED BRAIN STIMULATION IN
NEUROREHABILITATION

Authors(s): Baydova T, Ivanov V, Sidiyakina I, Shapovalenko T, Lyadov K

Presenting author: Baydova Tatiana

Institution: FSI Medical and Rehabilitation Centre, Moscow - Russia

ABSTRACT: Introduction: the recent change of treatment paradigm includes more intensive rehabilitation procedures in patients after stroke and brain injury. A central feature of navigated brain stimulation (NBS) is the capability to show the intracranial electric field superimposed on the patient's anatomical MR images. Methods: NBS is designed for focused non-invasive stimulation of the human brain. The main objective of the NBS is to combine precise 3D localization with magnetic stimulation and thus provide tools for image-guided stimulation. Visualization of the cortex with the stimulating field in 3D offers interactive ways to target the stimuli to selected positions and to maintain stimulation at the right spot. The NBS system utilizes patient's MR-images in generating an accurate 3D-model of the actual head. This 3D-model, when peeled, reveals the anatomical structures of the brain. Motor-evoked potentials are measuring from these given stimuli. Results: NBS results are presented as maps, showing the cortical representation areas of individual muscles in detail. Conclusion: NBS can be used to guide repetitive TMS (r-TMS) for diagnostics and therapy. Cortical mapping with NBS has been successfully applied in cases of partial and complete paresis. NBS has also been used to map functional reorganization of the motor cortex. NBS has all possibilities to study and contribution to our understanding of functional changes in the motor cortices of the intact and lesioned hemispheres after stroke, brain injury and other neurological disorders.

Abstract No.: OP1246

Abstract Title: NEW APPROACHES OF REHABILITATION OF PATIENTS WITH NEUROGENIC DETRUSOR OVER ACTIVITY

Authors(s): Rozhnevskaya E, Rudakov B, Shapovalenko T, Lyadov K

Presenting author: Rozhnevskaya E

Institution: FSI Medical and Rehabilitation Centre, Moscow – Russia

ABSTRACT: AIM: To evaluate the efficacy of botulinum toxin type A separately and in combination with the method of impulse electrotherapy of bladder. Materials and methods: A total of 18 patients (12 men) aged from 18 to 36 years with neurogenic detrusor over activity due to spinal cord injury underwent urological examination, ultrasound of the urinary system and complete urodynamic study. Data bladder diary, IPSS scale and quality of life questionnaire were assessed. First group (10 patients) was injected intravesical botulinum toxin type A (Lantox). Second group (8 patients) was carried out impulse current of the bladder with the amperage of 15-25 mA, frequency of 20 Hz, pulse duration 320 ms before Lantox injection. Treatment consisted of 15 procedures, duration of 20 minutes. Results: Treatment efficacy was assessed after 1 month. In the first group - IPSS score decreased from 20.2 to 14; frequency of urination decreased from 14,6 to 9,8 times a day; urgency episodes - from 12,7 to 6,7 per day; cystometric capacity increased from 136 6 to 255.4 ml. Maximal detrusor pressure decreased from 85,6 to 48,2 cm H₂O. In the second group, average IPSS decreased from 19,5 to 11,6; frequency of urination decreased from 13,5 to 5,9; urgency episodes -from 11,6 to 4,7 per day; cystometric capacity increased from 145 5 to 308.5 ml. Maximal detrusor pressure reduced from 92.1 to 43.4 cm H₂O. Conclusions: Combination of electrotherapy and intradetrusor Lantox injection is a more effective method for recovery urodynamics in neurological patients.

Abstract No.: OP1247

Abstract Title: REHABILITATION OF PATIENTS AFTER STROKE ON DIFFERENT STAGES OF TREATMENT

Authors(s): Sidyakina I, Isaeva T, Ivanov V, Shapovalenko T, Lyadov K

Presenting author: Sidyakina I

Institution: FSI Medical and Rehabilitation Centre, Moscow – Russia

ABSTRACT: Introduction: Among all diseases, stroke holds the leading position as a cause of death and primary incapacitating, and that is the reason of a high medical and social importance of this problem. Accordingly, development of standards rehabilitation of patients on different stages of treatment, starting from the first twenty-four hours after stroke, seems extremely important. It is necessary to differentiate the rehabilitation program according to the somatic state of the patient and his consciousness. Methods: In our studies we developed criteria of intensification rehabilitation program in different period of stroke. From the first 24-hours after stroke begins minimal rehabilitation program: regulation of body position, setting of paretic limbs, classical massage of paretic hand, passive therapeutic exercises, drainage massage of thorax, neuromuscular stimulation of distal paretic hand muscles. Next steps of rehabilitation includes: sitting, verticalisation on “Erigo” device, cyclic training for lower extremities on “Motomed” trainer, mechano (vibro) stimulation of foot support points in cyclogram of gait mode, throat muscles stimulation (brainstem stroke), training with neuropsychologist and speech therapist. Results: Rehabilitation is contraindicated to very severe patients: in shock of various genesis, atonic coma (less than 4 scores according to the Glasgow coma scale), with stroke heaviness due to NIHSS more than 36 scores, raising dislocational symptom demanding resuscitation, in case of urgent surgery necessity.

Abstract No.: OP1251

Abstract Title: EFFECTIVENESS OF "ARMEO"- TRAINING IN A COMPLEX PROGRAM OF REHABILITATION IN PATIENTS WITH POST-STROKE SPASTICITY IN THE UPPER LIMB

Authors(s): Koneva E, Makarova M, Albegova A, Sidiyakina I, Khatkova S, Shapovalenko T, Liadov K

Presenting author: Koneva Elisaveta

Institution: Medical and Rehabilitation Center, Moscow - Russia

ABSTRACT: Introduction: We studied the feasibility of botulotoxynotherapy (BTT) in conjunction with rehabilitation treatment (RT), including functional training (FT) of paretic arm by "Armeo" in patients with post-stroke spasticity (PSS). Materials and methods: We observed 51 post-stroke patients, aged from 38 to 79 years. All patients suffered from PSS with the level of paresis in the hand at 0-2,0 points (MAS). All patients were randomized into three groups: in the first group (I) 14 patients got BTT and RT that included: gymnastics, mechanotherapy, electromyostimulation, reflexotherapy. Second group (II) (n = 18) received BTT, RT, FT by "Armeo". The third group (III) (n = 19) received BTT only. Results: MAS Test: I group, the initial 0,0 [0, 2], after 5 weeks of 4,5 [4, 6] *, 8 months 3,0 [2, 4] ^. II group: 2,0 [0, 12], 11.0 [6, 18] * and 8.0 [5, 16] ^. III group: 0,0 [0, 10], 3.0 [2, 12] * and 2.0 [1, 10] ^. Ashworth Scale: I group: baseline 4.0 [3, 4], after 5 weeks of 2,0 [1, 2] *, 8 months 3,0 [2, 3] ^. II group: 3,5 [3, 4], 2.0 [1, 2] * and 3,0 [2, 3] ^. III group: 4,0 [3, 4], 3,0 [3, 3] * and 3,0 [3, 4] ^. Testing on a scale of FIM: I: baseline 9.0 [9, 26], after 5 weeks of starting treatment 16.0 [13, 30] *, 8 months 12,0 [11, 28] ^. II: 9, 0 [9, 27], 22.0 [22, 36] * and 18.5 [18, 34] ^ accordingly. III: 9,0 [9, 26], 11.0 [10, 28] * and 10 , 0 [9, 26] ^, respectively. In this case: *- p <0,001, between the baseline and indicators after 5 weeks of starting treatment, ^ p <0,001, between the baseline and indicators in 8 months from start of treatment. Conclusion: "Armeo" training allows to optimize post-stroke hand spasticity therapy.

Abstract No.: OP1252

Abstract Title: MODERN METHODS OF REHABILITATION OF ERECTILE DYSFUNCTION

Authors(s): Rudakov B, Rozhnevskaya E, Shapovalenko T, Lyadov K

Presenting author: Rudakov Boris

Institution: FSI Medical and Rehabilitation Centre, Moscow - Russia

ABSTRACT: AIM is a comprehensive evaluation of combined therapy of patients with erectile dysfunction (ED) of varying severity. Materials and Methods: We studied 485 patients. An organic ED was diagnosed in 371 patients, psychogenic ED - in 114 cases. Urological and Doppler penis examination, sexological testing (IIED), the study of sex hormones level, night tumescencia (NEVA, Canada) were performed in all patients. Due to study results patients were divided into 3 groups: group 1 - patients with low testosterone level (n=88), group 2- patients with ED of vascular origin (n=119), group 3 -patients with ED of congestive prostatitis (n=164). In the 1 group, treatment included: rectal pneumovibromassage, vacuum decompression of penis, hydroelectrophoresis of penis and segmental areas. Patients of the 2 group carried out external counterpulsation, vacuum decompression of penis, electrical stimulation of spinal centres of erection. In the 3 group: there was a complex of simultaneous vacuum decompression of penis and rectal pneumovibromassage, and hydrotherapy in fitobarrel, filled with special herbal. Those with psychogenic ED received pantotreatment complex, included: rectal application of pantovegin, bath with deer blood, barrels, brewed on the basis of deer antlers. The duration of treatment course in all cases was 10 days. Results: The post course survey showed an increase of IIED points in all groups, improvement in the quality of erections, increasing of orgasmic sensations, ejaculation and libido. Conclusions: A complex therapy of ED is efficient and can be recommended for patients with organic and psychogenic erectile dysfunction.

Abstract No.: OP1253

Abstract Title: COMPLEX TREATMENT OF PATIENTS WITH BACK PAIN SYNDROME

Authors(s): Shapovalenko T, Khakimov C, Makarova M, Karpakov A, Lyadov K

Presenting author: Shapovalenko Tatyana

Institution: FSI Medical and Rehabilitation Center, Moscow - Russia

ABSTRACT: Introduction. The content of rehabilitation programme for patients with back pain depends on the clinic, pathobiomechanical disorders and addresses the pain. Materials and Methods: In 2009 2334 patients with back pain (MRI confirmed) dominated in cervicothorax (n = 601) and lumbosciadica (n = 376) region were treated. Outpatient treatment got 2032 patients, 302 stayed in the hospital. Group 1 included 1977 patients aged 20 - 60 years had complex of manual and hardware techniques: traction (Activetrac3D USA, Tractaiser J, Extentrac USA), mobilization and vacuum therapy (LPG Fr), electrical stimulation of deep muscles (Polarskine J). Shock-wave therapy (SWT G) with cryo-support (Cryojet G) and intratissue electrostimulation (???-01, RU) were added according to testimony. The course consisted of 10 treatments. Group 2 consists of patients aged over 60 years (n= 357) which had contraindications to the manual, traction and intensive mobilizes influences. These patients received a course of pharmacopuncture and hirudotherapy ? 10-15 on the scheme. Dynamics of pain syndrome was assessed by VAS, strength and symmetry of trunk muscles activity - according to Tergumed (G) data. Results: Good results were achieved in 1830 (78,4%) patients, satisfactory - in 424 (18,2%) patients, unsatisfactory - in 80 (3.4%) patients. Conclusions: To achieve positive results in therapy of patients with back pain it is necessary to influence at the various links of the pathogenesis and to consider not only clinics, but patient's age.

Abstract No.: OP1254

Abstract Title: CHANGES IN CIRCULATION AND MUSCLE TONE IN SPINAL CORD INJURED PATIENTS DURING LOKOMAT-TRAINING

Authors(s): Makarova M, Koneva E, Shapovalenko T, Lyadov K

Presenting author: Makarova M

Institution: FSI Medical and Rehabilitation Centre, Moscow – Russia

ABSTRACT: Introduction. Skeletal muscle atrophy with circulatory disorders make difficulties to form training and walking rehabilitation in patients with SC I. The purpose was to study circulatory and biomechanical reactions in chronic SCI patients due to Lokomat-training. Materials and Methods. 41 patients with ASIA A, ASIA B SCI (C- level - 9 patients, Th- level -15 patients, Th12-L2 - level - 17 patients) from 19 to 35 years old had everyday 30 min Loko-training in a combination with the intensive rehabilitation. The walking protocol was: upload of body weight - 0-20%, speed variety from 1,2 to 1,8 km/h depended on level of spasticity and stretch reflex activity. Circulatory reactions were controlled by volume compression oscillometry (APKO, RU), muscle tone in hip and shank by Myoton (Est) before and after 5th Loko-training. Results. Cardiac output increased in patients with C-level trauma (C) in 6,7%, Th-level (Th) in 9.7%, L-level (L) in 13,3%. Stroke volume increased at 10,5% in patients C, reduced at 10,9% in patients Th and soared up 25 % in patients L. Linear velocity of blood flow increased in 20 %, 6,2% and 20 % in patients C, Th and L respectively. Peripheral resistance index changed at 4,5%, 14,6% and 11,2% in patients C, Th and L respectively. The muscle tone reliably increased in gastrocnemius muscle only. Conclusions. Circulatory and muscle tone reactions in SCI patients greatly differed from the physiological after treadmill training. It is necessary to create Loko-training protocol considering their peculiarities.

Abstract No.: OP1255

Abstract Title: APPLICATION EXPERIENCE OF RESTORATION TREATMENT OF PATIENTS AFTER ARTHROSCOPIC ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

Authors(s): Tsvetkova E., Shapovalenko T., Liadov K.

Presenting author: Tsvetkova Eugenia

Institution: FSI Medical and Rehabilitation Centre, Moscow - Russia

ABSTRACT: Aim: to evaluate the efficiency of rehabilitation program in patients after arthroscopic ACL reconstruction (AACL R). Materials and Methods: From January 2009 till May 2010 were cured 283 patients (187male) including 94 athletes, aged 20-50 years. Pre and post treatment examination: X-ray analysis, MRI of affected knee, stabilization tests, meniscus tests, valgus/varus tests, measuring of crus mobility with arthrometer KT-1000, goniometry, electrophysiological tests. We point out the following phases of rehabilitation of patients AACL R: 1 phase - early postoperative period (2-14 days after surgery): magnetotherapy, laser therapy, lymphodrainage, cryotherapy, massage in electrostatic field, exercises, apparatus passive motion. 2 phase - late postoperative period (15 days - 8 weeks): stimulation magnetotherapy, electromiostimulation (stable), phonophoresis, hydromassage, intravenous laser or ozone therapy, massage, muscular testing and training in «Biodex», strengthening and cyclical exercises. 3 phase - training of physical merit (weeks 8-12): electromiostimulation (while walking), pelotherapy, training in «Biodex», strengthening and cyclical exercises, hydrokinesotherapy, balance training in Huber, coordination exercises in Gyrotonik. 4 phase - training period (for athletes only, weeks 12-16): restoration of special motor skill according to sports specialization. Results: By the 20-24 week, 97% of patients and 80% 75 athletes successfully completed the rehabilitation and started to household and sporting loads completely. Conclusion: Early, complex and phase rehabilitation is a guarantee to functional restoration of patients after AACL R.

Abstract No.: OP1256

Abstract Title: NON-INVASIVE CARDIAC REVASCULARIZATION - APPLICATION OF COMBINED METHODS OF THERAPEUTIC ANGIOGENESIS

Authors(s): Petukhova V., Shapovalenko T., Lyadov K.

Presenting author: Petukhova Victoriya

Institution: FSI Medical and Rehabilitation Centre, Moscow - Russia

ABSTRACT: Introduction: Therapeutic angiogenesis including cardiac shockwave therapy (CSWT) and external counter pulsation (EECP) are recommended in patients with recurrent angina after myocardial revascularization and with hibernation myocardium caused by post infarction cardio sclerosis. The aim of our study was to examine the rehabilitation effects of combined application of EESP and CSWT in HF patients. Methods and subjects We studied 24 patients (17 men and 8 women, average age $61,8 \pm 2,8$). All patients had myocardial infarction anamnesis. The basic group consists of 8 patients, treated by EECP (35 hours sessions, 6 days a week) and CSWT (9 sessions, 3 times a week every two week) during 7 weeks. Pulse wave was applied to myocardial segments near post-infarction focus. Patients (9 persons) of the first control group received treatment only by EECP, patients (7 persons) of the second control group - only by CSWT. Echocardiography (EchoCG), ergospirometry (ESM) and myocardial scintigraphy were made before and after course. Results: Ejection fraction LV (by EchoCG) increased by 9,9%, 8,8%, 7,4%, end-diastolic diameter LV decreased by 4,0%, 3,3%, 2,8%, maximal oxygen uptake (by ESM) increased by 23,2%, 18,4%, 11,8%, maximal oxygen pulse (oxygen uptake to heart rate ratio) increased 15,4%, 12,8%, 11,2% in the basic, the first and second control groups accordingly. Conclusion: Our experience showed that combined application could be recommended as a highly secure and effective method of treatment and rehabilitation of patients with coronary artery disease.

Abstract No.: OP1257

Abstract Title: MODERN APPROACHES TO REHABILITATION OF PATIENTS WITH A MINIMUM LEVEL OF CONSCIOUSNESS

Authors(s): Sidyakina I., Isaeva T., Shapovalenko T., Lyadov K.

Presenting author: Sidyakina Irina

Institution: FSI Medical and Rehabilitation Center, Moscow - Russia

ABSTRACT: Introduction. It remains virtually unexplored mechanism for recovery of consciousness, the question of predicting the time to regain awareness, methods of treatment. Materials and methods: We observed 12 patients with akinetic mutism according to relevant international criteria for the diagnosis. The level of consciousness on GCS was 9-11 points. Severe trauma brain injury (TBI) was the cause in 8 patients, hemispheric brainstem stroke (HBS) in 3 cases and hypoxic brain (HB) in 1 patient. All patients underwent neuroimaging studies, study of evoked potentials, transcranial magnetic stimulation and electroencephalography during multisensory stimulation in order to detect a meaningful stimulus. A comprehensive rehabilitation program included stimulation with the stimulus that was defined as a meaningful. Results: At the end of 4 months in 5 patients after TBI strong emotional reaction on the detected stimulus appeared, GCS raised to 12-13 points, the appearance of sensory component (peak N2) in the performance of cognitive EP was noted, as well as more expressive alpha rhythm while EEG monitoring. In 2 patients after HBS at the end of 5 months of observation appeared ability to fix and keep eyes on objects, GCS increased to 12-13 points, bioelectrical activity according to EEG changed in the direction of increasing the percentage of faster rhythms. Conclusion: The positive results are a cause for further study and inclusion of these programs into a comprehensive rehabilitation of this group of patients.

Abstract No.: OP1259

Abstract Title: DIFFERENTIAL REHABILITATION APPROACH OF SCI PATIENTS

Authors(s): Shapovalenko T, Lyadov K, Sidyakina I, Makarova M

Presenting author: Shapovalenko T

Institution: FSI Medical and Rehabilitation Centre, Moscow – Russia

ABSTRACT: Introduction. Annually 380-400 patients with spinal cord injury (SCI) that constitute about 35% of all patients with neurological disorders get a treatment in our clinic. We use classification accepted in Russia: acute period -3 days, early period - 3 – 4 weeks, intermediate -1 - 3 months, residual - later than 3 month. According to the level of trauma we divided our patients into 2 groups: 1 with high trauma- higher than Th2 vertebra; 2 with low trauma –below Th2 vertebra. Material and Methods. In acute and early periods the main purpose is to support vital and skeleto-muscular functions especially in patients from the1 group and with complete SCI. We use conventional physical rehabilitation added by FES, medical TMS, EP, verticalisation on Erigo with subsequent Lokomat training. Because of severity of trauma patients from the 1 group begin the complete rehabilitation after 2 months. In the 2 group rehabilitation starts in the acute period in maximum active regime, in order to obtain independency to 14-21 days after injury. During later periods of injury we use all accessible manual methods and devices for maintenance and support of physical activity. The patient is engaged in the center 6-7 hours a day in order to provide maximum physiological stimulus in the damaged systems. Course is calculated for 21 day with possible prolongation under indications. We control content of rehabilitation program according to MRI, TMS, EP, urodynamics function data and period of disease. Results. Intensive rehabilitation gives the opportunity to decrease complications in acute period and to extend the functional abilities of SCI patients.

Abstract No.: OP1261

Abstract Title: URINARY AND ANAL (IN) CONTINENCE: A REVIEW OF INPATIENTS OF A REHABILITATION CENTRE, DURING TWO YEARS

Authors(s): Jorge Láins, Anabela Pereira, Ines Campos, Irina Peixoto, Pedro Figueiredo, Joao Branco, Maria Ramos, Marisa Violante, Susana Santos, Joana Almeida, Ines Lucas

Presenting author: Pedro Figueiredo

Institution: Hospitais da Universidade de Coimbra e Centro de Medicina de Reabilitacao da Regiao Centro
Rovisco Pais, Tocha – Portugal

ABSTRACT: Urinary and Anal (In) Continence: a Review of Inpatients of a Rehabilitation Centre, During Two Years. Jorge Lains¹, Anabela Pereira¹, Ines Campos², Irina Peixoto³, Pedro Figueiredo², Joao Branco², Maria Ramos⁴, Marisa Violante¹, Susana Santos⁴, Joana Almeida¹, Ines Lucas¹ 1Centro de Medicina de Reabilitacao da Regiao Centro - Rovisco Pais, Portugal 2Hospitais da Universidade de Coimbra, Portugal 3Hospital de Sao Teotonio, Portugal 4Centro Hospitalar de Coimbra, Portugal Introduction The expectancy and quality of life of patients with injuries to the spinal cord (SCI) greatly depend on the urinary and bowel conditions [1, 2]. Other neurologic conditions such as stroke, traumatic brain injury, and brain tumours may also cause abnormal bowel function [3]. Managing SCI bowel and urinary function is complex, time consuming and remains conservative [4]. Objective To evaluate the outcomes of bowel and urinary management routine during the inpatient in a Rehabilitation Centre. Material/Methods Retrospective analysis and data collection from clinical records of patients admitted during 2008 and 2009. Results The sample consists of 274 patients, 69% males with a mean age of 50.8±17.2 years. Mean average length of stay was 105.9±121.1 days and the major impairment group codes were: 42.0% spinal cord dysfunction and 31.4% stroke. Most patients had a vesical catheter at admission (46.7%), but the majority of them were continent at discharge (47.8%); 51.5% of the patients had voluntary urinations at admission and 66.4% at discharge. The others used a vesical catheter, continuously or intermittently. Regarding fecal losses, most patients were continent at admission (43.4%) and at discharge (52.9%). FIM at admission and discharge: 3.9±2.7 and 4.8±2.5 (40.1% scored 1 and 41.6% scored 7) for bladder; 4.0±2.8 and 4.8±2.6 (39.4% scored 1 and 43.8% scored 7) for bowel. Data at admission and at discharge were statistically different (p<0.01). Discussion/Conclusion All the incontinent patients did bladder and bowel sphincter management. The sphincter control improved. Yet, there are a clinical significant percentage of patients incontinent at discharge and more and better are needed to ameliorate this situation. Bladder control has a big impact in survival, and bowel control in quality of life.

Abstract No.: OP1262

Abstract Title: CROSS-CORRELATION BETWEEN PATIENT SYMPTOMS
CLINICAL EXAMINATION AND ELECTROMYOGRAPHY (EMG)
RECORDS FOR CARPAL TUNNEL SYNDROME (C.T.S).

Authors(s): Psillaki D, Tragoulias V, Ananidis N, Coliadimas M, Georgiadis T,
Stamatakis G, Groumas N

Presenting author: Despoina Psillaki

Institution: 1st department of PRM National Rehabilitation Centre, Athens - Greece

ABSTRACT: Introduction: Any condition that exerts pressure on the median nerve at the wrist can cause carpal tunnel syndrome. Aim of our study was to register and compare the results between patient symptoms, clinical examination and EMG data. Subjects and Method: 312 patients 87 men and 223 women aged from 22 to 65 years were examined during the period 2008-2010. Were excluded patients with trauma or surgery intervention on the upper limbs, arthritis, hypothyroidism, or systemic diseases that can cause peripheral neuropathy. All patients were clinically assessed, symptoms were registered and (EMG) was performed. We divided patients in 2 groups. The 1st group had typical clinical presentation and the 2nd group with non-typical symptoms. Results: From the first group 95 pz, CTS was neurophysiologically confirmed (nerve sensory latency >3.2 msec and nerve motor latency > 4.2 msec) in 77 subjects (81%), instead 18 subjects (18,9%) , had a normal EMG. From the second group: 128 pz, positive HMG findings had 40 pz (32%) the rest 88 (78%) had clinical symptoms due to other causes. Main reported symptoms were: presence of numbness, finger pain. Conclusion: Not always the patients with CTS symptoms who referred to us from their family or orthopaedic doctor has positive EMG findings that confirm the CTS. No single test or symptom is definitive for diagnosis of carpal tunnel syndrome. Instead, the person's complaints clinical examination and the EMG findings, together lead to its diagnosis.

Abstract No.: OP1264

Abstract Title: UPPER LIMB COMPUTER AIDED MEASUREMENT TECHNIQUE IN POST-BREAST CANCER LYMPHOEDEMA

Authors(s): Trombetta C, Ljoka C, Ciocchetti E, Di Cori S, Travisi Tiziana and Foti C

Presenting author: Chiara Trombetta

Institution: Tor Vergata University, Rome - Italy

ABSTRACT: Introduction Lymphoedema can be a side effect of cancer treatment. Even though several methods for assessing lymphoedema are used in clinical practice, quantification of lymphoedema has been problematic. The aim of the study is to determine the objectivity and repeatability of the computer aided measurement laser (CAML) technique Methods and Subjects CAML technique is based on computer aided design (CAD) methods and requires an infrared laser scanner. Measurements are scanned and the information describing size and shape of the limb allows to design the model by using the CAD software. The objectivity and repeatability will be established in the beginning using a phantom. Consequently a group of subjects presenting post-breast cancer lymphoedema will be evaluated using as a control the contralateral limb. Discussion In clinical settings CAML technique is easy to perform, rapid and it provides meaningful data for assessing lymphoedema. Conclusions Future research will include a comparison of upper limb CAML technique between healthy subjects and patients with known lymphoedema. References Ridner SH, Montgomery LD, Armer JM, and Stewart BR et al Comparison of upper limb volume measurement techniques between healthy volunteers and individuals with known lymphedema, Lymphology 2007 Armer JM, Stewart BR A comparison of four diagnostic criteria for lymphedema in a post-breast cancer population, Lymphat Res Biol 2005.

Abstract No.: OP1265

Abstract Title: OSTEOPOROSIS AND EXERCISE

Authors(s): Farzaneh Torkan, Laleh Hakemi

Presenting author: Farzaneh Torkan

Institution: NIOC Hospital, Tehran – Iran

ABSTRACT: Introduction: Osteoporosis is one of the most common metabolic disorders and the most common metabolic bone disease. Weight Bearing exercises and a good nutrition and adequacy of vitamin D are important in attaining and maintaining bone mass. The incidence of osteoporosis is increasing worldwide and especially in Asia and the osteoporotic patient can take benefit of individually programmed exercises to minimize fractures. Because of proposed dietary deficiencies of calcium and vitamin D and the special wear of the Moslem Iranian women, a thorough study and focusing on preventive approaches are mandatory in Iran. Methods: More than 30 related studies performed in Iran in the recent 5 years were reviewed. Results: About 50% of men and 70% of women with age 50 or older suffer from osteoporosis or osteopenia in Iran. In postmenopausal women, the prevalence of osteoporosis, osteopenia, and normal bone density is 41.8%, 50%, and 8.2% respectively. After menopause, bone loss will become more accelerated and the frequency of osteoporosis increases and the frequency of osteopenia decreases with age. The mean age and the mean postmenopausal duration of patients with osteoporosis are significantly higher than patients without osteoporosis. Menopausal duration of over 10 years is associated with 5.6 fold increased risk of osteoporosis. Osteoporosis is more frequent (61.5%) in the postmenopausal women with the symptom of low back pain. The prevalence of osteoporosis and osteopenia in men more than 50 years of age was shown to be 3.9% and 50% respectively. The prevalence of osteoporosis at L2-L4 region was 16.7% in men and 56.3% in women. The prevalence of osteopenia at L2-L4 region was 38.9% in men and 25% in women. Peak bone mass at L2-L4 region was reached at the age 29.3 years in women. Means of BMD in subjects aged 20-45 years (Peak Bone Mass), at lumbar spine and the hip were: for females 1.20 ± 0.013 and 0.994 ± 0.13 and for males 1.18 ± 0.14 and $1.05 \pm 0.16 \text{ gr/cm}^2$ respectively. Peak bone mass in Iranian population seems to be 3.9% higher than Japanese and 5.6% lower than American population. Vitamin D and calcium intake, tea consumption, serum Zn, consumption of soy proteins, physical activity, BMI, and education level have a positive relation to bone mineral density and smoking, renal stone history, hyperhomocysteinemia as a result of folate deficiency, diabetes mellitus, hyperthyroidism, thalassemia, hemodialysis, PTH levels, and glucocorticoid use have a negative relation to bone mineral density. Disabled veterans show a marked reduction of bone mass in the neck of femur. Prevalence of vitamin D deficiency is significant in Iran, and one study showed that 80% of the population has at least mild vitamin deficiency. Hip fracture is the most serious consequence of osteoporosis. The estimated incidence of osteoporotic fractures in the year 2001 in Iranian women was 417 fractures in spine, 4337 fractures in femur, and 1806 fractures in the forearm. Using DALY's formula, the disease burden related to osteoporosis in the year 2001 in Iran was estimated to be 36761 years for the population, 17619 years attributed to females and 19143 years attributed to males.

Abstract No.: OP1265 (continuation)

Abstract Title: OSTEOPOROSIS AND EXERCISE

Conclusion: Osteoporosis is a major health problem in Iran and preventive measures as for education, appropriate nutrition, sun exposure, and weight bearing physical exercises should be encouraged from childhood to minimize this condition. In addition, prevention and early treatment of female athlete triad is of utmost importance and every team physician and coaches should be aware of the risk factors and possibility of the condition. In addition, in osteoporotic patient, individualized program can minimize fractures and improve physical fitness. Key words: Osteoporosis, Exercise, Iran

Abstract No.: OP1269

Abstract Title: METHODS OF THALASSO-THERAPY IN TREATING PATIENTS WITH METABOLIC SYNDROME

Authors(s): Kuzovkova E.D., Badtieva V.A., Turova E.A., Almyasheva M.I.

Presenting author: Kuzovkova E.D

Institution: The Russian Scientific Centre of Restorative and Resort Medicine, Moscow - Russia

ABSTRACT: Metabolic syndrome attracts close attention of physicians in recent years, and this is not only due to the high spread of the disease - up to 20-40% of the population, but also the high risk of cardio - vascular diseases related to it: hypertension, coronary heart disease and chronic heart failure. Over the past decade, Russia has experienced rapid development of high-tech SPA industry (thalasso-therapy) using different types of body wraps (seaweed wraps, mud-cure, etc.) that are used for the treatment and prevention of obesity, panniculopathy. The aim of the study was to evaluate the effectiveness of modern SPA-technologies – seaweed body wraps on abdominal area of patients with metabolic syndrome. Under observation there were 40 patients with metabolic syndrome who have abdominal obesity (waist circumference over 80 sm for women and more than 94 sm for men) and hypertension stage I-II 1-2 degrees, dyslipidemia, impaired glucose tolerance. The average age of patients was 29 years (from 25 to 64 years). The duration of the disease of half of patients (46.1%) was 5 years and over, the rest - from several months to 4 years, mostly (in 24.8% of cases) 1-2 years. All the patients were divided into 2 groups: Group 1 - (20 patients) was treated with warm wraps with homogenized gel made of brown seaweed "Lamifaren" (Russia) on the abdominal area, lasting 40 minutes each day, and got nutrition correction. Group 2-(20 patients) was the control group and got nutrition correction.

All the patients went through the clinical examination, ambulatory blood pressure monitoring, electrocardiogram - a study, laser Doppler flowmetry (LDF), fasting glucose was measured, coagulogram, lipid profile. As a result of treatment a positive dynamics was noted in 86% of cases. WV/TV in group 1 was 112.2% of the norm (after the course of procedures it was minus 12%), in the second group it was 111,3% of the norm (after nutrition correction it was minus 8%). The fasting plasma glucose level decreased from $5,67 \pm 0,17$ mmol / l and amounted to $(5,47 \pm 0,11$ mmol/l - Group 2, $5,24 \pm 0,15$ mmol / l in group 1); dynamics of changes in lipid profile (from $4,5 \pm 0,0026$ mmol / l) in the groups respectively (LDL $4,13 \pm 0,03$ mmol / l - 2 group, $4,07 \pm 0,02$ in group 1) at approximately the same dynamic level of cholesterol- $5,89 \pm 0,12$ mmol / l). According to BP monitoring there was the decrease of average SBP from $139,8 \pm 4,6$ mm Hg to $132 \pm 4,3$ in Group 2, to $130 \pm 3,8$ in group 1), downward trend of average DBP from $87,4 \pm 4,6$ mm Hg up to $86,3 \pm 5,1$ in Group 2, up to $85,3 \pm 2,3$ in group 1. There was a significant decrease in the hypertension time index: SBP HTI from $-39,2 \pm 4,5\%$ to $29,2 \pm 3,9$ in Group 2, up to $27,1 \pm 2,3$ in group 1), DBP HTI from- $44,7 \pm 5,3\%$ in two groups it was $43,4 \pm 2,8\%$). According to the dynamics of changes in the microcirculatory bed according to the LDF hyperemic type of microcirculation increased from $101 \pm 1,2\%$ to $150 \pm 3,5$ in group 1, in group 2 it rose to $135 \pm 3,0\%$, spastic type of microcirculation: reduction in the tone of arterioles was marked from $151 \pm 1,8\%$ to $129 \pm 0,21\%$ in group 1, and to $140 \pm 2,3$ in Group 2. Results of coagulation research: a tendency to hypercoagulation, hyperaggregation, protrombinovogo index increase went down from $95,67 \pm 3,15$ to $81,5 \pm 3,5$ in group 1, to $87,6 \pm 3,45$ in group 2).

Abstract No.: OP1269 (continuation)

Abstract Title: METHODS OF THALASSO-THERAPY IN TREATING PATIENTS WITH METABOLIC SYNDROME

Thus, a more pronounced effect of the first medical complex is associated with the positive effect of biologically active components of brown seaweeds, contributing to the improvement of microcirculation process, lymph drainage function, peripheral hemodynamics, which leads to a volume decrease of waist and hips, helping to reduce blood pressure, reducing the metabolic manifestations of metabolic syndrome.

Abstract No.: OP1273

Abstract Title: KNOWLEDGE, HEALTH BELIEFS AND ATTITUDES TOWARDS OSTEOPOROSIS – A PORTUGUESE WOMEN SURVEY

Authors(s): I Campos, JP Pinheiro, J Laíns

Presenting author: I Campos

Institution: SMFR - Hospitais Universidade Coimbra, Anadia - Portugal

ABSTRACT: Introduction: Osteoporosis is a dangerous disease and affects a large number of women; they should be aware of the disease, in order to adopt preventive behaviours. Aims: to evaluate the knowledge of a Portuguese women sample about risk factors and protective behaviours, beliefs and attitudes towards osteoporosis. Methods: Cross-sectional study with a sample of 304 Portuguese women with 18 or more years, using a questionnaire developed by the author. The questionnaire evaluated demographic data, knowledge and health beliefs towards osteoporosis, risk and protective factors and behaviours. Results: Mean age: 54.4 ± 15.14 years; 67.1% are menopausal; 12.5% had at least one fragility fracture; 7.89% didn't know osteoporosis' definition. Most considered osteoporosis a serious disease; 28.5% considered themselves with a medium probability to become osteoporotic. Main information sources: health professionals and the media. Prevention factors more often mentioned: calcium-rich food and regular exercise. Risk factors most mentioned: low calcium diet and menopause. 81.7% of women reported fractures as a possible consequence of the disease. There were no differences concerning knowledge of protective and risk factors among women with or without osteoporosis, pre or postmenopausal, with or without a family history of hip fracture and with or without a personal history of fragility fracture. There was a statistically significant association between "family history of hip fracture" and perceived severity and susceptibility to osteoporosis, which is not found in the group of women with a history of fragility fracture. Women, who reported calcium-rich food as a protective factor, did not ingest more calcium. Discussion: Women, even those at a major risk for developing the disease, have little knowledge about osteoporosis and knowledge does not always generate behaviour. The medical doctors, as the main transmitters of information, should be aware of the need to better inform and clarify their patients.

Abstract No.: OP1274

Abstract Title: CLINICAL DIAGNOSIS OF TARSAL TUNNEL SYNDROME IN FIBROMYALGIA PATIENTS

Authors(s): Evrim Karadag-Saygi, Beyhan Eren, Ozun Bayındır, Gulseren Akyuz

Presenting author: Evrim Karadag-Saygi

Institution: Marmara University School of Medicine, Department of Physical Medicine and Rehabilitation,
Istanbul - Turkey

ABSTRACT: Introduction: Although the main complaint is widespread pain in fibromyalgia (FM), paresthesias occur in up to 80% of patients. As paresthesia in the extremities is frequently seen in focal or general neuropathies, numbness and tingling can be confused with nerve entrapments. For this reason, these neuropathies may be overlooked or misdiagnosed in FM patients. The aim of this study was to evaluate the accuracy and reliability of examination-based clinical tests for diagnosis of TTS in FM patients. Method and subjects: Female patients admitted to our outpatient clinic were evaluated for inclusion into this study and all patients meeting the 1990 criteria of the American College of Rheumatology for FM were included. Members of the control group were selected from healthy female volunteers. The symptoms of pain and paresthesia in the plantar side of foot were accepted as early diagnostic criteria for TTS. Tarsal tincl's sign (TT), tibial nerve compression test (TCT) and dorsiflexion-eversion test (DET) were performed in both FMS and control groups. Results: A hundred patients with FM and 100 healthy volunteers, who were matched for age and body mass index, were included to the study. Fifty-seven percent of patients in FM group were suffering from pain and paresthesia in foot, however 5% was in control group ($p<0.01$). Although no significant difference was found between groups in Tinel's sign, dorsiflexion-eversion test ($p>0.05$), tibial nerve compression test, sensory and motor deficits were significantly higher in FM group ($p<0.01$). There was no significant difference between tincl's sign, tibial nerve compression and dorsiflexion-eversion tests in FM sub-groups (FM with or without foot complaints) ($p>0.05$). Significantly higher percentages of positive tincl's sign and dorsiflexion-eversion test were found in control subjects with complaints ($p<0.01$). Conclusion: As the clinical provocative tests for TTS are not sensitive in FMS patients, electrophysiological evaluations are recommended for the exact diagnosis.

Abstract No.: OP1276

Abstract Title: THE OFFSET OF MECHANICAL HOMEOSTASIS IN CEREBRAL PALSY

Authors(s): Mark Driscoll, Leonid Blyum

Presenting author: Mark Driscoll

Institution: Advanced Bio-Mechanical Rehabilitation, Montreal - Canada

ABSTRACT: The health of physiological tissue is governed by the continuous conversion of mechanical stimulus (stress) to bio-chemical response, a concept known as mechanical homeostasis. If this regulatory imperative becomes flawed, it may be detrimental, and consequently invoke or encourage the progression of various musculoskeletal disorders. This notion is corroborated by the quantification of altered function and irregular mechanical properties found within the articulations of such phenotypes as cerebral palsy. Although the divergence from healthy to irregular tissue behaviour is likely multifactorial, the presence of imbalanced mechanical properties may promote the concept of physiological stress shielding. Extrapolating upon the stress shielding phenomenon may allow inferences to be drawn with respect to the pathomechanisms of progressive disorders. Further, recognition of this association may also provide a new platform from which to interpret the impact of conventional treatments.

Abstract No.: OP1278

Abstract Title: **PROPRIOCEPTION IN MOTOR CONTROL REHABILITATION - A FREQUENTLY OVERLOOKED AND UNTREATED DEFICIT**

Authors(s): Andromachi Salacha, George Tzanos

Presenting author: Andromachi Salacha

Institution: General Hospital of Elefsis "Thriasio", Magoula-Attiki – Greece

ABSTRACT: Proprioceptive integrity (the ability to stabilize, hold position and maintain any movement at any time) can be impaired due to central or peripheral nervous system pathology or trauma. Proprioception depends on integrating different modalities of sensory information concerning one's own body as a moving agent in the environment, with the intracorporeal information provided by an internally generated sense of posture and movement (Trevarthen, 1986). Proprioception is an extremely complex phenomenon with two fully integrated aspects: non-conscious information (proprioceptive information -body schema) and a form of conscious awareness (proprioceptive awareness - body image). Recent research in the cognitive sciences and neurosciences suggests that perception, action and cognition seem to form a collective community. Perception and action are intimately linked, and cognition is firmly grounded on both of them. This study is a try to review recent scientific research data on the integration of different modalities of sensory information into the complex entity of proprioception and its consequences to motor control in patients with various proprioceptive impairments, to the reverse effect of located muscle weakness on proprioception reduction and injury predisposition. All this new scientific evidence can impact our rehabilitation strategies in motor control rehabilitation, incorporating the new concept of "proprioceptive training" during movement, postural and functional re-education of our patients.

Abstract No.: OP1282

Abstract Title: **GAIT ROBOT FOR THE REPETITIVE PRACTICE OF FLOOR WALKING AND STAIR ASCENDING AND DESCENDING IN NON-AMBULATORY PATIENTS**

Authors(s): A. Waldner^{1,2}, C Tomelleri¹, C Werner³, S Hesse³, G Giakas^{4,5}

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ABSTRACT: Introduction: Stair climbing up and down is an essential part of everyday's mobility. To enable wheelchair-dependent patients the repetitive practice of this task, the novel gait robot, G-EO-Systems has been designed. The present work introduces this newly lower limb muscle activation patterns of hemiparetic subjects during real and simulated floor walking, and during real and simulated stair climbing up by means of dynamic electromyography (EMG). A comparable muscle activation pattern between the real and simulated conditions should wipe out any concerns about the possible induction of a pathological gait pattern on the machine.

Methods: Six subacute stroke patients participated. The electromyographic activity of 7 selected lower limb muscles was detected on the affected side. The gait was analysed during the following four conditions: hemiparetic walking on the floor at self selected speed, simulated walking on the machine at comparable speed and cadence; stair climbing one flight at self-selected pace, and simulated stair climbing at comparable step rise and cadence.

Results: For the floor walking condition, the pattern of the thigh muscles was comparable during the real and simulated conditions across all subjects. Minimal deviations were a delayed onset and a prolongation of the activation of the Mm. vastus medialis and Mm. vastus lateralis during the simulated walking. Instead of the vastus medialis muscle, two subjects more activated the vastus lateralis on the machine. For the shank muscles, deviations became apparent for two subjects. The tibialis anterior muscle remained rather silent during the real and the simulated floor walking. The activity of the gastrocnemius muscle showed a tonic activation pattern during the real condition and a phasic, but less intense, activation pattern during the simulated walking on the floor. For the stair climbing condition, the activation pattern and the amplitudes of the thigh muscles were comparable during both conditions. For the shank muscles, distinct differences became apparent in three out of the six patients: the tibialis anterior muscle was activated in a timely correct fashion. At the same time, the activation pattern of the gastrocnemius muscle became more phasic.

Abstract No.: OP1282 (continuation)

Abstract Title: GAIT ROBOT FOR THE REPETITIVE PRACTICE OF FLOOR WALKING AND STAIR ASCENDING AND DESCENDING IN NON-AMBULATORY PATIENTS

Conclusions: The new gait robot enables stroke patients the repetitive practice of new gait patterns like stair ascending and stair descending. Major deviations of the lower limb muscle activation patterns of six ambulatory patients did not occur while practising on the machine. Any concerns about a less physiological muscle activation pattern on the machine in stroke patients are thus not warranted.

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Abstract No.: OP1283

Abstract Title: QUALITATIVE GAIT ANALYSIS AND QUANTITATIVE SPATIOTEMPORAL STRIDE PARAMETERS. A LOW COST SOLUTION.

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ABSTRACT: A custom software was used in order to contact a slow motion field by field qualitative gait analysis and a 2-D analysis of spatiotemporal stride parameters. The system used one commercial video camera. The quantitative parameters were correlated with those of an optoelectronic system extensively used in the market (ELITE 6 cameras) in order to test the system. The two systems recorded synchronously 18 gait trials of the same person and all the basic spatiotemporal stride parameters were calculated from each system. Data from each system were correlated using SPSS 113. All correlations yield high values. In conclusion one conventional video camera with the use of the specific software, can be used, apart from a good qualitative tool, to produce reliable results of spatiotemporal stride parameters. Thus this low cost solution is a good alternative for daily medical practice.

Abstract No.: OP1286

Abstract Title: HYDROTHERAPY FOR CHILDREN WITH NEURO-MOTOS IMPAIRMENTS

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Presenting author: Dimitrijevic Lidija

Institution: Physical medicine and rehabilitation clinic – Clinical Centre, Nis – Serbia

ABSTRACT: Introduction. Aquatic interventions are one of the most popular types of alternative therapies in treating children with cerebral palsy and related neuromotor impairments. Water reduces gravity force and increases postural stability which enables children with cerebral palsy to exercise much easier than on land. Due to reduced loading of joints water medium is almost perfect for children with abnormal postural loading. Objective: The objective of the present study was to examine the effects of the 12-week aquatic programme on the gross motor function and spasticity in children with cerebral palsy. Material and methods: Subjects in this study included 24 children, aged from 6 to 12, with spastic CP (GMFCS I-III), randomly allocated in two groups: I (12 children) treated with aquatic therapy twice a week and with a land-based exercise three times a week, during 12 weeks, and II (12 children) treated with a land-based exercise only, three times a week during 12 weeks. The treatment was performed one to one, which means that one child was taught by one instructor. The treatment was individual, designed specifically for one child. The focus of the therapy was different from child to child, according to his or her specific needs. Parameters analyzed included: modified Ashworth scale to quantify muscle tone, Gross Motor Function Measurement (GMFM), and range of motion measurements. Measurements were done before the treatment and after 12 weeks. Results: The children in the I group demonstrated a decrease in spasticity better than the children in the II group, increasing range of motion and the I group improved in activities as these were measured with GMFM. Conclusion: Hydrotherapy is useful for improving gross motor functions, for increasing range of motion and for decreasing spasticity in children with spastic CP. Key words: hydrotherapy, children, neuromotor impairments, cerebral palsy.

POSTER PRESENTATIONS

Abstract No.: PP1009

Abstract Title: EFFECT OF COMBINED BALANCE AND ISOTONIC RESISTIVE EXERCISES VERSUS ISOTONIC RESISTIVE EXERCISE ALONE ON PROPRIOCEPTION AND STABILIZING REACTIONS OF QUADRICEPS AND HAMSTRINGS AND FUNCTIONAL CAPACITY OF KNEE OSTEOARTHRITIS PATIENTS

Authors(s): Naglaa Hussein, Mowaffak Saad, Noha Elsayy

Presenting author: Naglaa A. Hussein

Institution: Department of physical medicine, rheumatology and rehabilitation, Alexandria University, Alexandria - Egypt

ABSTRACT: Objective: To compare the effect of combined balance and dynamic resistive exercise versus dynamic resistive exercise alone on proprioception and stabilizing actions of the quadriceps and hamstrings and functional capacities in patients with knee osteoarthritis. Design: Randomized clinical trial Participants: Fifty nine patients with knee osteoarthritis randomized to group I (resistive exercise) (n=21) and group II (combined resistive +balance exercise) n=38 Intervention: All patients had electrotherapy, flexibility and resistive exercises for the legs, 3 times weekly for 8 weeks. Group II also added balance exercises. Main outcome measures: knee examination, knee pain by visual analogue scale, Lequesne index, one repetition maximum for quadriceps, body mass index, recording of postural evoked surface EMG for quadriceps and hamstrings, and measurement of knee proprioception inaccuracy. Results: knee effusion improved in both groups with significantly higher improvement in group II ($P=0.017$). Knee pain significantly decreased in both groups with higher mean percent change in group II (-50.9 ± 29.59) than in group I (-41.2 ± 10.89) with no significant difference in between groups ($P=0.48$). Lequesne score significantly decreased in both groups without difference in between groups (P value within groups $=0.000$). One repetition maximum for quadriceps significantly increased in both groups with higher mean percent change in group II (50.43 ± 16.6) than in group I (47.02 ± 41.97) (P value within group $=0.000$, P in-between groups $=0.64$). There were limited significant changes of quadriceps and hamstring reflex EMG in both groups. There were significant improvements of knee joint proprioception inaccuracy at the three measured angles 10, 30, 60 in both groups. (Mean \pm SD angle 10, group I 17.14 ± 15.21 , group II 4.578 ± 8.416 , $p = 0.001$). (Mean \pm SD angle 60 group I 1.237 ± 2.376 , group II 4.729 ± 4.811 , $p = 0.003$). Conclusion: Balance exercises add to the benefits of resistive exercise to knee osteoarthritis patients. Key words: Balance, resistive, exercise, knee, osteoarthritis.

Abstract No.: PP1014

Abstract Title: SURVEY OF EARLY SERIOUS COMPLICATIONS IN AN ACUTE NEUROREHABILITATION UNIT

Authors(s): Ganesh Bavikatte, Ali Hassoon, T. Gaber

Presenting author: Ganesh Bavikatte

Institution: Manchester Neuroscience Network, Worsley, Manchester - England

ABSTRACT: Survey of early serious complications in an acute Neurorehabilitation unit Dr Ganesh Bavikatte Dr Ali Hassoon Dr T Gaber Manchester Neuroscience Network Introduction The Greater Manchester Neurorehabilitation network provides service to a population of 3.2 million people through one acute and four Intermediate units. C2 Ward is a 20 bedded Acute Neurorehabilitation Unit, located on site in the regional neuroscience complex along with Neurosurgical and Neurology wards receiving patients soon after neurosurgery, head injury or acute neurological insult. The success of this model depends on the ability of the acute rehabilitation unit to deal with the common medical issues the patients have on one hand and meeting their early rehabilitation needs on the other. The staff was trained to the highest level to meet these 2 different needs. However, many patients suffer from medical complications which are serious enough to warrant transfer out of the rehabilitation unit for closer monitoring or active management. Our retrospective study aims at identification of the number, nature and outcome of these patients needed transfer out of our unit for acute medical conditions. Results 10% of inpatients undergoing neurorehabilitation had to be transferred back to other acute services following an acute illness or complication, with an average of one transfer per month. The most common transfer destination was Neurosurgical ward (50%), closely followed by Intensive care unit (44%). Over a third of transfers happened within two weeks of admission to the acute neurorehabilitation unit. 81% of patients were transferred back to rehabilitation unit within a short time. The most common complications were CSF leakage, Sepsis and aspiration pneumonia. Discussion: The Neurorehabilitation unit is very successful in treating most of the medical complications associated with early phase of rehabilitation onsite. This study confirms that most early complications could be managed in a rehabilitation unit if adequate resources are in place.

Abstract No.: PP1021

Abstract Title: BODY MASS INDEX AND STROKE OUTCOMES

Authors(s): Daniel Burke, David Burke

Presenting author: Daniel Burke

Institution: Department of Rehabilitation Medicine, Emory University School of Medicine, Atlanta - Georgia

ABSTRACT: Intro: The prevalence of obesity throughout the world is increasing at an alarming rate. This trend appears to affect both males and females. Overweight and obese individuals are at an increased risk for many diseases including hypertension, diabetes, coronary heart disease and stroke. Some studies have demonstrated that these individuals have a higher risk of complications and inferior acute-care outcomes related to underlying medical conditions. However, there have also been studies showing that obese individuals in fact have superior acute-care outcomes, suggesting a paradoxical effect of elevated body mass index. In addition no data demonstrates the effect of obesity on the outcome of individuals treated at tertiary inpatient rehabilitation facilities. Therefore, it is important for the care of patients in rehabilitation to determine the effect that obesity may have on the outcomes of these individuals.

Methods: Our retrospective study included all admissions to the stroke service at the Harvard Department of physical medicine and rehabilitation inpatient rehabilitation Hospital over a six-year period. Included in this study were all individuals diagnosed with stroke for whom data included height and weight on admission, functional independence measurements on admission and discharge and demographic variables. The patients were divided into categories based on body mass index, with the rehabilitation progress and outcome of each category compared.

Results: The results indicated that patients with elevated body mass index progressed quicker through the rehabilitation process than did those who were normal weight, and that those who were normal weight progressed faster than those who were underweight.

Conclusion: The conclusion of the study is that the progress in rehabilitation of stroke patients per day is better among those who are overweight than those who are normal weight. It is not clear why this occurs, but it is evidence of a body mass index paradox that has been discussed in other aspects of the medical literature. This poster should be educational for those interested in admission criteria for patients seeking rehabilitation after a stroke.

Abstract No.: PP1022

Abstract Title: TIME TO TRAIN TO PROFICIENCY IN MARTIAL ARTS

Authors(s): David Burke, John Burke

Presenting author: David Burke

Institution: Department of Rehabilitation Medicine, Emory University School of Medicine, Atlanta - Georgia

ABSTRACT: Intro: in United States, a number of personal self defense systems have been introduced to the public at large. Some of these have been aimed at the sport, while others are focused on self-defense, particularly among multiple portions of the population including women and children. While training in martial arts is known to take years to develop a level of proficiency, other truncated versions of self-defense are taught over a much shorter time period. No data exists however to determine the length of time that it takes to reach proficiency in these self-defense courses.

Methods: This prospective study sought to determine the length of time that it would take to train to proficiency and a number of techniques specifically designed to thwart a mortal attack by an armed or unarmed opponent. A series of experts were consulted with backgrounds including aikido, tae kwon do, Shotokan and military hand to hand combat training. These experts were charged with selecting a series of defensive techniques that would allow for defense against an assailant with or without a knife in an enclosed space.

Results: The techniques included defensive stances, turning to face an opponent in that stance, blocks of punches and kicks, blocks of a knife, elbow strikes, Palm heel strikes to the chin, thorax or groin, thumb attacks to the eyes, instep kicks and kicks to the knee level, knee strike to the thigh and to the groin and a carotid choke hold. These techniques were taught to a group of hospital employees, with the proficiency of these techniques tested while filming. The proficiency was rated by martial artists blinded as to the number of training sessions. Proficiency was graded and, and the number of sessions to reach that proficiency was determined for each technique.

Results: The average number of sessions necessary to train individuals in these techniques ranged from 27 to 38.3 sessions. Overall therefore, these data suggest that 38 hours are needed to teach proficiency in the identified defense of an offense if techniques included in this study. Photos of the sessions, and data are presented in this poster. A discussion of injuries incurred during training is included

Relevance: These data are relevant to the sports medicine physician as a demonstration of the time that might be needed for this type of short sports proficiency training.

Abstract No.: PP1026

Abstract Title: POSTTHROMBIPHLEBITIC SYNDROME - DIAGNOSTIC AND PHYSICAL THERAPY

Authors(s): Dragica Rondovic, Rade Kostic, Zaklina Damnjanovic

Presenting author: Dragica Rondovic

Institution: The Special Hospital for Rehabilitation. Gamzigrad Spa, Zajecar - Serbia

ABSTRACT: Post-thrombophlebitic syndrome is the commonest form of the chronic vein insufficiency. The aim: The importance of physical therapy in vein slowdown curing and in preventing from disease progression and invalidity. Method and Subjects: 82 patients suffering from post-thrombophlebitic syndrome and showing clinical gradation of changes according to CEAP classification of C4-C5-C6 were treated from 01.01.2009 till 31.12.2009 by physical agents. Diagnostic evaluation of morphological and chemodynamic occurrences was performed by colour duplex scanning. From pathoanatomic point of view, the varicose stem of the saphena magna vein with the mouth dilatation, with thrombotic varicositates of the vein crural segment was detected in 67 patients. Two of them had a thrombus at the mouth of the saphena magna vein, and 12 of them had post-thrombophlebitic sequel on the phemoral segment of the saphena magna vein. 6 patients suffered from the complete thrombosis of the stem of the saphena vein. Dilated and insufficient perforated veins were reported in 75% of the patients. Balneophysical agents were applied in post-thrombophlebitic syndrome: They are thermomineral water of the indifferent temperature in strictly selected patients, vacusac, vasculator, kinetic, electro and magnetic therapy. Results: Leg oedema was reduced, dermatophlebosclerotic plates were reduced, trophic changes were reduced and the appearance of vein ulcers was prevented. These were achieved by the influence of the physical agents on the improving of vein drainage, by reducing of vein hypertension, by improving of microcirculating metabolic processes. Conclusion: Curing of postthrombophlebotic syndrome poses an overwhelming problem in clinical experience and physical therapy performs a part of complex measures in its curing in improving the quality of living and in preventing from invalidity. References: Handbook of venous disorders-PeterGloviczki, International Angiology The Journal of Vascular Biology, Medicine and Surgery.15th World Kongress of Phlebology, Agus G.B., Allegra C, Guidelines for the diagnosis and therapy of the vein and lymphatic disorders.

Abstract No.: PP1029

Abstract Title: EXTRACORPOREAL SHOCK WAVE THERAPY IN PLANTAR FASCITIS

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ABSTRACT: Introduction. Plantar fasciitis pain is severe and can cause loss of time from work, sometimes leading to total and/or partial disability. The aim is to study the effect and the tolerance of the treatment with extracorporeal shock wave therapy (ESWT) in plantar fasciitis. Methods and Subjects: Between 24 February, 2002 and 24 February 2010, we prospectively studied 120 consecutive adults' patients with plantar fasciitis, treated with ESWT, 1 session for week, 4 weeks. All were assessed before each treatment and one month, after completion of therapy. Results: 120 subjects, 72 (60 %) were women, and 48 (40 %) men, of $49,7 \pm 11,3$ years old. The side was left in 60 (50 %) and right in 60 (50 %). The mean duration of symptoms was $1,3 \pm 2,3$ years. They had previously been treated with: medication 94 (78,3 %), steroid injection 94 (78 %) electrotherapy 42(35 %), sonotherapy 65(54,2 %), Cyriax 28 (23,3%), thermotherapy 13 (18,8 %), kinesitherapy 46(38,3%) and others 32(26,7%). The interval between the last treatment and the ECSWT was $1,8 \pm 2,2$ months. The energy density was $0,36 \pm 0,12$ mJ/mm², with $1432,9 \pm 558,2$ impulses. At 1 month after the ECSWT, the evaluation resulted in significant improvement in pain (81,7 % less in activity) and active articular rank ($7,9? \pm 9,9?$ more). The limitations in daily living activity, sporting and working activity that initially existed in 120 (100 %), persisted at the month in 5 (4,2 %) and 7(5,8%) respectively. The fasciitis that existed in 15 (12,5 %) disappeared. The spur that existed in 49 (40,8 %) persisted. The tolerance was good without important pain in 82 (68,3 %) and without secondary effects of interest. Discussion: Energy used, number of shots and pain comparative with others are respectively: 0,36 mJmm²/0,45 mJmm², 1432,9/2000, and 81,7% / 21%-84%. ESWT is increasingly used for plantar fasciitis, but limited evidence supports its use. A meta-analysis of data from six randomised-controlled trials (RCT) that included a total of 897 patients was statistically significant in favour of ESWT for the treatment of plantar heel pain but the effect size was very small. Of 17 articles included of fasciitis treated with ESWT: effectiveness 12, not 4 and doubt 1. A sensivity analysis including only high quality trials did no detect a statistically significant effect. Obtaining evidence is often complicated, so that the physician often receives contradictory results. At present there is evidence for the effectiveness of ESWT in plantar fasciitis. Conclusion: ECSWT in plantar fasciitis, are well tolerated, and shows a significant effectiveness for pain relief, functional restoration, with a mean satisfaction of $8,2 \pm 2,0$ (0-10). Referentes. 1.- Mirallas-Martinez JA. Efectividad de las ondas de choque extracorporeas basada en la evidencia. Rehabilitacion (Madr) 2005; 39 (2): 52-8. 2.- Thompson CE, Crawford F, Murray GD. The effectiveness of extracorporeal shock wave therapy for plantar heel pain: a systematic review and meta-anaalysis. BMC Musculoskeletal Disorders. 2005; Http://www.biomedcentral.com /1471-2474/6/19. www.bjsportmed.com

Abstract No.: PP1030

Abstract Title: BALANCE VS PAIN IN PATIENTS WITH MULTIPLE SCLEROSIS

Authors(s): Sakellari Vasiliki, Lamprianidou Eleni, Lampropoulou Sofia,
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Institution: T.E.I. of Lamia, Lamia - Greece

ABSTRACT: Introduction Patients with Multiple Sclerosis (MS) often complain of having pain and balance problems. Nevertheless it's not yet explored whether the presence of pain and the imbalance are interrelated. The correlation of symptoms is important for the targeted planning of the rehabilitation processes. Aim The aim of the present work was to investigate the possible correlation between pain and balance in patients with MS. Materials and Methods Eighteen participants (eight men and ten women), aged 46 ± 12 year, presenting MS symptoms for 14 ± 9 years, took part in this preliminary study. The patients were selected randomly from the outpatient list of The Neurology Department of the General Hospital of Lamia. Pain was assessed using the greek version of the Short Form of McGill Pain Questionnaire (Georgoudis et al., 2001) whereas balance performance was measured with the Berg Balance scale (BBS; Berg, Wood-Dauphinee, and Williams, 1995). The assessment took place in the outpatient Neurology Department of Lamia's General Hospital. The data acquisition was made immediately after the scheduled Neurological examination and the administration of the recommended drug therapy. The study protocol was approved by the responsible Ethical Committee. Statistical analysis was performed using Chi-Square test and the non-parametrical Spearman test, ($p: 0,05$). Results Imbalance and gait problems were reported as the most annoying problems. Balance performance was getting worse by the increased disease length ($p=0,002$). 8 out of the 11 able to walk patients reported at least one fall during the last 12 months. The imbalance problems were mainly recorded on a limited base of support. Pain was reported as a main symptom in 13 out of 18 patients. It was described as general, continuous, tiring and often located in the lower back and lower limbs; without being related significantly with imbalance problems or the incidences of fall occurrence during the last 12 months. The only significant correlation noted was between balance and disgusting sick pain ($p=0,015$). Conclusion Information about the intensity, quality and local distribution of pain as well as balance task performance in MS patients were reported in this study. Although pain and imbalance were present in the majority of the patients, major relationships between the two were limited or absent. Key words MS, pain, McGill questionnaire, Berg balance scale, balance, falls.

Abstract No.: PP1031

Abstract Title: COMPARATIVE STUDY OF FUNCTIONAL SCALES FIM AND NINC ESTIMATING NEUROLOGICAL DISABILITY IN PATIENTS AFTER STROKE

Authors(s): Ljubica Nikčević, Aleksandra Plavšić, Nataša Mujović, Marija Hrklović, Zorica Brdareski, Ljubica Konstantinović, Jelena Vasić

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ABSTRACT: Introduction The aim of this double blind study was to compare functional scales FIM and NINDS and the possibility to use single components of both scales as predictors of final rehabilitation. Methods and Subjects: The study group consisted of 70 stroke patients. Eleven of them died during the study. In 59 patients after stroke FIM scale evaluated mobility and total FIM score, as well as disability leg it was done NINDS scale and total NINDS score, the very first day after stroke, two weeks, a month and three months after the stroke. Results: Our results have proved the following issues: 1) statistically there is a significant difference between total FIM score and NINDS-scales, disability leg and mobility, first day after the stroke and between controls. 2) It is concluded that there is statistically significant difference and dependence in every phase of cure. 3) Mobility more depends on FIM scale than on NINDS. 4) There is linear coherence between FIM scale and NINDS scale, during the rehabilitation. The correlation coefficient is 60%. Confidence intervals for probability $p < 0,95$ in our study was for FIM scales, total FIM scales at the beginning was between 33 and 39, and at the end of rehabilitation between 65 and 72, and for NINDS-were between 12 and 14 at the beginning and at the end of the rehabilitation between 9 and 10. Discussion In this study, the results have shown practical application of the FIM scale and its separate components as predictors of results of rehabilitation after the acute stroke in comparison to the NINDS scale. Conclusion FIM scale was easier and more precise, more descriptive and that the each component of FIM scale could be used as predictor of final rehabilitation. References: 1. Autonucci G., Aprile T., Paoluci S., Rash analysis of the Rivermead Mobility Index: A study using mobility measures of first-stroke in patients, Arch.Phys.Med.Rehabil.2002 Oct;83(10):1442-9 2. Pettensen R., Dahit T., Wyller T.B., Prediction of long-term functional outcome after stroke rehabil, Chr.Rehabil.2002.Mar;16(2):149-59 3. Ms C Coshall, Dr M. Patel, Dr A. Rudd, Prof C. Wolfe, Incontinence and stroke. Department of Public Health Science, Home of the South London Stroke register SLSR 4. Gross J.C., Urinary incontinence and stroke outcomes, Arch.Phys.Med.Rehabil.2000.Jan;81(1):22-7 5. Van Kuijk A.A., van der Linde, van Limbeek J., Urinary incontinence in stroke patients after admission to a postacute inpatient reh.program, Arch.Phys.Med.Rehabil.2001.Oct;82(10):1407-11 6. Bean J.F., Kiely D.K., Cairns K.D., Morris J.N., Influence of post-stroke urinary incontinence on disability: the nursing home setting, Am.J.Phys.Med.Rehabil,2003.Mar;82(3):175-81

Abstract No.: PP1032

Abstract Title: EXTRACORPOREAL SHOCK WAVE THERAPY IN LATERAL EPICONDYLITIS

Authors(s): Mirallas-Martínez José Antonio, Correas-Alguacil Noemí, Tudela-Salom María Consuelo, Mendoza-Latorre María Alexandra, Guardiola-Beltrán Neus, Salima-Qudsi Sinclair

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ABSTRACT: Introduction: The lateral epicondylitis, in most cases is a result of repetitive movements that require the forearm muscles to be engaged. It is a common workplace or athletic injury. The aim is to study the effect and the tolerance of the treatment with extracorporeal shock wave therapy (ESWT) in lateral epicondylitis. Methods and Subjects: Between 28 May 2002 and 24 February 2010, we prospectively studied 65 consecutive adults patients with lateral epicondylitis, treated with ECSWT, 1 session for week, during 4 weeks. All were assessed before each treatment and one month, after completion of therapy. Results: Of the 65 subjects, 47 (72,3 %) were women, and 18 (27,7%) men, of $46,8 \pm 7,5$ (30-73) years old. The side was right in 53 (81,5 %) and left in 12 (18,5%). The mean duration of symptoms was $10,5 \pm 11,2$ months. They had previously been treated with: medication 53 (81,5 %), steroid injection 45 (69,2 %), electrotherapy 41 (63,1%), sonotherapy 41 (63,1%), Cyriax 32 (49,2%), thermotherapy 13 (20 %), kinesitherapy 26 (40 %) and other 9 (13,8 %). The interval between the last treatment and the ECSWT was $2,3 \pm 2,7$ months. The energy density was $0,23 \pm 0,09$ mJ/mm², with $1.142,7 \pm 335,9$ impulses. At 1 month after the ECSWT, the evaluation resulted in significant improvement in pain of 76,3% less in activity and active articular rank of 5? more. The limitations in daily living activity, sporting and working activity that existed initially in 65 (100 %), persisted only in 2 (3,1 %) at the month. The tolerance was good without important pain in 46 (70,8%) and without secondary effects of interest. Discussion: There is conflicting evidence regarding ESWT for chronic tennis elbow. Energy used, number of shots and pain comparative with others are respectively: 0,23 mJmm²/0,27 mJmm², 1142,7/1000, and 76% / 48%-92%. With current studies heterogeneous in terms of duration of the disorder, type, frequency and total dose of ESWT, period of time between ESWT, type of management and control group, timing of follow-up and outcomes assessed, a pooled meta-analysis of ESWT for lateral epicondylitis was considered inappropriate. A meta-analysis of data from 28 randomised controlled trials (RCT), was not statistically significant in favour of ESWT for the treatment of lateral epicondylitis, or the general physical therapy. Conclusion: ECSWT in lateral epicondylitis, are well tolerated, and shows a significant effectiveness for pain and relief, functional restoration, with a mean satisfaction of $8 \pm 2,3$ (0-10). References Mirallas-Martinez JA. Efectividad de las ondas de choque extracorporeas basada en la evidencia. Rehabilitacion (Madr) 2005; 39 (2): 52-8. 2.- Bisset L, Paugmali A, Vicenzino B, Beller E. A systematic review and meta-analysis of clinical trials on physical interventions for lateral epicondylalgia. Br J Sports Med 2005; 39: 411-22. www.bjsportmed.com

Abstract No.: PP1033

Abstract Title: EXTRACORPOREAL SHOCK WAVE THERAPY IN CALCIFIC TENDINOSIS OF SHOULDER

Authors(s): Mirallas-Martínez José Antonio, Maria Teresa Sabater Querol, Mendoza-Latorre María Alexandra, Guardiola-Beltrán Neus, Salima-Qudsi Sinclair, Pina-Buded

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ABSTRACT: Introduction: ECSWT is an increasingly popular therapeutic approach to the treatment of a number of soft tissue complaints. Benefit has been demonstrated in calcific tendinosis of rotator cuff. The aim is to perform a study of the effect and the tolerance of the ECSWT, in patients with calcific tendinosis of shoulder. Methods and Subjects: Between 14 February, 2002 and 24 February 2010, we prospectively studied 139 consecutive adults patients with calcific tendinosis of shoulder, treated with ESWT, 1 session for week, 4 weeks. All were assessed before each treatment and one month, after completion of therapy. Results: 139 subjects, 104 (74.8 %) were women and 35 (25.2 %) men, of 48.7 ± 7.4 years old. The side was right in 78 (56.1 %) and left in 61 (43.9 %). The mean duration of symptoms was 2.7 ± 2.9 years. They had previously been treated with: medication 125 (89.9 %), steroid injection 68 (48.9 %), electrotherapy 80 (57.6%), sonotherapy 77(55.4%), Cyriax 31(22.3%), thermotherapy 43 (30.9%), kinesitherapy 67(48.2%), and others 25(17.9%) patients. The interval between the last treatment and the ECSWT was 3.7 ± 7.6 months. The energy density was 0.6 ± 0.5 mJ/mm², with 2211.3 ± 750 impulses. At 1 month after the ECSWT, the evaluation resulted in significant improvement in pain (66.2 % less in activity) and active articular rank (32.7? more in abduction). The limitations in daily living activity, sporting and working activity that existed initially in 139 (100 %), persisted in 18 (12.9 %) and 26 (18.7 %) respectively. The calcifications that existed in 139 (100 %), persisted in 56 (40.3 %). The tolerance was good without important pain in 90 (64.7 %), without secondary effects of interest. Discussion: Energy used, number of shots and pain comparative with others are respectively: 0.60 mJmm²/0.85 mJmm², 2211,3/1000, and 66,2% / 21%-84%. Of 957 articles of musculoskeletal pain treatment with ESWT, were included 9 with calcifying tendonitis of shoulder (effectiveness 9); 4 with not calcifying tendonitis of shoulder (effectiveness 1, doubt 3). Obtaining evidence is often complicated, so that the physician often receives contradictory results. ESWT must be considered before surgical treatment in patients with calcifying tendonitis of shoulder, refractoy to conventional physical and rehabilitation-medical treatment¹. Conclusion: ECSWT in calcific tendinosis of shoulder are well tolerated, and shows a significant effectiveness for pain relief, functional restoration and calcifications lithotripsi, with a mean satisfaction of 8.2 ± 1.9 (0-10). Referentes. Mirallas-Martinez JA. Efectividad de las ondas de choque extracorporeas basada en la evidencia. Rehabilitacion (Madr) 2005; 39 (2): 52-8.

Abstract No.: PP1034

Abstract Title: COMPARATIVE STUDY OF FIM AND NINDS FUNCTIONAL SCALES ESTIMATING NEUROLOGICAL DISABILITY IN AFTER STROKE PATIENTS

Authors(s): Nikčević LJ, Plavšić A, Mujović N, Hrklović M, Brdareski Z, Konstantinović LJ, Vasić J

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Institution: Special hospital for cerebral-vascular diseases "St Sava", Belgrade - Serbia

ABSTRACT: The aim of our study was to compare FIM and NINDS functional scales and application options of single components of both scales as predictors of rehabilitation. In 59 after stroke patients mobility and leg disability were evaluated with FIM scale and total FIM score, as well as NINDS scale and total NINDS score, first day after stroke, two weeks, a month and three months after the stroke. Statistically there was a significant difference between total FIM score and NINDS score concerning leg disability and mobility first day after the stroke compared to controls. Total FIM score at the beginning was 33-39, and at the end was 65-72, and NINDS score was 12-14 at the beginning and at the end was 9-10. There was statistically significant difference and dependence in every phase of treatment. Mobility depended more on FIM scale than on NINDS. There was linear coherence between FIM and NINDS scale during the rehabilitation. Our results showed that improvement evaluated with FIM scale is more "obvious" and easier for routine follow-up of a patient even without statistical analyses. FIM score includes more parameters and is more precise in presenting patient's condition into score. FIM scale was easier to use, more precise, more descriptive and each component of FIM scale could be used as predictor of final rehabilitation. References 1. Pettensen R., Dahit T., Wyller T.B., Prediction of long-term functional outcome after stroke rehab, *Chr.Rehabil.* 2002.Mar;16(2):149-59 2. Ms C Coshall, Dr M. Patel, Dr A. Rudd, Prof C. Wolfe, Incontinence and stroke., Department of Public Health Science, Home of the South London Stroke register SLSR 3. Gross J.C., Urinary incontinence and stroke outcomes, *Arch. Phys. Med. Rehabil.* 2000.Jan;81(1):22-7 4. Bean J.F., Kiely D.K., Cairns K.D., Morris J.N., Influence of poststroke urinary incontinence on disability: the nursing home setting, *Am.J.Phys.Med.Rehabil.* 2003.Mar;82(3):175-81

Abstract No.: PP1036

Abstract Title: ACUTE VASCULAR APHASIAS: PROGNOSIS AT 1 MONTH POST-STROKE IN A SAMPLE OF 100 PATIENTS

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ABSTRACT: Introduction: Aphasia is a common symptom after stroke and is associated with poor prognosis. Knowledge of prognosis, the time course of symptoms remission as well as clinically relevant predictors of aphasia outcome is crucial for planning rehabilitation and informing patient and family (Pedersen, 2004).

Aim of the study: To determine the types, severity and evolution of aphasia in a sample of 100 acute stroke patients and to evaluate potential predictors for language outcome 1 month after stroke.

Methods and Subjects: 100 acute first-ever ischemic stroke patients with aphasia (mean age=66 years) were included consecutively and prospectly. Patients with pre-existing dementia were excluded.

Assessment of aphasia was done at admission and one month later with part of the ENPA and AAT batteries.

Results: The frequencies of the different types of aphasia in acute stroke were: global 41%, Broca 9%, Wernicke's 9%, transcortical sensory 5%, transcortical motor 1%, conduction 2%, anomic 16%, not classifiable or isolated deficits 17%. The distribution of aphasia types in acute phase and at the follow up was not different. Full recovery from aphasia was reached in 16% patients. The outcome for language function was predicted by initial severity of the aphasia and by lesion localization and extension.

Conclusion: Little was known about the time course of aphasia spontaneous recovery within the first month after stroke. This information is essential for rehabilitation purposes.

References: Pedersen P.M., Vinter K. , & Olsen T.S. (2004). Aphasia after stroke: Type, severity and prognosis. *Cerebrovascular Diseases*, 17, 35-43.

Abstract No.: PP1037

Abstract Title: QUANTIFYING CHANGE IN COGNITIVE PERFORMANCE IN IDIOPATHIC NORMAL-PRESSURE HYDROCEPHALUS PATIENTS AFTER CSFTT

Authors(s): Alina Menichelli & Antonella Zadini

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ABSTRACT: Introduction and aim of the study: The most widely used prognostic test to assess candidacy for ventriculoperitoneal shunt placement is the CSF tap test (CSFTT). Few studies have examined cognitive response to the CSFTT.

This preliminary study evaluates the utility of a comprehensive battery of neuropsychological tests as a sensitive measure for repeated assessment of neurocognitive changes after CSFTT.

Methods and Subjects: Six NPH patients (mean age = 70.8 years; mean educational level = 9.5 years); twenty normal subject balanced for age and education with NPH patients.

A comprehensive battery of neuropsychological tests assessing cortical and subcortical functions were administered pre- (T_0 =15 day before) and post (T_1 =2-4 hours after) removal of 40 cc CSF by lumbar puncture on NPH patients. Control subjects were assessed at the same time (T_0 and T_1) as the NPH patients.

A standardized regression-based methodology (Crawford and Garthwaite, 2007) was adopted to establish significant and real individual cognitive changes related to CSFTT procedure.

Results: No one of our patients demonstrate a significant change in any of the neuropsychological tests. Only one in this study was considered to be a good candidate for ventricular shunt surgery due to improvement with gait.

Conclusion: Implications of these findings and directions for future work are discussed.

References: Crawford and Garthwaite (2007). Using Regression Equations Built From Summary Data in the Neuropsychological Assessment of the Individual Case. *Neuropsychology*, 21, 611–620.

Abstract No.: PP1038

Abstract Title: COGNITIVE SYMPTOMS AND ASSOCIATED DISABILITIES IN A CASE OF POSTERIOR CORTICAL ATROPHY

Authors(s): Valentina Chiarelli, Alina Menichelli & Antonella Zadini

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Institution: Dipartimento di Psicologia, Università degli Studi di Trieste, Italy
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ABSTRACT: Introduction: Posterior cortical atrophy (PCA) is a rare progressive dementia characterized by signs and symptoms of cortical visual dysfunction. The impact of symptoms in daily life is poorly reported.

Methods and Subject: It has been described the case of RG, a right-handed 66 year-old-man, who suffered from PCA. In particular, it has been addressed his main neuropsychological symptoms and disabilities in daily life.

Results: The following symptoms were detected: apperceptive visual agnosia, apperceptive prosopagnosia, ventral simultagnosia, pure alexia and difficulties in visual searching of stimuli, dysgraphia specific for cursive style. No signs of language or memory dysfunctions were revealed. All these symptoms impacted significantly his daily life. In fact, he was no more able to read books and newspapers, he could not drive a car or write a letter, he could not help his kin in familiar activities.

Discussion: Our study contributed to better understanding cognitive symptoms and associated disabilities in PCA syndrome. In fact, although PCA is generally considered as an atypical form of Alzheimer’s disease (AD), its symptoms and their influence in daily life could be very different from those described in typical AD patients (Marson & Hebert, 2006).

References: Marson D. & Hebert K.R.(2006). Functional Assessment. In: Attix D.K. & Welsh-Bohmer K.A. (Eds.), *Geriatric Neuropsychology: assessment and intervention* (pp. 158-197). New York: The Guilford Press.

Abstract No.: PP1040

Abstract Title: EFFECT OF MELODY ON VERBAL MEMORY IN BRAIN DAMAGED PATIENTS: A PILOT STUDY

Authors(s): Antonella Zadini, Alberta Lunardelli, Antonia Fumarola, Loredana Boito, Valentina Pesavento

Presenting author: Antonella Zadini

Institution: Medicina Riabilitativa, Azienda Ospedaliero-Universitaria Ospedali Riuniti, Triester - Italy

ABSTRACT: Introduction: There is growing evidence that music can have a significant impact on a variety of cognitive abilities in neurologically impaired individuals. Indeed, music exposure may enhance emotional as well as cognitive functioning in healthy subjects and in various clinical patient groups (dementia or Alzheimer's disease, autism, etc.). In this pilot study, we investigated whether a musical melody would influence verbal learning and memory performance in brain damaged patients given that many studies have found that music can aid the storage and recall of information in the human memory. Methods: 10 Patients were presented with the canonical (spoken) administration of the Rey auditory verbal learning test (RAVLT) and, one week later, they heard a musical (sung) presentation of a parallel list of the words of the RAVLT. The order of the two type of presentation (spoken versus sung) was randomized among subjects. Results: Our preliminary results indicate that patients in the music condition showed significantly better words memory than those in the spoken condition, both in the immediate and later recall trials. Conclusion: This evidence demonstrates the potential role of music in neurological rehabilitation suggesting that music therapy may be employed to support patients with impaired memory functions by facilitating the encoding and retrieving of verbal information.

Abstract No.: PP1041

Abstract Title: EFFICACY OF LEMOD SOLU IOTOPHORESIS ANND LASER THERAPY AS CONSERVATIVE TREATMENT MODALITIES IN PATIENT WITH CARPAL TUNNER SYNDROME

Authors(s): Kostic S, Hrkovic M, Komnenic D, Lazovic M

Presenting author: Kostic S

Institution: Institute for rehabilitation, Beograd - Serbia

ABSTRACT: Efficacy of Lemod solu iotophoresis and laser therapy as conservative treatment modalities in patient with Carpal Tunnel Syndrome. Efficacy of Lemod solu iotophoresis and laser therapy as conservative treatment modalities in patient with Carpal Tunnel Syndrome. Kostic S, Komnenic D, Hrkovic M, Lazovic M. Institute for Rehabilitation, Beograd, Serbia. Carpal tunnel syndrome (CTS) is the most common entrapment neuropathy. The aim of this study was to investigate the analgetic and anti-inflammatory efficacy of corticosteroid- iotophoresis and laser therapy as conservative therapy in patients with Carpal tunnel syndrome. The 30 patients CTS based on electrodiagnostic and clinical findings (TL < 5ms/7cm, with uni- or bilateral CTS) were included and randomly assigned to treatment with laser or iotophoresis. 15 patients (10 bilat and 5 unilat.) was treated with iotophoresis by using Lemod solu amp 40 mg at intensity level 2mA for 20 minutes, 15 treatment in all. 15 patients (11 bilat and 3 unilat. = 25 CTS) received the laser treatment (IC laser wavelength 780nm const., power output 2-4mW, with dosage of 0,24-0,48 J/cm²) 3 points of skin overlying transverse carpal ligament./ 12 treatment in all. In the post-therapy period compared to pre-therapy period in both groups was observed statistically significant improvement in respect to all parameters: Tinel, nocturnal awakening, pain, numbness, and tingling in the hands disappeared or subsided in all patients except only median nerve motor latency was improved but not statistically significant. In between the groups before and after therapy was not observed statistically significant improvement. No systematic or local side effects were reported during or after the treatment period. This study revealed that application of LLLT and iotophoresis is equally effective and safe method in pain relief and function in patients with CTS. References: 1. Giuliani A, Fernandez M, Farinelli M, Baratto L, Capra R, Rovetta G, Monteforte P, Giardino L, Calza L. Very low level laser therapy attenuates edema and pain in experimental models. *Int J Tissue React.* 2004;26(1-2):29-37. 2. Wong, E, et al. Successful management of female office workers with 'repetitive stress injury' or 'carpal tunnel syndrome' by a new treatment modality - application of low level laser. *International Journal of Clinical Pharmacology and Therapeutics.* 1995; 33(4): 208-211. 3. Neeter C, Thomee R, Silbernagel KG, et al. Iontophoresis with or without dexamethasone in the treatment of acute Achilles tendon pain. *Scand J Med Sci Sports.* 2003;13:376-82. 4. Sindel D, Duymaz T, Esmaeilzadeh S. The effectiveness of dexametasone iotophoresis in the conservative treatment of patient with carpal tunnel syndrome. 7th Mediterranean congress of physical and rehabilitation medicine, Portoroz, 2008. Zbornik radova, str.83.

Abstract No.: PP1043

Abstract Title: EFFECTIVENESS OF HALLUX VALGUS STRAP: A PROSPECTIVE, RANDOMIZED SINGLE-BLINDED CONTROLLED TRIAL

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Presenting author: Navaporn Chadchavalpanichaya

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ABSTRACT: Introduction: Hallux valgus is a common forefoot deformity. To decrease the progression, a treatment, i.e. using proper shoes with orthotic devices, were suggested. Night-time commercial hallux valgus strap had been commonly prescribed. However, no one reported the effectiveness of this device. The purpose of this study was to reveal the effectiveness in application of night-time hallux valgus strap in decreasing the progression of hallux valgus angle and forefoot pain. Methods: Patients with moderate-to-severe degree of hallux valgus were randomized into 2 groups: the study group (using night-time hallux valgus strap 8 hrs a night for 12 months), and the control group. Patients in both groups were advised to use proper shoes. Results and Discussion: There were 25 patients in the study group and 22 patients in the control group. No statistical difference was found in demographic data. The hallux valgus angle (obtained through the radiographic measurement) and the pain intensity were decreased in both groups. However, there were no statistically significant differences in the decreasing of hallux valgus angle and pain intensity between two groups. In the study, using straps did not return much difference in result due to insufficient use period (5.6 hrs /night). Furthermore, using proper shoes could provide enough treatment as well. Conclusion: The application of night-time hallux valgus straps for a year was unable to decrease the progression of hallux valgus angle and forefoot pain more than the control group.

Abstract No.: PP1044

Abstract Title: REVISION HIP SURGERY, REHABILITATION. CASE REPORTS

Authors(s): Slavica Pantelic, Olga Nikolic, Desanka Mitrovic, Radojica Djokic

Presenting author: Slavica Pantelic

Institution: Institute for orthopaedic and surgical diseases (IOHB) "Banjica", Belgrade - Serbia

ABSTRACT: Revision hip surgery significantly increased due to the fact that hip surgery becomes very common. It repairs the hip and restores the functional ability. Pain relief is the main benefit. Revision hip arthroplasty also became important, since there are many artificial hip implanted in the last thirty years. The typical life of artificial hip joint is 10-15 years and there is a big chance to be revised at some point. Purpose of this report is to point the problems connected with revision surgery and how can we deal with it in order to obtain the best results. Case reports 58 years old female patient with congenital hip luxation had several operations on both hips. After each surgery she had appropriate rehabilitation. Now, patient has painless hip, strong enough with satisfactory movements. Bad walk as a habit still persists. 59 years old female patient had total hip arthroplasty nine years ago. Revision surgery of acetabular component was done with full functional recovery. Conclusion Revision procedures are complex and our goal is to return patient to normal life maximizing their functional abilities through complete rehabilitation program. Bibliography Robinson,A.H.; Palmer,C.R.; and Villar,R.N.: Is revision as goods as primary hip replacement? A comparison of quality of life. J. Bone and Joint Surg.,1999;81:42-5. Engelbrecht,D.J.;Weber.F.A.;Sweet,M.B.E.; and Jakim,I.:Long term results of revision total hip arthroplasty.J. Bone and Joint Surg..1990;72-B:41-5.

Abstract No.: PP1047

Abstract Title: INFLUENCE OF CHIN TUCK MANEUVER ON KINEMATIC VARIABLES IN NORMAL SWALLING

Authors(s): Tai Ryoony Han, Byung Mo Oh, Ja-Ho Leigh

Presenting author: Tai Ryoony Han

Institution: Seoul National University Hospital, Seoul Korea

ABSTRACT: Chin tuck manoeuvre is known one of important manoeuvre to prevent the aspiration in the dysphagia patients. The effect of the chin tuck maneuver is known to increase the vallecular space and to narrow the airway entrance. However, there is no evidence to prove these effects of chin tuck manoeuvre. And there's some confusion between the chin tuck position and chin down position. We recruited 30 normal volunteer and took the videofluoroscopic picture in neutral, chin down and chin tuck posture. And we did the kinematic analysis of the videofluoroscopic pictures. For the kinematic evaluation of the videofluoroscopic pictures, we digitized 7 points for motion analysis - tip of food bolus, anterior and posterior margin of hyoid bone, anterior and posterior margin of vocal cord and tip and base of epiglottis. For results, we found that the horizontal movement of the hyoid bone was reduced significantly during chin tuck position compared to neutral and chin down position. The distance between epiglottic base and posterior wall of pharynx was significantly reduced in chin tuck position compared to the neutral and chin down position. The base of epiglottis was significantly elevated in chin tuck position compared to the neutral and chin down position. Also, there was significant elevation of vertical displacement of the base of epiglottis with the chin tuck position however; there was no change in epiglottic rotation. With the kinematic analysis, we could confirm the effect of chin tuck manoeuvre in the points that it could narrow the airway entrance and it could elevate the tongue base. But epiglottic rotation was not increased with chin tuck position. Also, we could confirm that there's no therapeutic effect in chin down position.

Abstract No.: PP1048

Abstract Title: EFFECTS OF EXERCISE THERAPY IN PATIENTS WITH FROZEN SHOULDER AFTER SURGICAL TREATMENT OF BREAST CARCINOMA

Authors(s): Hrkovic M, Kostic S, Komnenic D, Jovicic M, Radovic D, Lazovic M, Nikcevic LJ

Presenting author: Hrkovic Marija

Institution: Institute for Rehabilitation Belgrade, Belgrade - Serbia

ABSTRACT: BACKGROUND: Frozen shoulder (adhesive capsulitis) is a complication that occurs in over 50% of patients after breast cancer surgery and axillary lymph node dissection. OBJECTIVE of this study was to investigate the effects of exercise therapy on shoulder function, pain and quality of life in such patients. MATERIAL AND METHODS: The effects of exercise therapy were studied prospectively in 21 women, age 42-75 yrs with clinical signs of frozen shoulder and no other complications or significant illnesses, 2-6 months following breast cancer surgery and axillary lymph node dissection. Physiotherapy consisted of progressive range-of-motion exercises only. The primary outcome measures were amount of pain (Visual Analogue Scale), and range of shoulder movement (manual goniometer). Secondary outcome was health-related quality of life (Shoulder Disability Questionnaire, Functional Assessment of Cancer Therapy Breast). Assessments were made at baseline and 2, 4 and 6 weeks after the beginning of the therapy. RESULTS: Significant improvement both in reduction of pain and shoulder mobility was established after 4 and 6 weeks of therapy. Quality of life also improved significantly. DISCUSSION AND CONCLUSION: This shows that patients with frozen shoulder syndrome after surgical treatment of breast cancer can successfully be treated with only exercise therapy. This is even more important considering the limitations we are facing using other physical therapy procedures in patients with malignant diseases. KEY WORDS: frozen shoulder, breast cancer, physiotherapy REFERENCES: 1. Beurskens CH, van Uden CJ, Strobbe LJ, Oostendorp RA, Wobbes T. The efficacy of physiotherapy upon shoulder function following axillary dissection in breast cancer, a randomized controlled study. BMC Cancer. 2007 Aug 30;7:166. 2. Bendz I, Fagevik Olsen M. Evaluation of immediate versus delayed shoulder exercises after breast cancer surgery including lymph node dissection--a randomised controlled trial. Breast. 2002 Jun;11(3):241-8. 3. Lauridsen MC, Christiansen P, Hesselbo I. The effect of physiotherapy on shoulder function in patients surgically treated for breast cancer: a randomized study. Acta Oncologica 2005;44(5):449-457 4. Todd J, Scally A, Dodwell D, Horgan K, Topping A. A randomised controlled trial of two programmes of shoulder exercise following axillary node dissection for invasive breast cancer. Physiotherapy 2008 Dec;94(4):265-273

Abstract No.: PP1051

Abstract Title: PREDICTORS OF UPPER LIMB LYMPHEDEMA AFTER AXILLARY LYMPH NODE DISSECTION IN BREAST CANCER SURGERY AND THE IMPACT IN QUALITY OF LIFE

Authors(s): Joana Macedo, Silvio Carvalho, Berta Jardim

Presenting author: Joana Macedo

Institution: Centro Hospitalar do Funchal, Funchal - Portugal

ABSTRACT: Introduction Worldwide, breast cancer is the most frequently diagnosed life-threatening cancer in women and the leading cause of cancer death among women. Upper limb lymphedema (LE) is one of the morbidities associated to breast cancer and is often disabling. The aim of this work is to evaluate predictors of upper limb LE after axillary lymph node dissection in breast cancer surgery. We also want to know the impact of LE in quality of life. Our interest in this topic is because in our Physical and Rehabilitation Medicine consultation we have found that LE is not always easy to treat, and if we know predictors factors, we can intervene earlier or at least be more alert to these patients. Methods and Subjects: All patients had axillary lymph node dissection. They were divided into to 2 groups, with or without LE. It was elaborate a questionnaire to evaluate predictors of LE. Application of SF 36 and quickDASH scales. Results and Conclusion At the time of elaboration of the abstract all data are not available. Exact results and respectively conclusions of our study will be exposed when they are presented in the Congress. Physical and Rehabilitation Medicine has a key role in the prevention and treatment of LE. References [Devoogdt N, VAN Kampen M, Christiaens MR, Troosters T, Piot W, Beets N, Nys S, Gosselink R. Short and Long-term recovery of upper limb function after axillary lymph node dissection. Eur J Cancer Care. 2009 Aug 25.] [Dawes DJ, Meterissian S, Goldberg M, Mayo NE. Impact of lymphoedema on arm function and health-related quality of life in women following breast cancer surgery. J Rehabil Med. 2008 Aug;(40):651-8.]

Abstract No.: PP1052

Abstract Title: THE IMPORTANCE OF PHYSICAL AND REHABILITATION MEDICINE ON ARM AND SHOULDER FUNCTION IN PATIENTS FOLLOWING BREAST CANCER SURGERY

Authors(s): Joana Macedo, Silvio Carvalho, Berta Jardim

Presenting author: Joana Macedo

Institution: Centro Hospitalar do Funchal, Funchal - Portugal

ABSTRACT: Introduction Physical and Rehabilitation Medicine (PRM) is the medical specialty principally concerned with impairments, disabilities, and handicaps that arise after acute or chronic illness. Cancer rehabilitation can be defined as a process that assists the cancer patient to obtain maximal physical, social, psychological, and vocational functioning within the limits created by the disease and its resulting treatment. The aim of this work is to evaluate arm and shoulder function after a rehabilitation program, in patients following breast cancer surgery. Methods and Subjects: Patients were evaluate in our PRM consultation. ? All patients had limitation of shoulder range of motion and underwent a rehabilitation program. ? It was measured shoulder range of motion. Application of SF 36 and quickDASH scales. Results and Conclusion At the time of elaboration of the abstract all data are not available. Exact results and respectively conclusions of our study will be exposed when they are presented in the Congress. The aims of rehabilitation are to minimize the impact of the disability resulting from breast cancer and to optimize the quality of life. References [Devoogdt N, VAN Kampen M, Christiaens MR, Troosters T, Piot W, Beets N, Nys S, Gosselink R. Short and Long-term recovery of upper limb function after axillary lymph node dissection. Eur J Cancer Care. 2009 Aug 25.] [Robert J Kaplan. Cancer and Rehabilitation. eMedicine. 2009 Sep 18.]

Abstract No.: PP1053

Abstract Title: ACTION OBSERVATION CAN ENHANCE THE UPPER LIMB FUNCTION AFTER STROKE

Authors(s): Mai Ikeoka, Nahoko Tokunaga, Yasuki Tedsuka, Atsushi Matsuo

Presenting author: Mai Ikeoka

Institution: Fuchu Hospital Department of Physiotherapy, Izumi City - Japan

ABSTRACT: Introduction: Resent study demonstrated that mirror neuron system is activated both when we perform an action and when we observe a similar action being performed by other. There is a possibility that activating this nerve system can develop more effective motor learning and neurorehabilitation. In this study, we designed a Japanese version of Action Observation Therapy (AOT), and examined the effectiveness of the treatment. Methods and Subjects: Thirteen stroke patients with moderate motor deficit of the upper limb participated. They were randomly divided into two groups. Patients in the group A (n=7) underwent the conventional therapy for 2 weeks and in the following 2 weeks, they received an additional AOT (18minutes a day, 5 days a week). Patients in the group B (n=6) underwent the conventional therapy plus AOT in the first 2 weeks and in the following 2 weeks, they received the conventional therapy alone. We made the video scenes of an activity of daily living consisted of 58 scenes to use for the AOT. After having observed the video sequences for 3 min, the participants were asked to perform the observed action with their paretic upper limb using the same objects as those shown in the video film. All patients were evaluated at baseline, at 2 weeks and 4 weeks with Fugl-Meyer assessment scale (upper extremity; FM-U/E , finger; FM-F), Action Research Arm Test (ARAT) and Motor Activity Log(amount of use; MAL-AOU, quality of movement; MAL-QOM).Results: There were no significant differences between 2 groups at baseline. Group A showed a significant difference on the MAL-AOU, FM-U/E, FM-F score. Group B showed significant differences on the ARAT, FM-F score.Conclusion: Our results suggest that action observation has a positive additional effect on recovery of upper limb function after stroke. Further studies on the combination of the AOT for physical training program may result in an innovative rehabilitative approach for upper limb function.

Abstract No.: PP1055

Abstract Title: THE EFFECTS OF MIRROR THERAPY ON MUSCLE AND SKIN VASOMOTOR REGULATION IN PATIENTS WITH CRPS: A DOUBLE CASE REPORT

Authors(s): Urska Puh, Sonja Hlebs, Alan Kacin

Presenting author: Urska Puh

Institution: University of Ljubljana, Faculty of Health Sciences, Ljubljana - Slovenia

ABSTRACT: Introduction: In complex regional pain syndrome (CRPS) the changes in peripheral and central nervous system modulate muscle and skin vasomotor tone in the affected region. There is some evidence that mirror therapy may modulate central motor pathways, whereas its effect on autonomic functions is unknown. The aim of the study was to establish the effects of mirror therapy on muscle and skin vasomotor regulation in two patients with type I CRPS. Methods: A male (age 56 years) and a female (age 54 years) patients who developed the CRPS symptoms in the wrist area of the right upper extremity 16 and 6 weeks following wrist fracture were studied. A 4-week mirror therapy (20-30 minutes daily, 5 days/wk) was introduced in addition to their conventional physiotherapy. Goniometry, hand and pinch grips strength measurements using Jamar dynamometers, Nine hole peg test, superficial and deep sensibility assessment (Semens-Weinstein monofilaments and Disk-Criminator) and pain intensity assessment (Numerical rating scale) were performed before and after the mirror therapy program. In male patient, a near-infrared spectroscopy (NIRS) was also measured in finger flexors during isometric contractions to detect changes in muscle oxygen consumption and local blood flow occurring with therapy. In female patient, skin vasomotor tone in the hand was evaluated from the difference in forearm and middle finger temperatures during the initial and final mirror therapy sessions. Results: An increase in passive ROM, pinch grips strength and hand dexterity were observed in both patients. Despite an increase in pain intensity in the male patient a concomitant increase in grips strength was observed. In contrast, the hand grip strength was not improved in the female patient despite decreased pain intensity after the therapy, most likely due to severely limited wrist ROM. In both patients there were no significant changes in superficial and deep sensibility. In the male patient, NIRS showed significant increases in muscle oxygen consumption and blood flow in both upper extremities, but substantially more on the affected side. In contrast, the exercise-induced decrease in skin vasomotor tone in the female patient was attenuated on both hands with therapy, which was more pronounced on the affected side. Conclusion: The mirror therapy used in these two patients seems to have induced upregulation of muscle vasomotor tone and downregulation of skin vasomotor tone in the CRPS affected region. The observed positive effects of mirror therapy on local vasomotor regulation need to be investigated on a larger patient sample.

Abstract No.: PP1057

Abstract Title: RESULTS OF CHILDHOOD STROKE REHABILITATION

Authors(s): Emese Szabo, Marta Peja

Presenting author: Emese Szabo

Institution: Department of Rehabilitation, Child Health Centre, Borsod County Taching Hospital,
Miskolc - Hungary

ABSTRACT: Stroke in childhood is significantly less frequent and different in both etiology and prognosis than stroke in adulthood. We assessed the results of rehabilitation of our stroke patients treated in the last five years at the Department of Child Rehabilitation. Ten cases of stroke (9 children) were admitted to our Department in the examined five years. Two children arrived 3 months after the ictus from other institutes. They were excluded from our study, so finally we assessed 8 cases of early rehabilitation. Age differed from 3 to 14 years (average 8,125 years), 5 boys and 3 girls. Searching for the etiology we found one cardiologic predisposition, one vessel malformation and one case of vasculitis. In all the other cases we couldn't prove any kind of predisposing factor. Our therapy contained: hygienic gymnastics, massage, gymnastics in water, Petho-method, occupational therapy, speech therapy and psychotherapy. Our result is presented by the changes in Functional Independence Measures points between admission and emission. FIM points changed between 17-92 points (average 35,3). Three out of eight children recovered without any remaining disabilities. In our case of recidive stroke we achieved good results at first but the therapy was significantly less effective after the second stroke event. Although the number of cases is relatively small, our results also confirm that beside the severity of stroke, the fastness and high competence of intensive care, young age itself is a good prognostic factor. Gordon AL, Ganesan V, Towell A, Kirkham F (2002) Functional outcome following stroke in children. Journal of Child Neurology 17 (6): 429-434. Paediatric Stroke Working Group (2004) Stroke in Childhood, Clinical guidelines for diagnosis, management and rehabilitation. Royal College of Physicians

Abstract No.: PP1058

Abstract Title: INFLUENCING FACTORS OF THE NEUROHABILITATION OF INFANTILE CEREBRAL PALSY

Authors(s): Marta Peja, Emese Szabo

Presenting author: Marta Peja

Institution: University of Miskolc, Miskolc - Hungary

ABSTRACT: Aim of the examinations: We examined the results of neurohabilitation treatment in children with cerebral palsy before their social integration, at the age of 3-4. We estimated how our results were influenced by: perinatal event birth weight beginning of the habilitation treatment methods of habilitation Patients and methods: We examined 20 girls and 20 boys, who took part in the habilitation treatments regularly. We estimated motoric functions, residual symptoms and contractures with Asworth - scale. Results: We didn't find connection between motoric disorders and birth weight, beginning of the habilitation treatment, frequency of treatments or the different methods of habilitation. Discussion: Our examinations verified that motoric disorders of our patients were influenced mainly by the severity of brain injury suffered in the perinatal period of life. Conclusion: The primary prevention of infantile cerebral palsy in the perinatal period of life is very important. References: Marodi Gyermekgyógyászat, Medicina 2002 Katona, Siegler Orvosi rehabilitacio, Medicina 1999

Abstract No.: PP1059

Abstract Title: STEM-CELL THERAPY TREATED CEREBRAL PARETIC PATIENTS

Authors(s): Gabriella Filiczki, Kalman Rabai, Anna Kelemen

Presenting author: Gabriella Filiczki

Institution: Peto Andras Institution for Conductive Education of the Motor Disabled & Conductors College, Budapest - Hungary

ABSTRACT: Fifteen cerebral paretic children treated by conductive education were examined, and their parents were interrogated after stem-cell therapy in International Peto Institute. Our hypothesis was that the parents were partial and more subjective. Their subjective opinions were compared with clinical findings. During the interviews the following questions were put: Who did the patients ask for information about stem-cell therapy. To their knowledge what kind of cells did the patients get? How were the stem-cells got into the patients' body? Did the patients get rehabilitation treatment during the stem-cell therapy. Did any complication appear in connection with the stem-cell therapy. Did the patients get information about what kind of changes and improvements should they observe. How did the patients judge the effect of stem-cell therapy. How did the conductor judge the effect of stem-cell therapy? The patients' neurological status and results of their functional appraising tests, before and after the stem-cell-therapy, were compared after the interviews. Experiences: Parents judged the effect (or inefficiency) of the treatment as objective as conductors did, or as it turned out from neurological examinations and functional tests. However they didn't discuss their experiences with other parents or with specialist treating the children. ? Parents got contradictory opinions during the consultancy because the knowledge of specialist treating and examining the cerebral paretic children was incomplete about stem-cell therapy. Suggestion: The patients deliberating stem-cell therapy and specialists - who treat cerebral paretic children - should get acquainted with the handout of The International Society for Stem Cell Research about the possibilities with stem-cell therapy.

Abstract No.: PP1061

Abstract Title: **JOINT RECOVERY AFTER KNEE REPLACEMENT SURGERY: COMPARISON BETWEEN A PASSIVE MOTION DEVICE WITH A FIXED OR A VARIABLE ROTATION CENTRE**

Authors(s): Mazzuchelli N, Agostani E, Beinat M, Lamprect G, Marzioti P, Possamai A, Pesavento V, Toffano M, Zadini A.

Presenting author: N. Mazzuchelli, A. Zadini

Institution: S.C. Medicina Riabilitativa Azienda Ospedaliero-Universitaria "Ospedali Riuniti" Trieste, Trieste - Italy

ABSTRACT: Introduction: In industrialized Countries the increase of the average age and the high prevalence of osteoarthritis renders the use of knee surgery increasingly more frequent. In the rehabilitation phase, devices for lower limb passive mobilization are employed in addition to treatment with dedicated therapists, from the first after-surgery day. However, in our clinical practice we have observed that devices with a fixed rotation centre exert traction on the fascial and ligamentous structures of the operated knee, thus limiting its use over time and therefore slowing down the recovery of the joint range. Since January 2010, in our Rehabilitation Unit, we have started to use a passive motion device with a variable rotation centre that aims at respecting the knee flexion-extension physiology, thus respecting joint biomechanics. Subjects and Methods: The protocol of the Study is characterized by a randomized sample of patients assigned to treatment either with a variable rotation centre passive motion device or with a fixed rotation centre one. Patients were selected according to the type of prosthetic operation (total or unicompartmental), sex and age. The range of motion was evaluated and joint pain symptoms were assessed by VAS before, during and after treatment. The length of individual rehabilitation sessions was also measured.

Abstract No.: PP1063

Abstract Title: DETERMINATION OF QUALITY OF LIFE IN ADOLESCENTS WITH IDIOPATHIC SCOLIOSIS SUBJECTED TO CONSERVATIVE TREATMENT

Authors(s): Specchia A, Aulisa AG, Perisano C, Marzetti E, Ronconi G, Ferrara PE, Rabini A, Nigito C, Maggi L, Piazzini DB, Bertolini C, Aulisa L

Presenting author: Specchia A

Institution: Dept. of Geriatrics, Gerontology and Physical Therapy, Rome - Italy

ABSTRACT: Introduction. This study aimed at evaluating the quality of life (QoL) in patients affected by adolescent idiopathic scoliosis (AIS) treated with brace and at determining the ability of different questionnaires to monitor QoL. Materials and Methods: 108 patients affected by AIS. Patients were subjected to conservative treatment with PASB, the Lyon brace or a combination of PASB + Lyon brace. We used for QoL determination the SRS-22, BSSQ and the BrQ scale. Results: Boys displayed a higher QoL. QoL was higher in patients treated with the PASB compared with the Lyon brace. QoL was significantly correlated with the curve severity. Higher QoL scores were obtained in thoraco-lumbar curves. Discussions: SRS-22, BrQ and BSSQ are effective tools for the evaluation of QoL. The BrQ resulted superior in capturing changes in QoL according to the type of bracing, curve severity, curve type and gender. Conclusions: The 3 questionnaires are equally effective in capturing changes in QoL. The BrQ has a higher discriminatory capacity. PASB-based treatment is associated with better QoL than the Lyon brace. References Negrini S, et al. Why do we treat adolescent idiopathic scoliosis? What we want to obtain and to avoid for our patients. SOSORT 2005 Cons. paper. Scoliosis. 2006;1:4. doi: 10.1186/1748.

Abstract No.: PP1064

Abstract Title: TREATMENT OF THE WRITER'S CRAMP BY DIGITAL SPLINT INDEX

Authors(s): Kharseeva O, Torrequebrada Gimenez A, Ibarz Gine C, April Carreres A, Garreta Figuera R

Presenting author: Olga Kharseeva

Institution: Department of Rehabilitation. University Hospital Mutua de Terrassa, Barcelona - Spain

ABSTRACT: Introduction: Hand dystonia leads to awkward postures and abnormal movements that interfere to a variable extent with skilled tasks of the hand such as playing a musical instrument or writing. In focal dystonia different treatments have been applied with controversial efficiency. We show how a digital splint helps in the writing a patient affects of focal dystonia with notable disability for the professional performance. Methods and Subjects: A 30 years old patient, administrative officer, was sent to our consultation with the diagnosis of index flexors tendinitis, which was causing difficulty in the writing with inability to control the extension of this finger for 3 years. This difficulty was triggered after few seconds of begin writing. Anti-inflammatory no steroidal were tried previously without improvement. Neurological exploration was normal. MRI showed liquid in the extensor pull of annular finger and in fewer quantities in index flexors. Neurography of median and ulna nerve and electromyography of muscles common extensor fingers and the own extensor of index were normal. He was diagnosed writer's cramp and was prescribed physical therapy. A simple splint digital in extension of distal interphalangeal articulation (Stack rod) was indicated for writing with clear improvement of the same one. In addition, the patient was treated with 10 IU infiltration of botulinum toxin type A in the extensor of the index with progressive improvement. Results: The use of the splint improved the function by limiting the extension movement of the finger and it improved objectively the calligraphy, as for form and intelligibility. We present images of the writing and calligraphy with and without splint. Discussion: Although focal dystonia is a complex motor control alteration, the sensitive system plays an important role. Botulinum toxin is the first choice treatment in Writer/s cramp. The effect of this one seems not to owe only to the secondary muscular weakness after the infiltration. Bearing in mind that no used treatment is curative in the focal dystonia, the splint is a simple, economic treatment and that improves function and in this case the professional performance. There exist few studies that support the use of orthotics in the Writer/s cramp. In one of this, a program of immobilization for 5 weeks was used, with the aim to modifying the schema cortical sensor motor retrained with writing. Another study used functional distal splint immobilization for writing, which can replace the distal muscle activity by the more proximal muscles unaffected. Conclusions: In our patient a simpler orthotic to the used in both previous works (Stack rod), manages to improve functionally the writing .Perhaps, in relation to the exposed previously, it might owe to a change of the activity of the musculature distal implied in the writing or to a change of the sensitive information, which modifies the anomalous boss of muscular activation. References: ? 1.Candia V, Wienbruch C, Elbert T, Rockstroh B, Ray W Effective behavioral treatment of focal hand dystonia in musicians alters somatosensory cortical organization.Proc Natl Acad Sci U S A. 2003 Jun 24;100(13):7425-7. ? 2. Priori A, Pesenti A, Cappellari A, Scarlato G, Barbieri S. Limb immobilization for the treatment of focal occupational dystonia . Neurology. 2001 Aug 14; 57(3):405-9 ? 3. Perlmutter JS, Thach WT.Writer\'s cramp: questions of causation.Neurology. 2007 Jul 24; 69(4):331-2. ? 4. Chana P, Canales G Distonias ocupacionales. Rev. chil. neuro-psiquiatr., ene. 2003, vol.41, no.1, p.19-24. ISSN 0717-9227. ? 5.Sheean G.Restoring balance in focal limb distonia with botulinum toxin. Mov Disord 2007, sec. 29(23)1778-88 ? 6.Tas N.Karatas G.Hand orthosis as a Writing Aid in Writer/s cramp.Mov Disord 2001, sec. 16(6)1185-89

Abstract No.: PP1066

Abstract Title: THE VARIABLE ROTATION CENTRE KNEE-PAD: ASSESSMENT OF GAIT AND ADL IN PATIENTS WITH GONARTHROSIS OPERATED FOR LOWER LIMB ARTHROPROSTHESIS

Authors(s): Mazzuchelli N, Beinat M, Lamprect G, Marzioti P, Omati L, Possamai A, Pesavento V, Toffano M, Zadini A

Presenting author: N. Mazzuchelli, A. Zadini

Institution: S.C. Medicina Riabilitativa Azienda Ospedaliero-Universitaria "Ospedali Riuniti" Trieste, Trieste - Italy

ABSTRACT: Introduction: Gonarthrosis is a degenerative process initially involving cartilage and in advanced phases affecting also bones and synovial joints. Associated symptoms render the rehabilitation program very complex by not allowing proper support to the limb affected by osteoarthritis, making it difficult to return to a correct gait and slowing down, and sometimes even preventing, a full recovery of autonomy in activities of daily living. Can a variable rotation centre knee-pad favour the recovery of a good autonomy level in ADL? Subjects and Methods: This study began in January 2010. Subjects are represented by patients who underwent surgery of hip or knee arthroprosthesis, who were carriers of gonarthrosis homo-or contralateral. Controls consist of patients who underwent the same kind of operation but without phenomena of gonarthrosis. The first ones were given a variable rotation centre knee-pad. The two groups were compared through the WOMAC osteoarthritis index both in terms of level of autonomy in ADL and of stability and balance assessed with a platform and a walking test. Results: Subjects evaluated so far show a level of autonomy in ADL and of stability and balance comparable to patients without osteoarthritis. Conclusions: The employment of a variable rotation centre knee-pad should be one of the main treatments in the management of gonarthrosis.

Abstract No.: PP1067

Abstract Title: DEFORMITIES OF MUSCULOSKELETAL SYSTEM OF KARATE CHILDREN ATHLETES

Authors(s): Jandric S, Jankovic Z, Mirkovic G, Babic B, Vranic J.

Presenting author: Jandric Slavica

Institution: Institute for physical medicine and rehabilitation "Dr Miroslav Zotovic", Banjaluka – Bosnia and Herzegovina

ABSTRACT: Introduction: Musculoskeletal system of the children in developmental period is susceptible to become postural disturbance and deformities. The aim of this study is to investigate the success in the school and deformities of musculoskeletal system of karate children athletes against non-karate controls. Subject and methods: In this investigation 32 of karate children athletes (average age of 10.9 years) against 34 children (average age of 11.3 years) non-karate controls, from elementary school were included. We analyzed success in the school as well as presence of foot, knees and spine and chest deformities in these two groups. For testing of significant of differences, χ^2 and Student t-test were used. Results: The results of the investigation show that there is not statistically significant difference in the success in the school ($p>0.05$) and that genu valgum is statistically significant more often appears in the children that were not included in karate training ($p<0.05$). Discussion and Conclusion: Our investigation was shown karate children athletes did not show significant difference in success in school learning and have significant less appearance genu valgum in relation to non-karate controls. References: 1. Kenanidis, E, Potoupnis ME, Papavasiliou KA, Sayegh FE, Kapetanios GA. Adolescent Idiopathic Scoliosis and Exercising: Is There Truly a Liaison? Spine 2008;33(20): 2160-5. 2. Karski T, Kalakucki J, Karski J. Relationship of "syndrome of contractures" in newborns with the development of the so-called idiopathic scoliosis. World J Pediatr 2007;3(4):254-9.

Abstract No.: PP1068

Abstract Title: THE EFFECTS OF PHONOPHORESIS WITH
PHYTOPREPARATION IN PATIENTS WITH GONARTHROSIS

Authors(s): Vesna Radevic, Dejan Miljkovic

Presenting author: Vesna Redvic

Institution: Military Medical Academy Belgrade - Clinic for physical medicine and rehabilitation, Belgrade
- Serbia

ABSTRACT: Aim: The examination of the effectiveness of phonophoresis with phytopreparation (willow bark extract) in patients with gonarthrosis, compared to conventional sonotherapy. Material and methods: 20 patients with gonarthrosis were randomly assigned to receive phonophoresis of phytopreparation (experimental group) or conventional sonotherapy (control group). Both groups received treatments of physical exercises preceded by ultrasound five times per week for two weeks. The patient indicated their pain level by marking on a visual analog pain scale (VAS) before therapy and at the end of the second week. The knee active range of motion (ROM) was measured by goniometry; and also 10-meters walk measured in seconds. Results: A significant reduction of pain ratings on visual analog pain scale (VAS) was achieved in both groups, but the improvement of other physical findings did not reach statistical significance. Compared with patients in the control group, patients in the experimental group showed the statistical significance improvement on the VAS. Conclusion: Patients with gonarthrosis seemed to benefit from sonotherapy under both regimes. For pain reduction, the combination of sonotherapy and phytopreparation may be efficient and safe treatment. References: 1. Jevtic M.R. : Physical medicine and rehabilitation, 1999. 2. Mihajlovic V. : Physical therapy, 2002. 3. Beer AM, Wegener I : Willow bark extract (salicis cortex) for gonarthrosis and coxarthrosis, Phytomedicine 2008. 4. Paul E Glynn, P Cody Weisbach: Clinical prediction rules-A physical therapy reference manual, 2009.

Abstract No.: PP1069

Abstract Title: THE REHABILITATION APPROACH IN CARPAL TUNNEL SYNDROME

Authors(s): A.S.Nica, Florina Ojoga, V.Gusita, B.Mitoiu

Presenting author: A.S.Nica

Institution: UMF Carol Davila Rehabilitation Department, Bucharest - Romania

ABSTRACT: Carpal tunnel syndrome is the most common peripheral neuropathy, occurring during middle or advanced age and affects women twice as frequently as men. The etiology may be acute, chronic or occupational. All patients should undergo initial conservative management, unless the symptoms are acute and associated with trauma (distal radius fractures). The non-operative management include wrist splint, activity modification and cortisone injection into the carpal tunnel. The surgical treatment consists in open carpal tunnel release, followed by a rehabilitation protocol, which lasts for 4 weeks.

Abstract No.: PP1071

Abstract Title: RECOVERY PERIOD AFTER BREAST AUGMENTATION AND THE ROLE OF PHYSICAL THERAPY IN REDUCTION OF LATER COMPLICATIONS

Authors(s): V. Arsic, D. Mitrovic, S. Filipovic

Presenting author: Desanka Mitrovic

Institution: Institute for Orthopaedic Surgery 'Banjica', Belgrade - Serbia

ABSTRACT: In the early postoperative period after breast augmentation the imminence is the serum and blood accumulation in the prosthesis area. Also, it has been created a swelling in the tissue that is a product of tissue trauma during surgery. Together we have a clinical picture that is significantly different from the desired look. Tissue swelling after breast augmentation and blood and serum resorption are very spontaneously, but it takes time (a few weeks up to two months). The very important fact that the prolonged presence of hematoma and swelling is associated with increased incidence of creating capsular contracture, which is the most difficult complication after breast augmentation surgery and requires re-intervention.

In order to reduce these complications to a minimum, and to enable rapid absorption of tissue swelling, hematoma and serum, we put all patients, immediately after removal of threads (the tenth postoperative day) , under physical procedures: lymph drainage, laser therapy , TENS, exercising the shoulder musculature and chest muscles and doing exercises to prevent the movement restrictions in the shoulder.

Given that the incidence of these complications depends on the type of prosthesis, and the surgical approach, as well as the level of tissue where the implant is input , we were using, when treating all patients, within two years , the same parameters: mentor`s prostheses infra-mammary approach, and the prostheses are placed sub-fascia.

Grabb and Smith`s plastic surgery sixth edition by Charles H.Thorne
Smart lipo Downtime. Copyright 2007

Abstract No.: PP1072

Abstract Title: UNILATERAL ARM LYMPHEDEMA AFTER A HUMERUS FRACTURE AT INITIAL MANIFESTATION OF BREAST CANCER

Authors(s): Kharseeva O, Torrequebrada A, Abril A, Ibarz C, Carnicer J, Garreta R

Presenting author: Olga Kharseeva

Institution: University Hospital Mutua de Terrassa, Barcelona - Spain

ABSTRACT: Introduction: Breast cancer represents an important social problem and a significant source of morbidity and mortality in developed countries. Most common manifestation of breast cancer are a palpable mass or a suspicious screening mammogram, but less common presentations as a unilateral upper extremity lymphedema for infiltration of the lymphatic system or for venous deep thrombosis must be considered. We present a case report of malignancy breast where initial manifestation was ipsilateral arm edema after humerus fracture. Methods and Subjects: Clinical case: A woman aged 78, referred to our outpatient consulting for right humerus fracture. She has a good outcome with physical therapy, but six months after appears persistent upper right extremity edema. Front of an unusual evolution we requested mammography that was suggestive of breast cancer Biopsy confirmed invasive breast ductal carcinoma G2/3 in stadium T4N1MO with axillary lymphadenopathy. She receives chemotherapy before modified type Madden radical mastectomy with axillary lymphadenectomy and subsequent radiotherapy. She is visited in oncology department and his tumour markers have been normalized. She performs physical therapy for important right upper extremity lymphedema with trophic changes in skin and she uses a compression garment. Discussion: Most frequently breast cancers present as a palpable mass or an abnormality on screening mammography. A minority of patients present acute venous thrombosis, paraneoplastic syndrome, or lymphedema. A swollen extremity differential diagnosis includes muscle strain, fracture, hematoma, cellulitis, vasculitis, superficial thrombophlebitis, chronic venous insufficiency, deep venous thrombosis, and lymphedema secondary to lymphatic obstruction. The approach to initial evaluation of unilateral arm edema should include detailed history and physical examination (including breast examen), plain x-ray of the involved extremity, and Doppler ultrasound and/or venogram to rule out venous thrombosis. Awareness of this rare manifestation of a common problem like breast cancer is essential to timely diagnosis and treatment. Conclusions: Breast cancer is a relatively frequent disease, but it can have unusual presentations. Diagnosis of lymphedema should always be entertained in a patient with unilateral arm oedema and no venous obstruction. . Therefore the appearance of lymphedema in a patient forces us to reject breast cancer since delay in diagnosis and treatment will affect in the clinical later forecast. References: 1. Zakaria S, Johnson R, Pockaj BA, Degnim AC. Breast cancer presenting unilateral ace arm edema. J Gene Intern Med. 2007 May; 22 (5):675-6. 2. Abu-Dalu J, Weinberger And, Weiss To, Hooker I. Lymphedema of the upper limb seize the presenting symptom of breast carcinoma. [Hebrew] Harefuah. 1975; 88 (4):161-2. [PubMed] 3. Shannon C, Walsh G, Sapunar F, AHern R, Smith I. Occult primary breast carcinoma presenting seize axillary lymphadenopathy. Breast .2002 ; 11:414-8. [PubMed] 4. Humphrey LL, Helfand M, Chan BK, Woolf SH. Breast cancer screening: to summary of the evidence for the U.S. Preventive Services Task Force. Ann Int Med. 2002; 137 (5 Part 1):347-60. [PubMed] 5. Brill KL, Brenin, DR. Occult breast cancer and axillary mass. Curr Treat Options Oncol. 2001; 2:149-55. [PubMed].

Abstract No.: PP1074

Abstract Title: RISK AND PREVENTION FACTORS IN STROKE REHABILITATION

Authors(s): A.S.Nica, Florina Ojoga, V.Gusita, B.Mitoiu

Presenting author: A.S.Nica

Institution: UMF Carol Davila Rehabilitation Department, Bucharest - Romania

ABSTRACT: The poster analyses the main risk factors responsible for the apparition of stroke, because this type of pathology is extremely frequent and its economic-social costs are very heavy for the medical system. They are represented by hypertension, smoking, alcohol consumption, hyperlipemia and diabetes mellitus and they can be easily modified by a proper medical treatment and changing the lifestyle of the patients.

Abstract No.: PP1077

Abstract Title: REHABILITATION OF PATIENTS WITH COGNITIVE DISORDERS AFTER BRAIN DAMAGE

Authors(s): Stevan Jovic, Marko Jovic

Presenting author: Stevan Jovic

Institution: Clinic for Rehabilitation "Dr Miroslav Zotovic", Belgrade - Serbia

ABSTRACT: Cognitive deficits in the structure of neurologic diseases (CVI, head injuries, neurodegenerative diseases and others) have a multiple concern for the affected and the wider family. When are established the disorders of cognitive function, attention, memory, visual-spatial orientation, lingual dysfunctions and executive functions, neural rehabilitation techniques based on coordinated team work are taken. The solution is provided through physical, cognitive and psychological rehabilitation. In 2009 we analysed 56 CVI patients (30 men and 26 women) with motor and cognitive disorders who were rehabilitated in this Clinic. Modified Rankin's scale and MMSE were used for the evaluation of motor status at the beginning and at the end of rehabilitation. The physical rehabilitation was applied immediately after stabilizing patient's medical situation, using feedback that is PNF procedures. Cognitive and psychological rehabilitation was carried out by applying repeated active moves and the closest family members' motivations. By the Rankin scale most of examinees after admittance were the grade 4, few of them were grade 5 and a number was the grade 3. After the rehabilitation was completed the best part of patients was the grade 2 and 3. The greatest number of examinees had the disorder of attention, memory and visual-spatial orientation and had the total test score grade 8 (MMSE). Owing to the brain plasticity and the damaged function compensation, by applying the direct stimulation of motor activities, significant visual cognitive improvements were provided. It is still in progress. The final assessment of cognitive recovery hasn't been completed yet.

Abstract No.: PP1078

Abstract Title: REHABILITATION OF ELDERLY PEOPLE WITH HIP FRACTURES

Authors(s): Natasa Stankovic Vucetic, Milos Vucetic

Presenting author: Natasa Stankovic Vucetic

Institution: Clinic for Rehabilitation "Dr Miroslav Zotovic", Belgrade - Serbia

ABSTRACT: Hip fractures (9 out of 10 happen after the age of 60, with tendency to raise up), make severe psychophysical outcomes. Pain, operation, hospitalization, inability of performing normal everyday activities, brings the person back to fulfilling their physiological life necessities, which helps manifesting dementia. We postulate that mental disorders could prolong the after hip fracture recovery and decrease physical ability. Well-organized physical training and the active engagement of family are employed to eliminate psychopathological contents so as to provide fulfilling of the life higher levels necessities (Maslov scale). This survey includes 75 patients with hip fractures (treated in our Clinic 2005-2010) aged 80 – 96 years (average 72) with women's majority (64). After reception 42 patients were immobile, 33 were sitting or standing with assistance. Dementia was manifested with 24 patients (22%), and a few of them were disoriented and confused. The programme of exercises is focused onto moving in bed, achieving balance, muscles strengthening, transfers, gait training with a helping device, and on daily life activities (ADL). Exercises were carried out repeatedly during the day and depended of a patient's health situation and of the family's assistance. On discharge, without helping devices 16 (21%) patients could walk and 46 (63%) used them permanently or occasionally. Both of them were self-contained in ADL. Worsening was find with 7 (9%) patients and 1 died. Dementia was manifested with 3 patients, and no one was confused or disoriented. Conclusion: Significant recovery of elderly patients with hip fractures was achieved. That affected stabilizing on psychic disturbances.

Abstract No.: PP1079

Abstract Title: SONOGRAPHY IS NOT USEFUL IN EVALUATION OF LATE RESULTS IN PATIENTS AFTER SUBCUTANEOUS SUTURING OF ACHILLES TENDON

Authors(s): D. Lonzaric, M. Borko, B. Jesensek Papez

Presenting author: D. Lonzaric

Institution: Institute for physical and rehabilitation medicine University Clinical Centre Maribor, Maribor - Slovenia

ABSTRACT: Introduction and aim: Achilles tendon (AT) can be easily evaluated by sonography (SG). The usefulness of SG in evaluation of late rehabilitation results after subcutaneous suturing of totally ruptured AT is not known. Subjects and methods: Sixteen sportsmen injured in the period from Oct. 2004 to Nov. 2006 were included in the study (7 soccer players, 5 basketball players, and 4 others). Median age in the moment of injury was 42y (range, 36-56y). The evaluation was done after median 5y (3.5–6y). VAS was used to subjectively evaluate physical working abilities and sports ability. Victorian Institute Scale for AT (VISA-A) and American Orthopedic Foot and Ankle Society Scale (AOFAS) were used. The passive range-of-motion (P-ROM) was measured. Mann-Whitney U test were used to compare the subgroups (the one including men with more prominent SG changes (higher grade of hypoechogenity and presence of calcifications) with the other group). Results: The median values for physical working and sports abilities were correspondingly 94 (35-100) and 86 (10-100). The median value of VISA-A was 97 (67-100), and AOFAS 100 (81-100). The differences in ROM were not important. The median value of anterior-posterior diameter in longitudinal view of operated AT was 11.1mm (4.8-17.0mm) and at the other side it was 5.5mm (3.9-12.3mm). Calcifications were found in 4 operated AT, in 7 AT there were higher grade of hypoechogenity. The differences between 2 subgroups were not statistically significant. Conclusions: Late functional results are very good. SG done 5y from the subcutaneous suturing of AT was not useful in evaluation of late functional results. Reference: Maffulli N., ed. Disability and rehabilitation: Advances in tendinopathy. Disability Rehab 2008;30:1513-677.

Abstract No.: PP1084

Abstract Title: PAEDIATRIC REHABILITATION IN HAITI AFTER JANUARY 12TH 2010

Authors(s): Coos Weber, Naomi Gefen

Presenting author: Coos Weber

Institution: ALYN Hospital, Jerusalem - Isreal

ABSTRACT: On January 12th, 2010 the earth shook and Haiti as it was known, disappeared. Within 89 hours of the earthquake, the Israeli field hospital opened its doors to patients. After two weeks of acute care, the field hospital returned to Israel after treating 1000 patients. During this time Isra-Aid (www.israaid.org.il) and Tevel B'Tzedek (www.tevelbtzedek.org) approached ALYN Hospital in Jerusalem to join a delegation to Haiti to determine the rehabilitation needs of Haitian children. The first delegation focused on mapping out the needs and identifying a centre to collaborate with. They spent two and a half weeks in Port au Prince (PAP) , meeting with representatives from dozens of international organizations and local medical facilities in the search for answers about the number of injured children, types of injuries and how ALYN's specialties could be utilized best in Haiti. The first delegation identified St Germaine - a rehabilitation centre in PAP- similar to ALYN, as the ideal organization for ALYN to focus their efforts on. After the first delegation returned to Israel, ALYN Hospital decided to continue collaboration with Isra-Aid and Tevel B'Tzedek, and to send delegations to Haiti, until the beginning of June 2010. The goals of the following delegations were to treat children with injuries related to the earthquake and to take part in training local staff so that they will be able to take over after ALYN leaves. Five teams of occupational therapists and physical therapists went to Haiti for three and a half weeks each. They treated children with amputations, traumatic brain injuries, orthopaedic injuries and other injuries that are common to earthquakes. Between the teams, they worked 132 days, performed 840 treatments and helped train local staff. Through hours of treatment, children regained mobility and the ability to perform activities of daily living independently. Haiti is just starting their journey to independent function as a country. The following presentation will present ALYN's work in PAP Haiti, through pictures, videos and case studies

Abstract No.: PP1085

Abstract Title: INTEGRATED REHABILITATION PROGRAMS IN A MEDICAL-EDUCATIONAL SETTING

Authors(s): Coos Weber, Maurit Beerli

Presenting author: Coos Weber

Institution: Alyn Hospital Paediatric and Adolescent Rehabilitation Centre, Jerusalem - Israel

ABSTRACT: The Alyn Medical Rehabilitation Day Care merges day hospitalization of children with complex medical issues with an educational setting. The children suffer from an array of issues that affect their physical development -including cerebral palsy, arthrogriposis, osteogenesis imperfecta, MMC, myopathies, ventilator or TPN dependence etc. Such children's experiences are often limited to therapeutic environments and they frequently exhibit passivity and lack of interest in therapeutic exercises. Alyn focuses on rehabilitation through functional participation in engaging activities. These are embedded in a program constantly monitored to adjust treatment targets according to the progress. The presentation will include clinical examples of: A. The synergistic advantage of augmentative and alternative communication (using speech generated devices) and eye-movement tracking communication laptops and early motorized mobilization in children with SMA type I & II, using highly sensitive joysticks and switches B. Extreme sports for mobility impaired children ages 3-10 - Repelling and climbing for young paraplegics. C. Pet therapy as a means to an end: motivating initiative and independence in therapy by incorporating the activities needed for pet care with the personal goal of the patient. These programs are built into the continuum between individual and group therapy sessions and the daily implementation of personalized rehabilitation goals within a social age-appropriate setting. Participation of children in activities of their choice, geared to a level as to be challenging yet achievable, improves the cooperation of the children and enrich the rehabilitation environment.

Abstract No.: PP1087

Abstract Title: HIP ARTHROSCOPY, OPERATIVE TECHNIQUE AND REHABILITATION

Authors(s): Desanka Mitrovic, Aleksandar Crnobaric, Slavica Pantelic, Olga Nikolic, Dragana Bogdanovic

Presenting author: Desanka Mitrovic

Institution: Institute of Orthopedic surgical diseases Banjica, Belgrade - Serbia

ABSTRACT: Introduction and purpose: The hip arthroscopy is a relatively new discipline in the arthroscopy domain. It represents an efficient procedure for the evaluation and surgically resolution of some labrum lesions and articulation surface of carefully selected patients. After arthroscopic correction of mechanical disorders functional deficit must be corrected by proper rehabilitation. Methods: Substantial differences from other arthroscopy segments mean more difficulties when conducting the arthroscopy during the procedure for reasons of anatomical characteristics of the hip joint, joint configuration of the body and the thick and strong joint capsule as well as strong muscles that surround it. The potential complications specific to hip arthroscopy are the lesions of cutaneous femoral hip nerve branches and nerves ishiadicus. Result: Physical therapy is performed on the first postoperative day using the auxiliary crutches with the degree of support permitted by pain. In the first week after the surgery exercises are static for the upper leg, glutei, and abductor and adductor muscle group with cautious feet elevation, especially in patients who had damage auriculars area and begin with exercises to increase range of motion of the hip to the border of pain. In the second week after the surgery isotonic exercises are conducted and pelvic musculature exercises for balance. In post operative third week it is allowed to walk without aids and begin the exercises in water. In the fourth post operative week the exercises with Theraband begin with resistance and training on exercise- bicycle. Conclusion: Benefits of the hip arthroscopy compared to conventional surgical procedures are reducing operative morbidity and faster postoperative recovery. Keywords: Arthroscopy, hip, rehabilitation

Abstract No.: PP1089

Abstract Title: BONE MINERAL DENSITY DECREASE, RISK FACTORS AND QUALITY OF LIFE

Authors(s): Boskovic K, Lazarevic M, Erdeljan B, Naumovic N, Todorovic-Tomasevic S

Presenting author: Boskovic K

Institution: Clinical Centre of Vojvodina, Clinic for Medical Rehabilitation, Novi Sad - Serbia

ABSTRACT: Introduction: A large number of risk factors have an impact on the bone density decrease and the quality of life of patients with decreased bone density. Aim of the study to determine the risk factors that influence the bone density decrease and the quality of life of these patients. Material and method: A number of 709 ambulatory patients, chosen by a method of random selection, were examined. The risk factors were gathered anamnesticly. The bone density was measured by a method of osteodensitometry. The quality of life was estimated through a general questionnaire SF-36. Result 285 patients (40,19%) had normal bone density, while 424 patients (59,80%) had decreased bone density. Osteopeny was found in 272 patients (38,36%) and osteoporosis in 152 patients (21,43%). Insufficient level of physical activity was found in 320 (45,1%) patients and in the group of patients with osteoporosis in 72% of patients. An early menopause was found in 1/5 of patients. There were 174 (24,5%) patients who smoke and 16,2% of patients moderately consumed alcohol. Ten point eight percent of patients had no other illnesses. The biggest number of patients had arterial hypertension (50%) and gastrointestinal comorbidity 21,6%. Hematological pathology was present in 16,2% of patients, diabetes mellitus in 21,6% and hypothyreosis in 2,7%. Over 50% of patients were on an antihypertensive therapy. Thirteen point five percent of patients were on a regular corticosteroid therapy. The quality of life, estimated through a global physical aspect, did not differ significantly between patients with normal and decreased bone density (normal bone density 39,76; osteopeny 39,68; osteoporosis 38,01). The difference in the psychological score was not significant between patients with normal and decreased bone density (normal bone density 42,54; osteopeny 41,47; osteoporosis 41,12). A statistically significant difference was found only when a role of physical functionality was evaluated ($p=0,05$) (normal bone density 59,60; osteopeny 59,41; osteoporosis 52,86). Conclusion In the patients we evaluated, the most frequent risk factor to influence the decrease of bone density was insufficient physical activity. The quality of life of patients with normal and decreased bone density was significantly different when the role of physical functionality was estimated. Key words: Bone mineral density, osteoporosis, quality of life, SF-36 questionnaire

Abstract No.: PP1092

Abstract Title: EFFECTS OF REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION ON UPPER EXTREMITIES IN SUBACUTE STROKE PATIENTS

Authors(s): Dae-Yul Kim, Jin Hwa Yi, Min Ho chun

Presenting author: Dae-Yul Kim

Institution: Asan Medical Centre, University of Ulsan College of Medicine, Seoul – South Korea

ABSTRACT: Introduction: We investigated the hypothesis that repeated sessions of high frequency repetitive transcranial magnetic stimulation (hf-rTMS) or low frequency rTMS (lf-rTMS) in subacute stroke patients might elicit greater improvement in motor function of the paretic upper limbs than sham stimulation. A secondary purpose of this study was to compare the effects of hf-rTMS and lf-rTMS. Methods and Subjects: Hemiparetic stroke patients whose symptom onset occurred within 1 month previously and whose upper extremity motor function was more than Brunnstrom stage 3 were included. We divided the patients into three groups: patients with hf-rTMS (n=7), lf- rTMS (n=4) and sham group (n=9). The hf- rTMS group patients received stimulation at 10Hz applied over hot spot of affected hemisphere for 10 minutes. (10 second stimulation, 50-seconds break, 1000 pulses, 80% of the resting motor threshold). The other patients received either low frequency stimulation over hot spot of unaffected hemisphere for 20 minutes (1Hz, 1200 pulses, 100% of the resting motor threshold) or sham stimulation over unaffected hemisphere for 20 minutes. The treatment period was two weeks (five days per week), and the effect of rTMS was evaluated both before and immediately after, one month later, using the Fugl-Meyer Assessment (FMA) score, Manual Function Test (MFT) and Korean version of Modified Barthel Index (K-MBI). Results: Compared with three groups, FMA scores were significantly improved immediately after on hf-rTMS patients group (FMA score: 11.7±4.0, 4.0±4.6, 4.3±6.0, p=0.025). However, there were no significant differences in the other parameters between three groups. Discussion: Khedr and colleagues¹ showed that 10 days of hf-rTMS of the affected motor cortex of patients in the acute stage of stroke (5-10 days after onset) had beneficial effects, as assessed 10 days after intervention by the Scandinavian Stroke Scale, NIHSS, and the Barthel index. Liepert and associates² demonstrated that lf-rTMS applied to the unaffected motor cortex of acute stroke patients (< 14 days after onset) led to a transient improvement, as assessed by the Nine-Hole Peg Test. Conclusion: hf- rTMS of the affected motor cortex improved upper extremities motor function in subacute stroke patients more than lf-rTMS or Sham stimulation. References 1: Khedr EM, Ahmed MA, Fathy N, et al: Therapeutic trial of repetitive transcranial magnetic stimulation after acute ischemic stroke. *Neurology* 2005;65:466-468 2. Liepert J, Zittel S, Weiller C: Improvement of dexterity by single session low-frequency repetitive transcranial magnetic stimulation over the contralesional motor cortex in acute stroke: a double-blind placebo-controlled crossover trial. *Restor Neurol Neurosci* 2008;25:461-465

Abstract No.: PP1095

Abstract Title: OSTEOPOROSIS - A REAL ENEMY OF TOTAL HIP ARTHROPLASTY REHABILITATION

Authors(s): Viorela Ciortea, Ioan Onac, Liviu Pop, Bogdan Chiroiu, Stelian Petcu, Irsay Laszlo, Rodica Ungur, Cosmina Bondor

Presenting author: Viorela Ciortea

Institution: Rehabilitation Hospital, Cluj- Napoca – Romania

ABSTRACT: Introduction: Osteoporosis plays an important role in the rehabilitation of patients with hip endoprotheses, it is the most frequent cause of fractures in the elderly population and also, a defining element of ankylosing pelvispondylitis and rheumatoid polyarthritis, being involved in potential intraoperative complications (iatrogenic fractures or acetabular protrusions), as well as postoperative complications (early prosthesis loss). Bone resorption around the endoprosthesis is highest during the first 6 months, bone mineral density stabilizing at 12 months after surgery. Aim The aim of the study is to demonstrate that the presence of osteoporosis delays the postoperative rehabilitation of patients with hip endoprotheses, which is why it is important to maintain increased bone mineral density values immediately after the implant of the prosthesis, in order to avoid its subsequent loss, particularly after uncemented arthroplasty. Material and method The study was performed at the Clinical Rehabilitation Hospital Cluj-Napoca, in the period March 2008 – December 2009, in 58 patients aged between 30-83 years, with uni- and bilateral total cemented and uncemented hip prostheses. A standard study protocol was elaborated, which included the determination of bone mineral density around the endoprosthesis by the method of dual energy X-ray absorptiometry, using the software for orthopedic prostheses. The patients were evaluated clinically and by the Quality of Life Questionnaire of the European Foundation for Osteoporosis QUALEFFO-41. Results”: The QUALEFFO score was statistically significantly influenced ($p=0.005$) by the bone mineral density (BMD) value of the seven Gruen zones around the endoprosthesis; the higher the BMD values, the lower the score was. Conclusions Osteoporosis delays the functional rehabilitation of patients with coxofemoral arthroplasty and significantly reduces the quality of life of these patients. Key words: osteoporosis, hip arthroplasty, QUALEFFO, bone mineral density.

Abstract No.: PP1101

Abstract Title: THE UTILITY OF A BLADDER SCAN PROTOCOL USING A PORTABLE ULTRASONOGRAPHIC DEVICE IN SUBACUTE STROKE PATIENTS

Authors(s): Ha Jeong Kim, Min Ho Chun, Eun Young Han, Jin Hwa Yi, Don-Kyu Kim

Presenting author: Ha Joeng Kim

Institution: Department of Rehabilitation Medicine, Asan Medical Centre, University of Ulsan College of Medicine, Seoul – Republic of Korea

ABSTRACT: Objective: To evaluate the clinical usefulness of a bladder scan protocol for urinary retention using the portable ultrasonographic device (PUD) in stroke patients. Methods: The case group consisted of 26 stroke patients with post-void residual urine volume (PVR) >100 mL. These patients were managed using our bladder scan protocol until PVR was <100 mL; If PVR was 400 mL, intermittent urinary catheterization (IC) was performed. The control group consisted of 26 stroke patients with PVR >100 mL but who were not managed according to the above protocol. Results: The entire period of scanning was similar for the two groups, but scanning days of the case group were shorter after PVR was <100 mL (2.3 vs. 8.5 days) and fewer patients in the case group discontinued scanning before PVR was <100 mL (one vs. seven). IC volume was significantly higher in the case group without bladder overdistension (407.3 vs. 344.9 ml), and no urinary tract infections were noted in the case group during this period. Conclusions: Our bladder scan protocol for urinary retention after stroke may be useful as this allows catheterization of an adequate urine volume and reduces unnecessary bladder scanning.

Abstract No.: PP1105

Abstract Title: TIBIAL ADAMANTINOMA MANAGED WITH INTRAMEDULLARY SEGMENTAL ENDOPROSTHESIS

Authors(s): V.I .Sakellariou, Af. Mavrogenis, H. Tsibidakis, A. Farmakidis, G. Mazis, V.Tsouparopoulos, Pj Papagelopoulos

Presenting author: V.I .Sakellariou

Institution: 1st Orthopaedic Department, University of Athens, ATTIKON University General Hospital & Physical Medicine and Rehabilitation of Asklipio Voulas, Athens - Greece

ABSTRACT: Introduction: Adamantinoma is a primary low grade bone tumour. It is predominantly located in the mid-shaft of the tibia and accounts for 0.1 to 0.5% of all primary bone tumours. Histologically, classic adamantinoma is a biphasic tumour characterized by epithelial and osteofibrous components that may be intermingled with each other in various proportions and differentiating patterns. Radiographically, it has a clearly defined outline with a bubbly appearance and increases the width of bone. Material and method: We present a case of adamantinoma of the tibia, in which a new intramedullary diaphyseal segmental defect system was used for limb salvage after en bloc resection. The follow up was 24 months and there was no local tumor recurrence. Enneking functional evaluation system revealed a 92% rating and an increase of 82% comparing to the premorbid status. Discussion: Adamantinoma is a very rare bone tumor. Histological diagnosis is often difficult. Treatment usually consists of wide resection and reconstruction using an allograft, a vascularized fibula or combination of two. Reconstruction of the defect using an intramedullary diaphyseal titanium spacer is another reconstructive option. Conclusion: Intramedullary segmental defect fixation system offers good early functional outcome after resection of adamantinoma, avoiding complications related to other methods of reconstruction.

Abstract No.: PP1108

Abstract Title: RATING OF THE RESULTS OF REHABILITATION TREATMENT IN PATIENTS WITH SEVERE AND MODERATE CRANIOENCEPHALIC TRAUMA ADMITTED IN THE BRAIN INJURY UNIT HOSPITAL

Authors(s): Castillo D, Martinez MC, Rodriguez S, Bori I

Presenting author: Castillo D

Institution: Hospital Universitario Vall D' Hebron, Barcelona - Spain

ABSTRACT: Cranioencephalic trauma is the 1st cause of morbi-mortality in young patients. These patients came from Neurotraumatology and Intensive Care Unit Services, The criteria for treatment and selection for the admission at the unit follow the Practice Guidelines' (New Zealand New Guide 2006, EBIC, NINDS Traumatic Coma Data Bank). Rehabilitation treatment must begin early from the 3th-4th day post-injury. Total patients admitted: 19, Average Age (AA) 29.9 years. Glasgow scale was ≤ 8 in $> 75\%$. Marshalls radiologic classification 90% diffuse axonal injury type II with subarachnoid hemorrhage. Polytrauma 84%. Admission in Rehabilitation (RHB): 53 days average (rank 12-154). Glasgow Outcome Scale classification at admission 100% Severe Disability, Minimally Conscious State (MCS) or Vegetative State (VS). Average stay in RHB: 64 days (Rank 13-126). Complications neuropsychologic disorder, confusional syndrome, epilepsy, spasticity, fractures and para-articular ossifications. Functional capacity Barthel Index at admission 84% Total Dependence, at discharge 89.6% Independent or Partially Independent and 10.4% in VS and MCS Total Dependence. Destination at discharge 89.4% return home, 10.6% long stay centres. Conclusions: Most of the patients are young AA 29.9%, 84% polytrauma associated, 84% total dependence, at discharge 89.4% independent or partially independent for activities of daily living.

Abstract No.: PP1118

Abstract Title: EFFECTIVENESS OF HALLUX VALGUS STRAP; 6 MONTHS PROSPECTIVE RANDOMIZED SINGLE-BLINDED CONTROLLED TRIAL

Authors(s): Chuenchom Chueluecha, Navaport Chadchavalpanichaya, C. Ped

Presenting author: Chuenchom Chueluecha

Institution: Thammasat University, Pattumthani - Thailand

ABSTRACT: Effectiveness of Hallux Valgus Strap; 6 months Prospective, Randomized Single-Blinded Controlled Trial Chuenchom Chueluecha, M.D.¹, Navaporn Chadchavalpanichaya, M.D., C.Ped. ² ¹Department of Rehabilitation Medicine, Thammasat University, Thailand ²Department of Rehabilitation Medicine, Mahidol University, Thailand **Introduction** In conservative treatment of Hallux valgus, many types of orthotic devices were prescription. Night time commercial hallux valgus strap was one of orthotic devices that commonly prescribed. **Objective:** To study the effect of night time hallux valgus strap usage in decreasing the progression of hallux valgus angle and decreasing forefoot pain **Methods and Subjects:** The patient who with moderate to severe degree of hallux valgus were random into the intervention group (using strap for 8 hours per night) and the control group. **Results:** There were 25 patients in intervention group and 22 patients in control group. The hallux valgus angle between the 0 and 6 months in intervention group was decreased 1.16 ± 2.6 degrees but in control group was increased 0.05 ± 2.7 degrees ($p=0.13$). Pain intensity on a numeric rating scale at 3 and 6 months decreased in both groups and no significantly decreased between both groups. **Discussion:** A possible reason for poor result of orthotic therapy is poor adherence to the study protocol. In terms of foot pain, all the patients were given a conventional treatment that could be decreased this pain too. **Conclusions:** Six-months treatment of hallux valgus by hallux valgus strap at night time has no statistically significant difference in decreasing of hallux valgus angle and pain intensity when compared with the control group. **Reference:** hallux valgus, hallux valgus strap, hallux valgus angle, foot pain

Abstract No.: PP1119

Abstract Title: **MOTOR RECOVERY IN POSTSTROKE PATIENTS WITH HEMIPARESIS**

Authors(s): Milan Mandic, Natasa Rancic

Presenting author: Milan Mandic

Institution: Clinic for physical medicine and rehabilitation, Clinical Centre Nis, Nis - Serbia

ABSTRACT: Motor recovery in poststroke patients with hemiparesis Mandic Milan (1), Natasa Rancic (2) Clinic for physical medicine and rehabilitation (1), Clinical Center Nis, Serbia School of medicine Nis (2), University of Nis, Serbia Abstract Introduction. Hemiparesis and motor recovery have been the most studied of all stroke impairments. Aim. The aim of the paper was to analyze the motor recovery in a group of 110 poststroke patients with hemiparesis. Methods. The prospective cohort study involved 110 patients. Functional status was assessed by Barthel Index (BI) and it was determined at the rehabilitation admission and at the discharge. Eighty (73%) strokes were thromboembolic and thirty (27%) were hemorrhagia. The score of BI at the onset of rehabilitation was 65.7 for the patients who had thromboembolic stroke and in the patients who had hemorrhagia the BI score was 35.8. When rehabilitation was finished the BI score was 88.8 for the patients who had thromboemboliic stroke and 64.2 for who the patients had hemorrhagia it was. The difference which was found is statistically significant ($t=3.254$ and $p=0.042$). Discussion. The patients with thromboembolic stroke had higher BI score than patients with hemorrhagia. The higher BI score indicates the better functional recovery. Conclusion. According to the presented results we can conclude that the patients who had the thromboembolic stroke had better motor recovery compared with the patients who had hemorrhagia. Key words: stroke, rehabilitation, Barthel index References: 1. Bernhardt J, Dewey H, Thrift A, Collier J, Donnan G. A Very Early Rehabilitation Trial for Stroke (AVERT). Phase II Safety and Feasibility. Stroke. 2008;39:390 ddd

Abstract No.: PP1123

Abstract Title: FREQUENCY OF URINARY INCONTINENCE AND ITS IMPACT ON QUALITY OF LIFE

Authors(s): F. Gimigliano, G. Iolascon, M. Cervone, G. Di Pietro, S. Di Gestore, R. Gimigliano

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ABSTRACT: Introduction As Urinary Incontinence (UI) is meant any involuntary leakage of urine. It is a frequent, disabling health concern above all among older adults and it is common also in the younger population. Although UI has a great impact on patient's perception of quality of life, it is frequently under-reported by patients who in some cases don't seem to be conscious that this problem can be solved. The aim of our study was to investigate the frequency of UI and its impact on quality of life. Methods and Subjects We interviewed 100 patients who referred to the outpatient of Orthopaedics and Rehabilitation, asking for any UI impairment, and, in case of a positive answer, we also administered the International Consultation on Incontinence Questionnaire - Short Form (ICIQ-SF) and asked if they were or not treated for the incontinence and by which specialist. Results The mean age of the 100 patients interviewed (85 women and 15 men) was 62.9 y.o. (min 27; max 89). 46 (39 W, 7 M) of the interviewed people referred to have a UI and only 15 of them (11 W, 4 M) were treated for this problem; while 13 of the 31 patients who were not receiving any treatment for the UI had already referred it to their GP or specialist. 12 out of the 31 patients not treated referred to leak urine at least once a day; 3 of them think to leak a moderate to large amount of urine; and 11 of them declare that the leaking greatly interfere with their quality of life. The mean score at the ICIQ-SF of the 15 patients under treatment was 10.1 while the mean score of the others 31 patients was 7.73, there wasn't a significant difference among the 2 groups. Discussion and Conclusion UI almost always results from an underlying treatable medical condition. Therefore it might be important to increase the information about UI among patients and above all GPs. Reference Avery K, Donovan J, Peters T, Shaw C, Gotoh M, & Abrams P. ICIQ: a brief and robust measure for evaluating the symptoms and impact of urinary incontinence. *Neurourol.Urodyn.* 2004; 23(4) :322-30.

Abstract No.: PP1127

Abstract Title: **COMPLICATION DURING POSTACUTE REHABILITATION: PATIENTS WITH HYDROCEPHALUS FOLLOWING SEVERE BRAIN INJURY**

Authors(s): Denes Z, Boros E, Szel I, Fasekas G

Presenting author: Denes Z

Institution: National Institute for Medical Rehabilitation, Budapest - Hungary

ABSTRACT: Introduction: Hydrocephalus is considered to be a frequent and important complication after severe brain damage. We report our experiences with hydrocephalus during postacute rehabilitation (incidence, treatment and outcome). Methods and Subjects: Retrospective study between 2002 and 2008. Results: In our rehabilitation unit we treated 83 patients with secondary and 6 patients with primary hydrocephalus during the last 7 years. The majority of hydrocephalus was of post traumatic origin (52) and remaining 23 following stroke (SAH, AVM, ICH), brain operation (tumour – 7, and one cranioplasty), and all these patients had undergone ventricular shunt implantation. Mean age of patients was 36 (14-80) years. Hydrocephalus was diagnosed in our rehabilitation unit in 20 of 83 cases and the other patients were shunted before transfer to our unit. The median time point of shunting was 70 (range: 20-270) days after trauma, brain surgery or stroke. Post-operative complications were seen in 12 of 89 patients: six infections and six shunt failure and revision was necessary in 14%. In PTH cases, the post-operative improvement was seen in 40 of 52 patients being shunted and corresponded to FIM scores. At the other 31 cases, with non-traumatic origin, only two patients remain unchanged. Discussion: The incidence of hydrocephalus treated with shunt implantation in our neuro- rehabilitation unit was 4,4%. The postoperative improvement was 77%. Posttraumatic hydrocephalus concerns 5,2% of patients with severe TBI during last 7 years. Conclusion Diagnosis of posttraumatic hydrocephalus was established in 24%, and complication after shunt implantation (14%) was also recognized in the post-acute rehabilitation unit. The major clinical challenge is determining whether slow or minimal improvement after TBI (in the absence of new, obvious neurological signs) is related to hydrocephalus or simply to the severity of the TBI. It is strongly recommended for the team working at such type of units to obtain clinical practice. Teamwork, good cooperation between acute and postacute-care is necessary for successful rehabilitation of these patients. References Tribl G, Oder W.: Outcome after shunt implantation in severe head injury with post-traumatic hydrocephalus. Brain Inj 2000;14(4):345-54. Guyot LL, Michael DB: Post-traumatic hydrocephalus. Neurol Res 2000;22(1):25-8.

Abstract No.: PP1128

Abstract Title: REHABILITATION AFTER EPILEPSY SURGERY

Authors(s): Gabriella Filiczki, Anna Kelemen, Csaba Borbely

Presenting author: Gabriella Filiczki

Institution: The Andras Peto Institute of Conductive Education and College for Conductor Training, Budapest - Hungary

ABSTRACT: Introduction: around sixty percent of patients after epilepsy surgery become seizure free. Apart from seizure outcome, neuropsychological, psycho-social (quality of life) and psychiatric outcome are equally important issues. Our aim is to present conceptual framework of rehabilitation after epilepsy surgery. The different difficulties and rehabilitation needs are described in patients with favourable and less favourable outcome. Methods and patients: presentation of our complex post surgery epilepsy rehabilitation program (since 1995, 250 treated patients) Results: The rehabilitation survey (patient's state, expectations and aims) and the rehabilitation plan are part of the preoperative investigation. Rehabilitation means supporting the patients to attain their goals. We present the psychological, psychiatric and social difficulties of patients after epilepsy surgery and their consequences. Different types of rehabilitation procedures (medical, psychiatric, psycho-social, occupational) are discussed. Cognitive rehabilitation (CR) is a therapeutic approach designed to improve cognitive functioning after central nervous system insult. After TLE surgery different types of memory deficit develop. After Frontal lobe epilepsy surgery psychological help may be required. For cognitive rehabilitation of memory deficits we use retraining in individual sessions, and compensation training in group sessions, teaching patients different learning and memory strategies. Epilepsy surgery complications in eloquent regions may need neurorehabilitation. Discussion and conclusions: epilepsy surgery is a cost effective method only when combined with the best possible rehabilitation.

Abstract No.: PP1130

Abstract Title: BOTULINUM TOXIN WITH AND WITHOUT SERIAL CASTING IN SPASTIC EQUINUS FOOT

Authors(s): Dae-Hyun Jang, In Young Sung, Sook Joung Lee

Presenting author: Dae-Hyun Jang

Institution: Asan Medical Centre, Korea

ABSTRACT: Objective: To compare the Botulinum toxin injection versus Botulinum injection combined with serial casting in spastic equinus foot. Method: 29 children with cerebral palsy who has equinus foot were recruited from outpatient clinic of Rehabilitation. Children were randomized to two groups, one group received botulinum injection while the other group received serial casting after botulinum toxin injection. Casting was applied at 3 weeks after botulinum injection, and changed weekly for 3 times. Gross motor function classification system(GMFCS), Manual ability classification system (MACS), Bimanual fine motor function(BMFM), Functional mobility scale (FMS), Gross motor function measure (GMFM) were evaluated for classifying motor function; Modified ashworth scale (MAS), Modified tardieu scale (MTS) for evaluating spasticity. Results: Degree of ankle dorsiflexion and MAS were significantly improved until 6weeks in Botulinum injection only group ($p<0.05$), Botulinum injection with serial casting groups improved until 12weeks ($p<0.001$). The Combined group showed significantly greater increased in degree of dorsiflexion than botulinum toxin only group at post injection 6wks and 12wks($p<0.05$). Complications associated with serial casting were atrophy of calf muscle and foot ulcer. Conclusion: Our study demonstrate the effect of Botulinum injection with serial casting was superior and lasted more than 12weeks compared with the Botulinum injection only in spastic equinus foot. We recommend Botulinum injection with serial casting in treating of equinus foot. However physicians must consider some complications associated with serial casting.

Abstract No.: PP1134

Abstract Title: THE EFFECT OF SHORTENING OF LENGTH OF INPATIENT REHABILITATION STAY ON RETURN TO WORK FOLLOWING TBI

Authors(s): Zeev Groswasser, Jacob Hart, Yaron Sacher

Presenting author: Yaron Sacher

Institution: Lewenstein Hospital, Kokhav Yair - Israel

ABSTRACT: Objective: To study the influence of shortening the length of stay (LOS) of patients with traumatic brain injury (TBI) as inpatients at a Rehabilitation Department, on return to work (RTW), patients' satisfaction regarding providers of health care and fulfilment of therapeutic recommendations after discharge from hospital. Methods: Two groups of patients with TBI, the rehabilitation of which was covered sick funds and insurance companies, were compared. 147 patients hospitalized during the years 1980-1985 and studied in 1993 comprised the historic control group and 279 patients, hospitalized between 1998 - 2001 and evaluated in 2004 served as the research group. 86 veterans were added to the research group for some types of analysis like satisfaction regarding provider of care. Results: Significant shortening of inpatient LOS was found in the research group in comparison to the historic control group (132 days Vs. 191 days respectively, $p < 0.0001$). RTW was lower in the research group ($p < 0.007$). Non-fulfilment of further therapy post discharge was not considered an option in the historic control group. Most of the patients in the research group were in need for further therapy and about 85% received it when physiotherapy was the issue. When it came to "unseen" difficulties, i.e. speech therapy, neuropsychological treatment and management of behavioural disturbances, less than 60% received further therapy. Conclusions: Shortening of inpatient LOS of patient with TBI is linked with lower rate of RTW, known as a proxy of quality of life. This may lead to increased burden on families and societies alike.

Abstract No.: PP1135

Abstract Title: COMMUNITY BASED REHABILITATION

Authors(s): Biljana Marjanovic

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Institution: Primary Health Care Centre "Dr Simo Milosevic", Belgrade - Serbia

ABSTRACT: According to the definition of the World Health Organization (WHO), Rehabilitation is the process which aim is to enable patients to reach their optimal physical, sensor, intellectual, psychological and social functional level. There are numerous comparative studies which follow the home rehabilitation (HR) in comparison to conventional care (CC). Primary health protection includes providing services, through health professional teams, to individuals, families and communities. It also refers to a proactive approach in prevention of health issues, as well as improving treatment and control when health issue already exists. Primary health care in Serbia is not as widely implemented as it should be in the sector of community rehabilitation.

Abstract No.: PP1141

Abstract Title: ROLE OF ROBOTS IN REHABILITATION

Authors(s): Fazekas G, Denes Z, Orsolya P, Katalin Zs, Stefanik Gy, Pilissy T.

Presenting author: Zoltan Denes

Institution: National Institute for Medical Rehabilitation, Budapest - Hungary

ABSTRACT: INTRODUCTION: Medical application of robots is a promising opportunity not only to widen treatment options, but also to give assistance to people with disabilities. METHODS: Overview the application of rehabilitation robots supporting therapy and providing assistance. RESULTS: Most of the therapeutic robots are working only in laboratories, very few of them are available on the market. Also the commercialized robots are used first of all in clinical trials, while application in the daily routine treatment is rare. Few devices are able to work in three dimensions and make use of the whole range of motion of the human joints. Active or interactive therapeutic modalities are considered main advantage of these devices. The aim of using robots in physiotherapy is not to replace the therapist, but to supplement treatment options. The assistive robots have been planned mainly for domestic use. These equipments can provide emergency alarm, fall detection, motion assistance (mobility and grasping), cognitive support and stimulation, household duties, entertainment. Many of them are orientated to verbal robot-human communication. Few projects are interested in physical interaction: it requires more difficult solutions. Portability, integration of services, providing wider range of support would be reasonable for such devices. CONCLUSIONS: Therapeutic robots seem to be useful in supplementation of traditional physiotherapy with interactive exercises. Assistive robots can improve the autonomy of people with disabilities and facilitate their social integration. Both groups can be especially useful for patients with multiple impairments and disabilities. ACKNOWLEDGEMENTS: This work was supported by the Ambient Assistive Living joint programme of the European Union and the National Office for Research and Technology of Hungary. REFERENCE: Fazekas G, Horvath M, Troznai T, Toth A. Robot Mediated Upper Limb Physiotherapy for Patients with Spastic Hemiparesis - A Preliminary Study. J Rehabil Med, 2007;39(7):580-582.

Abstract No.: PP1148

Abstract Title: FOREIGN ACCENT SYNDROME

Authors(s): M. Lippert-Grüner

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ABSTRACT: Foreign accent syndrome (FAS) is a very rare disorder following left hemisphere brain lesions. The patients lost the normal phonetic contrast in their native dialect and resultant speech is perceived by the native listeners as sounding foreign. This syndrome is also called unlearned foreign accent, till now 12 cases, using modern neuroimaging techniques had been reported in the literature, mostly after left hemispheric stroke. The localisation did not be uniform, but all cases have involved either prerolandic motor cortex (Brodmann's area 4), frontal motor association cortex (Brodmann's areas 6 or 44), or striatum. Neuropsychological and speech pathology evaluations show no any specific correlations with FAS (Kurowski) the most patients become FAS soon as the ability to speak has returned. This suggests that FAS does not emerge as some unusual form of compensation for or adaptation to a voice or speech problem. About 50% of the reported cases had an additional aphasia, but labelled differently, usually as transcortical motor aphasia or mild Broca's aphasia. We describe a case of 35 years old woman acquired an English sounding accent following a traumatic brain injury. The objective of this study is to identify the functional and anatomic abnormality of this patient using the acoustic analysis of the speech and MRI.

Abstract No.: PP1151

Abstract Title: TREATMENT OF COMPLICATIONS IN PATIENTS WITH SPINAL CORD INJURIES DURING THE REHABILITATION THERAPY

Authors(s): Kotsifi K. Bartzis G. Zikopoulos K.,Georgopoulos Ch.E.

Presenting author: Zikopoulos K.

Institution: Anaplasia Medical Rehabilitation Centre, Athens - Greece

ABSTRACT: INTRODUCTION. The medical issues in patients with spinal cord injury and their change over time is a major concern of the rehabilitation team, during their hospitalization, after hospital discharge and during the rehabilitation program as inpatients or outpatients. The rehabilitation team deals with all the complications of the spinal cord injured patients and takes into serious consideration not only the medical profile after injury, but also the pre-injury medical conditions in order to maximize the outcome. Our goal in Anaplasia Rehabilitation Centre is to demonstrate the most important medical complications of spinal cord injured patients who followed an inpatient or outpatient program and to show their benefit from rehabilitation services, under the care of the Trans - disciplinary Rehabilitation Team. METHOD AND MATERIAL The major complications of SCI patients are deep venous thrombosis, pressure ulcers, urinary bladder dysfunction, joint contractures and respiratory system disease. Throughout our 15-year experience in outpatient rehabilitation and the 18 month experience in inpatient rehabilitation we collected the following data: 1) 800 patients per year followed an outpatient rehabilitation program. 10% of those patients (80) were SCI patients. 2) In our inpatient department we hospitalized 195 patients during the last 18 month period, from those 10% (20) had spinal cord injury. One of the most important complications that we had to deal with was joint contractures, including contractures from heterotopic ossification. 10 of our 20 of our inpatients (50%) at the time of their admission had a permanent catheter and started a program of intermittent catheterization. Less number of our patients suffered from deep venous thrombosis and respiratory system complications as pneumonia, atelectasia and restrictive lung disease. . From the 80 patients of the outpatient program, 8 patients (10%) had ankle joint contractures, 12 patients (15%) had hip joint contractures due to heterotopic ossification and 3 patients (3,7%) had knee joint contractures. 20 patients (25%), had pressure ulcers mainly in the sacrum, 12 patients (60%), mainly in the sacrum, in trochanters 3 patients (15%) and 5 patients (25%), had heel pressure ulcers. At the time of examination the ulcers had a wide variety of extent, depth and debris. Our 20 inpatients and because their admission was after a long term hospitalization in Intensive Care Unit they developed: 13 patients (65%), sacrum pressure ulcers, 3 patients (15%) right and left heel ulcers, 6 patients (30%) hip contractures and 12 patients (60%) ankle contractures. From the rest of the complications: 3 patients (15%) developed deep venous thrombosis and 5 patients (25%), developed respiratory system infection. All patients started the rehabilitation program in order to achieve the maximum functional outcome, were psychologically supported throughout their program.

Abstract No.: PP1151 (continuation)

Abstract Title: TREATMENT OF COMPLICATIONS IN PATIENTS WITH SPINAL CORD INJURIES DURING THE REHABILITATION THERAPY

After we examined very carefully the medical profile of each patient we planned a program of each of medical complications. Specifically the therapy approaches were the following: the inpatients with contractures followed a program of stretching exercise, 2-4 times daily, kinesiotherapy in the therapeutic pool, followed by the use of orthoses (prefabricated or custom made). The pressure ulcers were treated with relief of pressure, change with specific dressings for each ulcer, and surgical consultation and draining of large scars, when needed. Deep venous thrombosis were treated with ROM exercises, gradient elastic stockings, low molecular weight heparin (LMWH), and external pneumatic compression devices. For the respiratory system disease, (especially for our 3 patients who had C5-C7 tetraplegia, we had to deal with the secretion management, and we treated with proper hydration, cough assistant manoeuvres combined with frequent bronchoscopic suctioning specific drainage positions of patients and proper body position to facilitate ventilation. Regarding the proper position we had the benefit of our robotic beds which are especially designed to relief pressure (they contain 6000 air radiators, automatically controlled pressure at sites of maximum pressure like bone prominences, and alternatives, like percussion and vibration for patients with reduction in pulmonary function. 10 patients, who started an intermittent catheterization program at their admission, followed an education program and catheterization was carried out every 4-6 hours. We also designed an individual program for the treatment of complications for our outpatients in a regular basis of 2-3 times weekly.

RESULTS In all our 8 outpatients out of 80 who had ankle joint contracture due to contracture of the Achilles tendon, they had benefit of 75 to 80% and achieved functional ambulation with the assistance of devices. 10 out of 12 patients with hip contracture due to heterotopic ossification experienced improvement of 20-30% in hip joint range of motion, which resulted in an ambulation with the use of lower limb orthoses. 2 patients had no improvement on ROM. 3 patients with knee contracture had an improvement in ROM from 50% to 60%. All patients with pressure ulcers developed improvement of 60-70%. In 2 patients (10%) with recurrent deep sacrum sore we treated with PRP method, which uses growth factors, and the method provided full re-epithelialization of the sore in 30 days. From our 20 inpatients, 16 who had pressure sores of the sacrum, and both heels our treatment approach resulted in full cure in 95% to 100%. 6 patients with hip contractures due to heterotopic ossification had a 30% improvement in ROM, but not great functional benefit. 12 in patients who had ankle contractures, showed an improvement of 80% to 85% with a subsequent improvement in gait. From 10 patients who started intermittent catheterization 2 (with incomplete injury) regained normal bladder function, and 3 developed asymptomatic bacteriuria. 3 patients with deep venous thrombosis and 5 patients with respiratory infection fully recovered due to the early intervention of the internal medicine and pneumonology department of Anaplasia Rehabilitation Centre.

CONCLUSION The early and effective intervention for all medical complications after spinal cord injury is an issue of major importance and can be achieved only through a carefully designed rehabilitation program and the full collaboration of the members of the Trans - disciplinary Rehabilitation Team.

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Abstract No.: PP1153

Abstract Title: A SURVEY OF FUNCTIONAL GOAL SETTING IN PATIENTS WITH UPPER LIMB POST-STROKE SPASTICITY MANAGED WITH INJECTION OF BOTULINUM TOXIN A

Authors(s): Deshpande, P. D'Arcy, R. Pinto, A

Presenting author: Deshpande , P

Institution: Wolfson Neurorehabilitation Centre, London - England

ABSTRACT: Spasticity prevalence is reportedly between 30 and 50% in the post stroke population (1,2). Botulinum toxin A intramuscular injection in patients with upper limb post-stroke spasticity is now a well recognized treatment modality. There is clear evidence that intramuscular Botulinum toxin A injections reduce tone in spastic muscles. However the effect of selective intramuscular Botulinum toxin A injections on improving functional ability in the upper limb in post-stroke spasticity has yet to be fully elucidated(3). This survey looks at the frequency of functional goal setting in patients with upper limb post-stroke spasticity prior to injection with Botulinum toxin A and the outcomes following injection in a tertiary referral spasticity clinic in the United Kingdom

Methods and Subjects A retrospective case note review was carried out of patients attending a tertiary referral spasticity clinic in the United Kingdom between 2007 and 2010. Those with upper limb post-stroke spasticity treated with Botulinum toxin A were identified and their pre-treatment goals were noted. The goals were then reviewed at 6/52 and 12/52 post injection of botulinum toxin A. Outcome measures were recorded pre-treatment and again at 6/52 and 12/52.

Results A total of 32 cases were identified with upper limb post-stroke spasticity. Functional upper limb goals were documented in 10/32 patients (including increasing reach, improving grasp/release, increasing functional use of the arm and exploring the potential for upper limb function). Functional improvements were noted in 8/10 patients (self reporting and video evidence). The 2/10 patients who did not show any functional improvement were those whose initial goal was to explore the potential for upper limb function, rather than the more specific goals. All observation was performed by a single physiotherapist.

Conclusions Functional goal setting is appropriate in selected patients with upper limb post-stroke spasticity, with videos and self reporting suggesting positive functional outcomes following Botulinum Toxin A injections. Our survey showed that no functional outcome measures are currently measured in this spasticity clinic. It would be beneficial to consider adding some functional outcome measures to our current impairment measures.

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Abstract No.: PP1156

Abstract Title: LEVEL OF SPORT ACTIVITIES AFTER TOTAL HIP REPLACEMENT

Authors(s): Stefano Ventura, Elisa Bettoni, Emmanuela Ferrari, Alessandro Bistolfi, Giuseppe Massazza, Maurizio Crova

Presenting author: Stefano Ventura

Institution: University of the Studies of Turin, School of Physical and Rehabilitation Medicine, Torino – Italy

ABSTRACT: Introduction Total Hip Replacement's incidence and prevalence are increasing. Advances in surgical techniques have been accompanied by increasing patient expectations and there is now a demand for THR to allow a return to higher function activities, such as sports. Many previous studies have explored participation in sport after joint replacement. The main limitation of these studies is that sport activities present significant variations between different populations. Methods and Subjects 119 patients treated with THA by the II Orthopedic Clinic in CTO Hospital (Turin, Italy) underwent evaluation by telephone interview. We evaluated patients using Harris Hip Score for clinical outcome and a simple questionnaire about present and past sport activities. Results: The series we have described, compared with other similar studies, underline that THR guarantees excellent results in the performance of ADL. However, in quantity, quality and kind of sports we observed a significant decrease that cannot be considered satisfactory. Discussion The reason for these results is unclear, and maybe not completely due to prosthetic materials. Part of the problem is that the sport activities are not still considered important even by the physicians. Previous studies demonstrated that even the surgeons still haven't an evidence-based method to advice patients about sports. Conclusion Materials, surgical techniques and rehabilitation are all facilities to achieve better results. Particularly in rehabilitation, focused sport activities can act as late rehabilitation treatments and as maintenance therapy. References Kurtz S, Mowat F, Ong K, Chan N, Lau E, Halpern M. Prevalence of primary and revision total hip and knee arthroplasty in the United States from 1990 through 2002. *J Bone Joint Surg Am.* 2005;87:1487-97. Bauman S, Williams D, Petrucci D, Elliott W, de Beer J. Physical activity after total joint replacement: a cross-sectional survey. *Clin J Sport Med.* 2007; 17:104-8. Huch K, Muller KA, Sturmer T, Brenner H, Puhl W, Gunther KP. Sports activities 5 years after total knee or hip arthroplasty: the Ulm Osteoarthritis Study. *Ann Rheum Dis.* 2005;64:1715-20. Sechriest VF 2nd, Kyle RF, Marek DJ, Spates JD, Saleh KJ, Kuskowski M. Activity level in young patients with primary total hip arthroplasty: a 5-year minimum follow-up. *J Arthroplasty.* 2007;22:39-47. Dubs L, Gschwend N, Munzinger U. Sport after total hip arthroplasty. *Arch Orthop Trauma Surg.* 1983;101:161-9. McGrory BJ, Stuart MJ, Sim FH. Participation in sports after hip and knee arthroplasty: review of literature and survey of surgeon preferences. *Mayo Clin Proc.* 1995;70:342-8. Healy WL, Iorio R, Lemos MJ. Athletic activity after joint replacement. *Am J Sports Med.* 2001;29:377-88. Klein GR, Levine BR, Hozack WJ, Strauss EJ, D'Antonio JA, Macaulay W, Di Cesare PE. Return to athletic activity after total hip arthroplasty. Consensus guidelines based on a survey of the Hip Society and American Association of Hip and Knee Surgeons. *J Arthroplasty.* 2007;22:171-5.

Abstract No.: PP1160

Abstract Title: RETURN TO WORK AFTER STROKE IN APHASIC WORKING AGE POPULATION: A TELEPHONE SURVEY

Authors(s): Kudret Yelden, Pradeep Deshpande

Presenting author: Kudret Yelden

Institution: Wolfson Neurorehabilitation Centre, St. Georges Hospital, London - England

ABSTRACT: Introduction and aim: 25% strokes occur in people aged <65 years. Data on return to work after stroke range from 0% to 100%. Aim: Wolfson Rehabilitation Centre is a 32-bedded unit in London. We refer our patients to a voluntary organization, which provide help on return to work. The aim this study is to identify the rate of return to work of aphasic patients and the role of voluntary organizations. Methods and subjects: We have identified 36 stroke patients who were discharged from our unit between 2004-2008. The inclusion criteria were: having speech problems, being referred to voluntary support organization, between 18 and 65 years of age. We were able to contact 20 patients. Our survey consisted of 4 main questions about employment status before and after stroke, willingness to work and role of voluntary organization. Results: 95% of our patients were employed before stroke. Only 30% of them returned to work (6 out of 20). 4 of these are in voluntary and 2 are in part-time jobs. 78% of unemployed patients wish to work. 35% of all patients recalled being contacted by voluntary organization and 28% of these accepted help. Conclusion: Return to work rate is low after stroke and aphasia is an important factor influencing return to work status. The role of voluntary organizations needs to be re-evaluated and strategies should be developed in order to increase their effectiveness. References: 1. What Are the Social Consequences of Stroke for Working-Aged Adults? -A Systematic Review. Daniel K, et al, Stroke. 2009;40:e431 2. Hinckley JJ. Vocational and social outcomes of adults with chronic aphasia. J Commun Disord. 2002; 35: 543–560

Abstract No.: PP1164

Abstract Title: FRAX QUESTIONNAIRE: MEASURE OR TRUST?

Authors(s): Joao Maia, Filipe Bernardo, Margarida Cantista, Pedro Soares Branco

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Institution: Hospital de Curry Cabral, Ferno Ferro - Portugal

ABSTRACT: Introduction FRAX1 requires height and weight to assess body mass index (BMI). The aim of this study was to identify the percentage of patients who provide these data, their reliability and effect on fracture risk. Methods and Subjects 91 women, >65 years, were inquired and the provided data registered. Weight and height were then measured. Estimated and real weight, height and FRAX were compared with “t” and Wilcoxon tests. Results 8 women (9,6%) were unable to provide data. All others (n=83) were accurate about weight but inaccurate about height ($p<0,001$). Real BMI was higher than estimated BMI ($p=0,001$) and real fracture risk (major and hip fracture) was lower than estimated fracture risk ($p=0,001$; $p<0,001$). Therapeutic decision based on real versus estimated FRAX didn't show significant differences. Discussion FRAX is helpful in deciding treatment. However, information provided by patients may be incorrect². Studied women overestimated height (like in most studies) and correctly estimated weight (unlike in most studies). Estimated BMI overestimated FRAX risk fracture, but did not change therapeutic decision (considering major and hip fracture risk at 10% and 3%), since BMI is only one of several FRAX factors and its deviation was small. Conclusion The majority of women provided data for height and weight. They assessed weight correctly but overestimated height. FRAX based on these data underestimates BMI and overestimates fracture risk. Statistically, this had no influence on therapeutic decision, but that may not be the case for the individual patient. References 1. www.shelf.ac.uk/FRAX. 2. Merrill RM, Richardson JS: Validity of self-reported height, weight, and BMI: findings from the NHNES. Pub health res, pract and policy 2009; 6(4):1-10.

Abstract No.: PP1166

Abstract Title: COMPARATIVE EFFECTS OF US AND HOLD RELAX ON SHORTNESS OF HAMSTRING MUSCLES

Authors(s): Mohammad Amouzadeh Khalili

Presenting author: Mohammad Amouzadeh Khalili

Institution: Semnan University of Medical Sciences, School of Rehabilitation, Research Centre, Semnan - Iran

ABSTRACT: Introduction Shortness of the skeletal muscles may cause musculoskeletal disorders of the body and improvement of these muscles is very important. The aim of the present study was to compare the effects of US and Hold relax on shortness of hamstrings Method This is a randomized clinical trial. In this present study 36 boys students with age range of 18-26 years old who had bilateral hamstring shortness (SLR<65 Degree) were candidate for the study. The clients were referred to the physiotherapy clinic by the physician; they completed the ethical form to participate in the study, after completing the form the subjects were assigned in one of the three groups, randomly. The Groups 1 received US with stretching, the group 2 received hold relax method and the Group 3 was control group and they did not receive any special treatment and they had their ordinary programme. The assessment methods were Passive SLR and Passive knee extension. The treatment programmes were carried out six days a week for a two weeks period. The assessments were carried out as pre-tests and post test for each assessment method. Data were analyzed using SPSS, t-test and nonparametric tests. Results The results of the study indicated that the mean of ROM in the two treatment groups increased significantly during the treatment period ($P<0.05$) Comparison of the two treatment methods revealed that there was not a significant difference between the two methods, ROM in SLR and passive extension, however, the results showed that the US with stretch was more effective than Hold-Relax method. Conclusion The results of the present study indicated that there were not significant differences between the two treatment methods, However ROM in SLR and passive extension were increased using the two treatment method. Key Words: Hamstring shortening, Hold-Relax, US and stretch

Abstract No.: PP1169

Abstract Title: STRENGTH DURATION CURVE IN RADIAL NERVE INJURY: A CASE REPORT

Authors(s): Ljoka C, Ciocchetti E, Giordani L, and Foti C

Presenting author: Ljoka C

Institution: Physical and Rehabilitation Medicine, Public Health Department, Tor Vergata University, Rome - Italy

ABSTRACT: Introduction Radial neuropathies result from injury due to penetrating wounds or fractures of the arm, compression, or ischemia. Electrodiagnosis (EED) is a traditional electric test for the evaluation of the integrity and excitability of the neuromuscular system. It consists in stimulating the neuromuscular complex with electrical pulses having known characteristics of shape, intensity and duration. The aim of this study was to assess the diagnostic and prognostic value of traditional electrodiagnosis in peripheral nerve injury. Methods and Subjects We report the case of 58 years old men admitted to the Day Hospital of Tor Vergata University for a right radial nerve injury due to compression at the humeral spiral groove. At the admission the patient clinically presented with a wrist drop. EED evaluation was executed by an expert physician every seven days. Rheobase, Chronaxie and Bawens shortened S/D curve values were calculated by using the monopolar stimulation. Conclusions EED represent a valid and non-invasive complement to clinical examination. It is helpful in the diagnosis and follow up of peripheral nerve injuries. References: Cameron MH. Physical agents in Rehabilitation. USA, W.B. Saunders Company, 1999. Foti C, Ljoka C, Gentili S, Rocco A, E Siri and I Caruso Strength/Duration Curve and Lumbosacral Radiculopathy. Free Papers 2nd World Congress of the ISPRM. 2003 May 18-22. ? Shapiro BE, Preston DC. Entrapment and compressive neuropathies. Med Clin North Am. May 2003;87(3):663-96.

Abstract No.: PP1177

Abstract Title: USE OF VIBRATION ENERGY FOR BONE REGENERATION: A CASE STUDY

Authors(s): C. Foti, N. Rosato, C. Trombetta, P. Abundo, C. Paniccia

Presenting author: C. Foti

Institution: Tor Vergata University, Rome - Italy

ABSTRACT: The aim of the study was to assess the efficacy of local vibration treatments (LV) in delayed-union and non-union fractures through therapeutic exercise vibration (TEV) by analysing the radiological trend. This case study analyses the bone activity of a male patient presenting a right tibial fracture treated with TEV. A monthly program was scheduled in 5 weekly treatments consisting in 6 series of 5 repetitions each at 35Hz. Since early applications the patient expressed improvements in paresthetic symptomatology and reduction of perilesion edema. At the end of TEV program, clinical results confirmed independent ambulation with disappearance of perimalleolar edema and decrease of algic symptomatology, while radiographic images revealed the presence of bone repair activity around fracture line. Where specific and local treatments are required in order to focus the effects of vibrations and favour bone regeneration and muscle strengthening the best solution is gained applying LV. To achieve this goal a device dedicated to LV application is being developed and was used in this case. Analyzing the results, TEV appears to have a determinant role regarding the activation of bone growth and its acceleration that should be studied in detail. References Foti C, Annino G, Tsarpela O, Masala S, Tranquilli C, Francavilla C, Bosco C et al Preliminary study on the effects of high magnitude low frequency of whole body vibration in physical activity of osteoporotic women Med Sport 2009 Bosco C, Colli R, Viru A et al Adaptive responses of human skeletal muscle to vibration exposure Clinical Physiology 1999

Abstract No.: PP1178

Abstract Title: USING D-DIMMER AND COLOR DUPLEX SONOGRAPHY (CDS) IN EARLY DETECTION OF DEEP VEIN THROMBOSIS (DVT) IN PATIENTS AT REHABILITATION TREATMENT

Authors(s): S. Vasic, Lj. Petrovic, N. Sremcevic, S. Radulovic, S.Pantić-Aksentijević

Presenting author: S. Vasic

Institution: The Specialized Rehabilitation Hospital, Banja Koviljaca, Koviljaca - Serbia

ABSTRACT: AIMS: Reliability and connection of the two diagnostic methods, D-dimmer and CDS of deep veins, in early detection of suspected clinical DVT in patients at rehabilitation treatment. METHODS: The prospective study involves all patients, clinically suspected for DVT, examined either in outpatient department or hospital department, in the period from August 2007 to February 2009, with CDS only (25) or first with D-dimmer (88) and then with CDS, except in cases of negative D-dimmer finding in comparison to cut off value. CDS /linear probe 7-5MHz/ describes spontaneous, phase action, Valsavla's response, augmentation due to distal compression, blood flow directed toward heart, diameter, compression ability, anechogenicity in the diagnostics of DVT. RESULTS: The control group consisted of 35 individuals with suspected DVT and CDS finding, etiologically: 20 orthopaedic patients, 10 with CVI, 4 with malignant disease, 1 taking contraceptive drugs. The diagnosis was made for: 18 DVT (15 lower leg, 2 VFS, 1 VFC), 8 thrombophlebitis of VSM with affection of SFJ and 6 VSP with affecting v. popliteae. In CDS+D-Dimmer group (31), the diagnosis was made for 17 DVT (13 lower leg, and 2 thrombosis for VIE and VFC each), 7 thrombophlebitis of VSM with affecting SFJ or with propagation to the communication veins and 7 without verified DVT, and there was a surgery procedure up to 4 weeks in the past. In 3 individuals with significantly high values of D-Dimmer, thrombophilia was diagnosed. CONCLUSION: DVT may be excluded for certain if the value of D-Dimmer is negative, and then the CDS examination is not indicated. In our sample, the negative D-Dimmer finding correlates with DVT in large percent, but the positive finding should be accepted with reserve in individuals who were surgically treated when CDS examination was indicated.

Abstract No.: PP1182

Abstract Title: ACCEPTANCE OF INSOLES AFTER PEDOBAROGRAMM IN PATIENTS WITH FOOT DEFORMITIES

Authors(s): Farmakides A, Mani V, Chalida E, Fotinopoulos G, Mitsis V., Sioutis I, Aggeli V, Roussos N, Patatoukas D.

Presenting author: Mitsis B

Institution: Department "Asklepicion" General Hospital, Voula, Athens - Greece

ABSTRACT: Aim: To compare the influence of prescribed insoles, after pedobarogramm in relieving pain and improving postural sway of patients with foot deformities Material and method: Seventy-seven subjects (56 women, 21 men), 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 Analogue Scale, before and 3 months after the prescription of the insoles. Postural sway was recorded at the first examination of the patient and 3 months later. After the acquisition of the static and dynamic pedobarogramm, 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 to their initial evaluation, patients decreased their static postural sway, in a percentage of 58%. The Optical Analogue Scale score was decreased in a percentage of 66%. Conclusion: Patients with a variety of foot deformities can 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, in people of this age.

Abstract No.: PP1183

Abstract Title: **MODIFICATION IN PEDOBAROGRAPHIC PARAMETERS OF STATIC STUDY IN PATIENTS WITH DISORDERS OF THE FOOT**

Authors(s): Farmakides A, Mani V, Chalida E, Fotinopoulos G, Mitsis V., Sioutis I, Aggeli V, Roussos N, Patatoukas D.

Presenting author: Mitsis B

Institution: Department "Asklepion" General Hospital, Voula, Athens - Greece

ABSTRACT: Aim: To compare the influence of prescribed insoles, after pedobarogramm in relieving pain and improving postural sway of patients with foot deformities Material and method: Seventy-seven subjects (56 women, 21 men), with pain, burning sensation, fatigue and callus formation referred to the pedobarograph laboratory participated in the study. Patients were referred from rheumatologists, orthopaedics and internal pathologists both from our hospital and the community. Pain was estimated using the Optical Analogue Scale, before and 3 months after the prescription of the insoles. Postural sway was recorded at the first examination of the patient and 3 months later. After the acquisition of the static and dynamic pedobarogramm, 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 to their initial evaluation, patients decreased their static postural sway, in a percentage of 58%. The Optical Analogue Scale score was decreased in a percentage of 66%. Conclusion: Patients with a variety of foot deformities can 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, in people of this age.

Abstract No.: PP1184

Abstract Title: PEDOPAROGRAPH STUDY IN HEBLEGIC PATIENTS AFTER BOTULINUM TOXIN A INJECTION

Authors(s): Mani V, Farmakides A, Fotinopoulos G, Chalida E, Sioutis I, Aggeli V, Roussos N, Patatoukas D.

Presenting author: Mitsis B

Institution: Department "Asklepieion" General Hospital, Voula, Athens - Greece

ABSTRACT: Aim: To investigate the influence of Botilinum toxin type A injection in the static study after pedobarogramm, in stroke patients. Material and Method: Seventeen patients (10 men 7women), included in this preliminary study. Left hemiplegia had 7 men (70%) and 5 women (71%). All patients have been injected in the soleus and posterior tibialis muscle. Five men and 3 women were injected in their gastrock muscle. A pedobarograph platform Medical Support Italia has been used for static study of the patients. Imrovement has been reported quantitative, (augmentation of the surface of the paretic limb) and qualitative (presence of heel print). Results: More than 70% surface augmentation of the paretic limb reported 70% of men and 57% of women. Twenty percent of men and 33% of women reported an augmentation from 31% to 69%, while 10% in both genders reported an augmentation of less than 30%. Ninety percent of men and 70% of women have been able to touch their heel on the floor. Conclusion: Botilinum toxin type A injection improves qualitative and quantitative parameters in the static study of pedobarogramm especially in men. The whole study is ongoing.

Abstract No.: PP1189

Abstract Title: **THESOMATIC CHRONIC PAIN EVALUATION, ADVANTAGES AND LIMITS OF NONPHARMACOLOGIC THERAPY**

Authors(s): Nica Sarah Adriana, Mologhianu Gilda, Andreea Murgu, Consuela Brailescu, Roxana Miclaus

Presenting author: Nica Sarah Adriana

Institution: "Carol Davila" University of Medicine and Pharmacy, National Institut of Balneoclimatology, Bucharest - Romania

ABSTRACT: Somatic chronic pain, as a real disease of the XXI century, can be sign of many types of pathology. Medical drugs often have limits and contraindications and alternative therapeutic solutions are needed. That is the way physical therapy, psycho-behavioral therapy and other forms of therapy (accupuncture, osteopathy, phytotherapy and so on) have gained credibility and some valuable results. We selected the patients suffering of somatic chronic pain, presented as inpatients or outpatients in National Institute of Rehabilitation. Due to the increased number of car accidents, stroke at different ages, occupational pathology with frequent distal trauma of the upper and lower limb, patients presented soft tissue and bone damages associating nociceptive and neurophatic pain, lumbar and cervical neurological or degenerative problems. In our study we analysed the correlation between different types of locomotor pathologies and the presence and types of pain, with or without association of degenerative, vascular or dismetabolic background. As non-pharmacologic therapy we used physical therapy, which can influence and modulate vasculotropic states of joints, soft tissue and also nociceptive and neurophatic chronic pain. The study developed the clinical-functional and pain evaluation (VAS scale, McGill questionnaire, Neuropathic Pain Scale, Quality of Life Scale). The goals of the therapy programme focus on clinical, pathophysiology and functional components as well the pain control. The results were analysed by statistical methods. Somatic chronic pain benefits of complex therapy and has functional consequences that change the personal independence and leads to autolimitation in social and private life as well as the quality of work and life as we try to prove in our study.

Abstract No.: PP1191

Abstract Title: **BOTULINUM TOXIN IN THE MANAGEMENT OF SIALORRHOEA IN ACQUIRED BRAIN INJURY, A CASE SERIES**

Authors(s): Áine Carroll

Presenting author: Áine Carroll

Institution: National Rehabilitation Hospital, Dublin - Ireland

ABSTRACT: Background: Sialorrhoea as a consequence of severe acquired brain injury can significantly negatively impact on quality of life and can also lead to skin excoriation and infection. Medications used in its management have many side effects which can cause problems in the severely disabled. Botulinum toxin is an effective treatment of sialorrhoea in a number of neurological conditions but may also have a role to play in the management of sialorrhoea following severe ABI. Case series description: We report on 8 cases of sialorrhoea following acquired brain injury causing a variety of problems, whose parotid glands were injected with Botulinum toxin type A (Dysport) 50mu each, under ultrasound guidance. Results: All cases had a clinically and statistically significant reduction in drooling as measured by the teacher drooling scale ($p=0.005$) and carers Visual Analogue Scale ($p=0.012$). One patient had transient self limited intra oral bleeding. Otherwise, there were no side effects reported. Discussion: This case series shows that intraglandular injection of BTX-A into the parotid gland leads to a reduction in drooling in adults with acquired brain injury. The 2 parameters showed a reduction in drooling at 2 weeks that was maintained at 6 months after injection. Botulinum toxin is an effective treatment for sialorrhoea associated with acquired brain injury. References 1. Lew KM, Younnis RT, Lazae RH. The current management of sialorrhoea. *Ear Nose Throat J* 1991;70:99-105 2. O'Dyer TP, Conlon BJ. The surgical management of drooling: a 15 year follow up. *Clin Otolaryngol* 1997;22:284-287 3. Borg M, Hirst F. The role of radiation treatment in the management of sialorrhoea. *Int J Radiat Oncol Biol Phys* 1998; 41:1113-1119. 4. Bhatia KP, Munchau A, Brown P. Botulinum toxin is a useful treatment in excessive drooling in saliva. *J Neurol Neurosurg Psychiatry* 1999; 67(5):697. 5. Jost WH. Treatment of drooling in Parkinson's disease with botulinum toxin. *Mov Disord* 1999; 14(6):1057. 6. Giess R, Naumann M, Werner E, et al. Injections of botulinum toxin A into the salivary glands improve sialorrhoea in amyotrophic lateral sclerosis. *J Neurol Neurosurg Psychiatry* 2000; 69:121-123. 7. O'Sullivan JD, Bhatia KP, Lees AJ. Botulinum toxin A as treatment for drooling saliva in PD. *Neurology* 2000; 55(4):606-607. 8. Porta M, Gamba M, Bertacchi G, Vaj P. Treatment of sialorrhoea with ultrasound guided botulinum toxin type A injection in patients with neurological disorders. *J Neurol Neurosurg Psychiatry* 2000; 70:583-540. 9. Pal PK, Calne DB, Calne S, Tsui JKC. Botulinum toxin A as treatment for drooling saliva in PD. *Neurology* 2000; 54:244. 10. Jongerius PH, Rotteveel JJ, van den Hoogan F, et al. Botulinum toxin A: a new option for treatment of drooling in children with cerebral palsy. Presentation of a case series. *Eur J Paediatr* 2001; 160(8):509-512. 11. Ultrasound-guided versus 'blind' intraparotid injections of botulinum toxin-A for the treatment of sialorrhoea in patients with Parkinson's disease 2004;106:93-96 12. Lim M, Mace A, Reza Nouraei SA, Sandhu G. Botulinum toxin in the management of sialorrhoea: a systematic review. *Clinical Otolaryngology* 2006; 31(4): 267-272. 13. Truong D.D., Bhidayasiri, R., Evidence for the effectiveness of botulinum toxin for sialorrhoea. *Journal of Neural Transmission* 2008;115 (4): 631-635 14. Heinen F. Sialorrhoea in paediatric neurology - the long way from case series to clinical studies. *Neuropediatrics*. 2008 Aug; 39(4):195. 15. Wilken B, Aslami B, Backes H. Successful treatment of drooling in children with neurological disorders with botulinum toxin A or B. *Neuropediatrics*. 2008 Aug; 39(4):200-4. 16. Stone CA, O'Leary N. Systematic review of the effectiveness of botulinum toxin or radiotherapy for sialorrhoea in patients with amyotrophic lateral sclerosis. *J Pain Symptom Manage*. 2009 Feb; 37(2):246-58.

Abstract No.: PP1193

Abstract Title: **DISORDERS OF CONSCIOUSNESS AND MISDIAGNOSIS, A RETROSPECTIVE REVIEW IN A NATIONAL REHABILITATION HOSPITAL**

Authors(s): Áine Carroll, Jacqueline Stowe, Alison McCann, Jacinta McElligott, Mark Delargy, Jacinta Morgan, Aisling Weyham, Aneesa Ally

Presenting author: Áine Carroll

Institution: National Rehabilitation Hospital, Dublin - Ireland

ABSTRACT: Disorders of Consciousness and misdiagnosis, a Retrospective review in a National Rehabilitation Hospital Authors: Aine Carroll, Jacqueline Stowe, Alison McCann, Jacinta McElligott, Mark Delargy, Jacinta Morgan, Aisling Weyham, Aneesa Ally. Institutional Affiliation: National Rehabilitation Hospital, Rochestown Avenue, Dublin, Ireland Objective: To describe the experience of a dedicated disorders of consciousness service and to identify the number of patients who were misdiagnosed as being in the vegetative state and to describe their characteristics. Design: Retrospective review of the healthcare records of patients admitted into the disorders of consciousness service. Setting: A National Rehabilitation Hospital with 46 beds for Brain Injury Rehabilitation 3 of which are dedicated to patients with disorders of consciousness. Subjects: 37 patients admitted to the low awareness service between 2002-2009 Outcome measures: Sensory Modality and Rehabilitation Therapy Assessment (SMART) Results: Of the 37 patients admitted to the disorders of consciousness service, 7 were diagnosed as being above minimally conscious, 22 were minimally conscious, 6 met the criteria for being vegetative. 2 remained unclassifiable at the end of the assessment. Of the 8 that had been diagnosed as vegetative prior to admission, none were found to be vegetative. Conclusions: Diagnosis of disorders of consciousness service requires objective assessment by experienced clinicians over a sustained period of time. Accurate diagnosis is required to facilitate communication and guide management. Despite considerable knowledge in this area, misdiagnosis is still common. Referral to a specialist service is recommended for appropriate management of such patients. However, this type of service is labour intensive and requires appropriate investment.

Abstract No.: PP1199

Abstract Title: RELATIONSHIP BETWEEN SAFETY AND GAIT PARAMETERS IN PATIENTS WITH A LOWER LIMB AMPUTATION

Authors(s): Boza R, Muniesa Jm, Tejero M, Guillen A, Duarte E, Belmonter, Marco E, Escalada F

Presenting author: Boza Roser

Institution: Servei De Rehabilitacio I Medicina Fisica. Parc De Salut Mar, Barcelona - Spain

ABSTRACT: Introduction: the aim of the study was to evaluate if there was a relationship between the safety during the gait, the prosthesis utilization, and gait temporo-spatial parameters (G-TEP) in patients with lower limb amputation (LLA), as well as the characteristics of the amputation. Methods and Subjects: A transversal study was performed with 17 LLA patients. Main variables: age, gender, time and level of amputation, post-prosthetization time, visual analogue safety scale (EVA-S), use of the prosthesis (Houghton scale), temporo-spatial parameters of gait analyzed with the GaitMat II system. Results: Demographic characteristic: Mean age: 60.59; 82.3% men, 52,9 % with femoral amputations, mean time post-amputation 79.29 months; mean time post-prosthetization 74.76months. EVA-S 6.35, Houghton scale median 8 (p 25-75 4-12). Mean G-TEP: velocity 0.64m/s; step length: right 0,43m, left 0,41m; step time right 0,68s, left 0,73s; single support time right 1,02s, left 0,98s; swing time right 0,42s, left 0,46s; cadence (steps/minutes) right 92,6, left 90,2. There was only a significant correlation between EVA-S values and the Houghton scale. Discussion: Despite G-PTE were asymmetrics, there wasn't a significant correlation between EVA-S and the Houghton scale, probably due to the post-prosthetization time of the sample. Conclusion: Gait safety is related to the use of the prosthesis. There was not a correlation between the G-TEP and the rest of the variables. References: Devlin M, Pauley T, Head K, Garfinkel S. Houghton Scale of prosthetic use in people with lower-extremity amputations: reliability, validity, and responsiveness to change. Arch Phys Med Rehabil 2004;85:1339-44.

Abstract No.: PP1200

Abstract Title: RECONSTRUCTION OF THE TIBIA AFTER SOFT TISSUE INJURY AND PHYSICAL THERAPY - CASE REPORT

Authors(s): A.Miholjcic, V. Arsic, D.Mitrovic, S.Pantelic

Presenting author: D.Mitrovic

Institution: Analife, Clinic for aesthetic Surgery, Belgrade - Serbia

ABSTRACT: Patient, 24 years old, suffered both legs injuries from two dogs bite. After the surgical treatment of wounds, when there was no danger of infection the first reconstructive intervention in the muscles and nerves was performed. After that the physical therapy was conducted to accelerate healing of soft tissue repair n.peroneus and to increase range of motion in the ankles. In the second act, after 6 months they were done in terms of aesthetic surgery scars dermal abrasion corrections nd YAG laser, injection fillers (PMMA) and the volume and leg lines were resolved with transplantation of fat from gluteal region. After these procedures the final physical treatment was conducted in order to strengthen the tibia musculature and to correct the walk. Total treatment time took 2 years.

Abstract No.: PP1201

Abstract Title: THERAPEUTIC EXERCISE IN STEINERT MYOTONIC DYSTROPHY – CASE REPORT

Authors(s): Ljoka C., Sallì M., Saraceni D., Foti C

Presenting author: Ljoka C.

Institution: School of “Advanced technology in Rehabilitation Medicine” Tor Vergata University, Rome - Italy

ABSTRACT: BACKGROUND: Steinert syndrome is described as an autosomal dominant inherited disease of the skeletal and cardiac musculature characterized by progressive muscle weakness and myotonia. Myotonia manifests with abnormally slow relaxation after strong voluntary contraction of the muscles. STUDY DESIGN: A case report of a patient with Steinert syndrome is presented. METHODS: A 45-year-man was treated by therapeutic exercises: muscle recruitment of all limbs, breathing exercise, active and passive articular mobility, deambulation and step training with correct posture and occupational therapy with hand training exercises. The muscle strength of interossei muscles, elbow flexor, anti-gravity muscles of the lower limbs were measured by a strain gauge. The functional autonomy was assessed by Barthel index. RESULTS: Initial Barthel scale: 78. Final Barthel scale: 95. Evident reduced strength of the bilateral interossei and lumbrical muscles with consequent deficit of hand movement (sx>dx) but better than the first evaluation. Tendon reflexes: Hyporeflexia. Coordination arm test: normal. Lower limbs: no deficit of global strength. Improved recruitment of tibialis anterior, quadriceps and gluteus muscles, persists though moderate atrophy of the gluteus. CONCLUSIONS: The muscle strength after one month of multi-therapeutic program was improved. Given the results obtained from the rehabilitation treatment, we confirm that the role of therapeutic exercise is essential in Steinert myotonic dystrophy. BIBLIOGRAPHY: The changes in muscle strength and relaxation time after a comprehensive rehabilitation program for patients with myotonic dystrophy. Moon JH, Na YM, and coll. Yonsei Med J. Aug; 37(4):237-42. Scoliosis in Steinert syndrome: a case report. Themistocleous GS, Sapkas GS and coll. Spine J. 2005 Mar-Apr;5(2):212-6.

Abstract No.: PP1202

Abstract Title: PERONEAL PERIOSTITIS IN THE FEMALE ATHLETE - A CASE REPORT

Authors(s): João Paulo Branco, João Páscoa Pinheiro, Inês Campos, Pedro Figueiredo

Presenting author: João Paulo Branco

Institution: Hospitais da Universidade de Coimbra, Coimbra - Portugal

ABSTRACT: Leg or can pain can be a debilitating problem for athletes in a variety of sports but especially in impact and endurance sports. The differential diagnosis of chronic leg pain in the athlete commonly includes muscle strains, stress fractures, diffuse medial tibial periostitis and chronic exertional compartment syndrome. Periostitis in the athlete is a common overuse clinical entity often found in the lower extremity. MRI and scintigraphic findings can be used to assure the differential diagnosis in difficult cases with stress fracture. The authors made a brief review of the literature and didn't find any case report. The authors present a rare case of a peroneal periostitis in a female athlete, practitioner of high competition distance running, who complaints of painful episodes in the distal fibula and peroneal tendons for the last 6 months. She presented pain at rest during the race, and at palpation of the described region. It was obtained a leg bone x-ray, bone scintigraphy and MRI, but only the latter confirms the diagnosis of peroneal periostitis. Keywords: leg pain, female athlete, peroneal periostitis

Abstract No.: PP1205

Abstract Title: PREDICTING OUTCOME FOLLOWING SPINAL CORD INJURY

Authors(s): Athanasios E. Kyriakides

Presenting author: Athanasios E. Kyriakides

Institution: Physical & Rehabilitation Medicine Dpt. 'Kentavro' Volos - Greece

ABSTRACT: Predicting outcome following spinal cord injury Introduction: Functional outcome in terms of capacity to walk is the most important issue that spinal cord injured patients desire to know. The prediction of this function is essential for the patient, his family and the rehabilitation team in order to organise the future. Methods: This article presents a review of the evidence for predicting neurological recovery following spinal cord injury. It also highlights the significance of the psychosocial approach of spinal cord injured patients and presents some ethical issues that arise in SCI rehabilitation resulting from the direct interaction of the doctor with the patient. Results: In latest years our knowledge of the course of neurological recovery has increased. This information enables us, based on the detailed neurological assessment to predict functional capacity with accuracy within the first days post-injury. Discussion / Conclusion: Basic requirements to predict functional outcome are the skill of performing an accurate neurological examination and also the knowledge of the relationship of function to recovery. Furthermore the ability to prognosticate performance in real life depends on possible limitations on implementing SCI guidelines in different European countries according to special national characteristics.

Abstract No.: PP1207

Abstract Title: DATA ANALYSIS OF HOSPITALIZED PATIENTS WITH STROKE

Authors(s): M. Micha, S. Kaligerou, P. Manthos, A. Tsivgoulis, G. Siamos, A. Papachristos, P. Cocconi & K. Petropoulou

Presenting author: M. Micha

Institution: B³ Department of Physical Medicine & Rehabilitation, National Rehabilitation Center, Athens – Greece

ABSTRACT: AIM: To compare patients with right or left hemiplegia after stroke, regarding frequency, hospitalization, duration, symptoms and functional results after discharge from rehabilitation center. MATERIALS AND METHODS: Retrospective study of 121 patients with stroke hospitalized in our clinic the last three-year period 2007-2009 , 77 men (63.6%) with mean age: 65 years. 25 patients (20.6%) suffered from hemorrhagic stroke and 96 patients (79.4%) from ischemic stroke with clinical picture of left hemiplegia in 50 patients (42%) and right hemiplegia in 71 (58%). 31 (25.6%) of those with right hemiplegia presented with aphasia : 20 (16.5%) had mixed aphasia and 11 (9%) had Broca's aphasia. Total mean hospitalization duration: 4 months, in left hemiplegia: 5.6 months and right hemiplegia: 3.3 months. Total mean hospitalization duration in patients with aphasia: 5.5 months. Out of 121 patients, 110 participated in rehabilitation program, including physical therapy, occupational therapy and speech therapy and swallowing training. 11 patients were discharged free will or transferred to other hospitals before program was completed. RESULTS: The functional ability was evaluated after discharge with Barthel index. 91 patients (75.2%) had improved skills in self-care and other activities of daily living (ADL), while in 30 patients (24.7%) there was not significant alteration. CONCLUSION: Our results are in accordance with the literature. The prolonged hospitalization time is not only related to disease severity and its manifestations, but also due to delayed onset of rehabilitation and lack of outpatient rehabilitation centers.

Abstract No.: PP1209

Abstract Title: A NEW LOCAL WEBBASED SEARCH TOOL FOR ORTHOPAEDICS

Authors(s): Stephan Grüner

Presenting author: Stephan Grüner

Institution: Orthopadische Praxen, Cologne - Germany

ABSTRACT: Introduction: Orthopaedics is a wide-spread category in medicine, and sometimes it is difficult for the patients to find the right expert for diagnosis and treatment in an acceptable distance. In the Rhineland area (Germany) with nearly two million inhabitants, a group of over 100 orthopaedic specialist in practice and hospital, organized in a local network called Kompetenznetz Orthopädie Unfallchirurgie Rheinland (competence net Orthopaedics Trauma surgery Rhine Area) created a webbased search portal <http://www.rheinortho.de> with a number of useful search tools as well for patients as well for doctors. Methods and Subjects Each member - representing in part more than the half of all orthopaedics in region - answers th a detailed questionnaire with up to over 80 items - concerning their qualifications, methods of diagnosis and therapy, membership in special insurance programmes a.o. Based on this items, we created a web based search engine. The portal is free of charge, supervised by an orthopaedic, and allows the search not only for one but also for combinations of matters, based on the address. Results Search is possible by name, address, 14 special qualifications (f.i. acupuncture, chirotherapy, rheumatology, physical therapy, sports medicine, special pain therapy, osteology, psychosomatic, a.o.), 14 special items of diagnosis/therapy (f.i. bone mass measuring, pulsating magnetic field therapy, laser therapy, injections of homeopathics and hyaluron acid, a.o.), about 50 operations (f.i. arthroscopy of different joints, endoprosthesis, osteotomy, foot surgery, a.o.) and membership in special programmes of selected insurances (f.i. endoprotheses and back pain therapy). It's possible to search in pre-given items or as a free search, here also for combinations. Added to this items, there is a road map search to every member and - if available - a link to the special homepage. Discussion Aim of this concept is not only PR for our members but first of all a quick - guided or free - search for the best specialist for the individual orthopaedic problem in an acceptable distance, as well for search for second opinions. Furthermore it is an improvement in process quality, for users free of charge and for the insurances a way to avoid unnecessary costs by dating the "wrong" doctor. Even for doctors it is a good way for quick search to find the best colleague.

Abstract No.: PP1213

Abstract Title: CHANGES IN DISABILITY STATUS AFTER PHYSICAL THERAPY IN CHRONIC LOW BACK PAIN

Authors(s): Milenković D, Radosavljević Z, Radosavljević N

Presenting author: Milenković D

Institution: Clinic for rehabilitation "Dr M.Zotovic", Belgrade - Serbia

ABSTRACT: Aim of study: The aim of this study was to examine changes in disability status of our patients suffering of chronic low back pain either after physical therapy combined comprehensive rehabilitation also included sessions with psychologist. Method: The study had a prospective observational design. First 60 consecutive adult patients with chronic low back pain referred to rehabilitation were asked to participate. All patients had individually designed physiotherapy, and than a half of them, randomly picked had also sessions with psychologist. Self-administered questionnaire (Oswestry Low Back Pain Questionnaire) was presented on admission and at discharge of rehabilitation. Results: In first group (which had sessions with psychologist) were 30 patients, 16 females (53.33%), and average age was 50.73 years. Average duration of their treatment was 14.93 days. In the other group (without psychologist sessions) were the same number of patients, 14 females (46.67%), and average age was 49.83 years. Duration of treatment in this group was 19.73 days in average. In first group after rehabilitation Oswestry Disability Index showed statistically significant decrease ($p=0.0013$). In second group was found less, but still statistically significant, decrease of Oswestry Disability Index ($p=0.046$). In six months follow-up 2 patients (6.67%) in first group and 4 from second group had problems associated with low back pain, which needed to be treated by physician. Conclusion: Results of our study confirmed that multidisciplinary approach to rehabilitation decrease disability, preserve working potentials and prevent relapses in low back pain patients.

Abstract No.: PP1215

Abstract Title: PROSTHETICS IN PROXIMAL FEMORAL FOCAL DEFICIENCY – A YOUNG ADULT'S RETROSPECTIVE

Authors(s): Luís Sequeira de Medeiros, Filipe Sá Cardoso, Joana Capela, João Diamantino

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ABSTRACT: INTRODUCTION Proximal Femoral Focal Deficiency (PFFD) refers to a spectrum of defects in the femur affecting the femur itself, the hip joint, the knee joint, and the musculature powering the hip and knee joint. As a congenital disease, it demands an evolutionary rehabilitation approach, particularly in what prosthetization is concerned. This work intends to describe the rehabilitation program milestones of an individual with PFFD, from childhood to adult age. CASE 28 year-old male, with PFFD, diagnosed at birth, without other clinical conditions or relevant family history. He was referred to our centre at 11 months age. The proximal femur was partially absent, and the entire limb overall shortened. Exoskeleton prosthesis was prescribed and a rehabilitation programme was initiated. During his first year of life, 2 prosthesis were needed, and afterwards one annually until the age of 17. Since then, he has had a new prosthesis prescribed every 2 years. The decrease in functional and social impact of the disease through the different developmental stages, the main goal proposed, was fully achieved. At present, he doesn't have any ADL, social or professional limitation. CONCLUSION A nearly unrestricted activity and participation is possible with PFFD, as long as an early, multidisciplinary and close rehabilitation approach is accomplished. Understanding the capabilities and limitations of prosthetic intervention is an essential tool to successful intervention, for better functional outcomes.

Abstract No.: PP1216

Abstract Title: AMPUTATIONS AND MULTIPLE NEUROLOGICAL INJURIES - A REHABILITATION AND PROSTHETICS CHALLENGE

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ABSTRACT: Introduction: The use of prosthetic, orthotic and assistive devices can improve functional independence in amputees, leading to an improved quality of life. Since many types of prosthetic and orthotic devices exist, it is important to tailor them based on individual needs, particularly in a patient with associated neurological impairment. We describe a rehabilitation programme, prosthetic and orthotic devices and functional outcome. Case: A 29-year-old male, prior activity level 3, suffered a traumatic event with the following polytrauma sequelae: traumatic brain injury with right hemiparesia, left transhumeral and transfemoral amputation, right radius, femoral condylar and lower leg bone fracture and right brachial and lombo-sacral plexus lesions. After clinical stabilization the patient underwent multiple orthopaedic procedures. Two years later he was referred to our centre and started a daily outpatient rehabilitation programme. An endoskeleton trans-femoral prosthesis, an orthotic device with a right arm socket connected to a walking device and a KAFO were prescribed. The aim was to increase independence in ADL and achieve domiciliary gait. At present, the patient walks under supervision with both the prosthetic and orthotic devices and one crutch. Conclusion: The association of homolateral lower and upper limb amputation, with peripheral and central neurological lesions and orthopaedic injuries turns this case into a complex rehabilitation challenge. The multidisciplinary approach was crucial to achieve the proposed functional goals and the best patient-targeted prosthetic solution.

Abstract No.: PP1217

Abstract Title: IMPLEMENTATION OF A DISABILITY SPORTS CENTER: WHAT PROBLEMS?

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ABSTRACT: Sport's practise is a right of all citizens, including those physically disabled. On the basis of this premise, the phenomenon of sport for people with disabilities has been the target of the most varied attention, either by governments or by hospitals. Sport's advantages are numerous, including physical and biopsychosocial aspects. No less important, promotion of social integration of our patients is vital to their recover and well-being. PRM services, due to proximate contact with these patients, can constitute not only, a source of practitioners and of advertisement of adapted sports, but also, an important part in the role of the organization of sports centers. Although everyone knows the importance of sport in rehabilitation, the implementation of a sports center in a hospital finds many barriers. This poster aims to make a reflection about the difficulties and barriers that arise when trying to implement a sports center in a PRM service.

Abstract No.: PP1218

Abstract Title: TRAUMATIC BILATERAL LOWER-LIMB AMPUTATION – STEP BY STEP

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Institution: Hospital de Faro EPE, Faro - Portugal

ABSTRACT: Introduction: The bilateral lower-limb amputation is a challenging medical condition both to the rehabilitation team and the patient. The traumatic amputation is a sudden event with structure, function, activity and participation loss. The main aim of the rehabilitation team is to restore functional mobility and independence in all daily life activities. The authors describe a clinical case, rehabilitation programme, prosthetics and functional evolution of the patient. Case: The authors describe the case of a 29 year-old man, baker, with an activity level 3 and with no relevant personal clinical conditions. He had a right hip disarticulation and a left transfemoral amputation, both secondary to a traumatic event. He started an inpatient rehabilitation programme that maintained as a daily outpatient, and two endoskeletal prosthesis were prescribed 8 months later. Presently he is independent in all daily life activities and walks with two prosthesis and two crutches. The professional reintegration is still in progress. Conclusion: A hip disarticulation and a transfemoral amputation must not be discouraging. Despite the increased energy expenditure related to activity and participation, the young age, absence of other clinical conditions and an early start of the rehabilitation programme led to a successful prosthetization and to an acceptable functional accomplishment.

Abstract No.: PP1221

Abstract Title: REHABILITATION PROGRAM AND KINESIO TAPING IN A CHILD WITH CONGENITAL ABNORMALITIES OF RIGHT LOWER LIMB

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ABSTRACT: Background: Children with congenital abnormalities of lower limb have structural and functional problems because they have severe proprioceptive disturbances of their body. Our aim is to evaluate the effectiveness in child of a clinical program which combines Kinesio taping (KT). We focused on the possibility to improve knee-ankle-foot stability and to increase perception of the right lower extremity. Case report: 3 years old child, male, with congenital abnormalities of right lower limb surgically treated. He uses a stiff ankle foot orthosis. He didn't have control of the limb with rotation of knee and supination of foot during the gait. Methods and Materials: We have used Bobath's method that suppresses undesirable reflexes and abnormal postural reactions, with proprioceptive and tactile stimuli, Manual therapy and KT to increase ankle and foot stability to facilitate movement patterns and muscle use with mechanical correction techniques to talus calcaneus and proximal tibio-fibula joint and functional correction to improve the dorsiflexion of ankle with 50% tension and "I" strips. The treatment was three times a week for 2 hours. KT was applied before the rehabilitation session. Outcome measures comprised: Video recording during the gait and in play-room, gait assessment rating scale, clinical observation (Photography) and anecdotal report from parents. Conclusion: After 3 months of treatment the child has more control of right lower limb, is able to crawl, to cycle and to go upstairs and downstairs. This is only preliminary study but it's possible to observe great improvement in child through the combination of traditional rehabilitation program with KT. Bibliography: Effect of kinesio taping on proprioception in the ankle and in the knee, Murray H. 2001, Journal of occupational therapy 31,1 Pilot Study: investigating the effects of Kinesio taping in an acute pediatric rehabilitation setting. Yasukawa A. 2006, American Journal of occupational therapy 60,1

Abstract No.: PP1224

Abstract Title: CASE REPORT: ASSESSMENT OF HYALURONIC ACID INJECTION IN THE OSTEOARTHRITIS OF THE WRIST

Authors(s): Foti C., Salli M., Ciotti C., Laurini A., Tiberti S.,

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Institution: School "Advanced technology in Rehabilitation Medicine" Tor Vergata University, Rome - Italy

ABSTRACT: Introduction: Osteoarthritis affects millions of people all around the world and osteoarthritis of the wrist is one of the most common afflictions. Wrist pain caused by osteoarthritis results in stiffness and weakness in the wrist. Osteoarthritis of the wrist can occur due to normal, everyday use of the wrist and forearm, or may be a result of a traumatic injury. Materials and Methods: A 73-year man affected by radio-carpal osteoarthritis was treated by hyaluronic acid injection once a week, repeated for four weeks. We assessed the ROM recovering by goniometric measurement at the beginning and at the end of the treatment, the pain reducing and the daily life activities improving. The assessment scale used was: Osteoarthritis of the hand, Mc Gill Pain Questionnaire, Wrist pain and disability. Each scale was administered at the beginning and at the end of the treatment. Results: At the end of treatment we compared the data obtained from the assessment scale and from the goniometric measurement. Initial Mc Gill Pain questionnaire 24, Final Mc Gill Pain questionnaire 14; Initial Wrist Pain scale 55%, Final Wrist Pain scale 40%; Initial Vas 7, Final Vas 4; Initial Wrist Flexion 46°, Final Wrist Flexion 70°; Initial Wrist Extension 40°, Final Wrist Extension 46°; Initial Radial deviation 32°, Final Radial deviation 36°; Initial Ulnar deviation 12°, Final Ulnar deviation 20°. Given the results obtained from 4 hyaluronic acid injections in a period of one month, we confirm that the hyaluronic acid has an essential role in the treatment of therapeutic exercise is essential in Steinert myotonic dystrophy Conclusion: Given the results obtained from 4 hyaluronic acid injections in a period of one month, we confirm that the hyaluronic acid has an essential role in the treatment of wrist osteoarthritis.

Abstract No.: PP1225

Abstract Title: THE EFFECTS LIPIK SPA PROGRAMMES ON SYMPTOMS OF KNEE OSTEOARTHRITIS

Authors(s): S. Rendulić Slivar, D. Marošević, N. Šubert, I. Žilić

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ABSTRACT: Introduction: The main aim of the research was to compare the effectiveness of various spa programmes for knee osteoarthritis (OA), which are nowadays used in Lipik and try to demonstrate measurable effects on symptoms of knee OA.

Methods and subject: Ten-day longitudinal experiment was conducted and comparison of Lipik spa programmes that included hydrokinesitherapy (HKT) in the pool with thermomineral water, exercise in the gym (KT), marble bath (MK), among 41 subjects (32 women, 9 men) age of 54 to 80 years, with periodical clinical symptoms of knee OA. Participants were divided in three small groups: Group I (n=20) HKT+KT+MK; Group II (n=10) HKT+MK; Group III (n=11) MK. Among the pattern of participants in some groups there was not statistically significant difference in general characteristics such as age ($M 65.23 \pm 5.30$), BMI (32.01 ± 2.92) and functional status (Lequesen index 11.68 ± 3.30). Effects of different programmes to pain (by VAS), range of movement in the knee (F/E in °), strength of knee extensor muscles (in kg/cm^2) and functionality (Lequesen index) were estimated initially and finally. The values are compared by dependent T-test. The differences between groups are estimated by ANOVA.

Results: Subjective improvement is the most prominent in group III with a traditional bath ($p_3 < 0.01$). The all groups are showing effects on pain ($p < 0.01$, G_1 36%; G_2 54%; G_3 56%) and functionality ($p < 0.01$, G_1 24%; G_2 44%; G_3 50%). Muscle strength are more obvious in groups that exercised (I, II): ($p_1 = 0.002$, 28%; $p_2 = 0.05$, 24%). Flexibility was significant increased in the group I ($p_1 = 0.00$, 8%) with partial, but insignificant increase in the groups II, III ($p_2 = 0.14$, 5%; $p_3 = 0.06$, 4%).

Conclusion: The study proved the usefulness of applying the spa programmes that involved training in thermomineral water, gym and marble bath on reduce of the knee OA symptoms.

Key words: knee osteoarthritis, kinesitherapy, hydrotherapy, marble bath.

Abstract No.: PP1227

Abstract Title: CLINICAL PATTERNS OF NEUROPATHIC PAIN IN PATIENTS WITH END STAGE RENAL DISEASE

Authors(s): Piscevic V, Dimkovic N

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ABSTRACT: Introduction: Neuropathic pain is complex chronic pain state which is caused by damage or dysfunction to the nerves or by damage of the brain, brainstem and spinal cord, in which the predominant mechanism is aberrant somatosensory processing both at the site of injury and areas around the injury. Symptoms may include shooting and burning or piercing pain, tingling and numbness or electrical pain. Objectives: To determine the clinical patterns of neuropathic pain in patients with end stage renal disease receiving long-term peritoneal or hemodialysis (PD/HD). Material and methods: Retrospective analysis of medical records from 30 (of all 324) hospitalised PD/HD patients of both gender from Clinical Department for Renal Diseases, Zvezdara University Medical Centre Belgrade Serbia who were on rehabilitation program from December 2009 to Jun 2010. In all 30 patients were diagnosed neuropathic pain problems. Results: The classification of neuropathic pain in end stage renal disease patients was divided into peripheral polyneuropathy 25 cases (83,3%), radiculopathy 4 cases (13,3%), peripheral mononeuropathy 1 case (3,3%). The most common reason for end stage renal disease was arterial hypertension 12 cases (40%), followed by diabetes mellitus and arterial hypertension 8 cases (26,6%), other kidney problems 7 cases (23,3%) and diabetes mellitus 3 cases (10%). The commonly proscribed treatment (therapy) were HD 17 cases (56,6%), followed by PD 9 cases (30%), no PD/HD 4 cases (13,4%) and duration of dialysis treatment was from 2 months to 15 years. The nature of neuropathic pain was dysesthesia in all cases. The common location of neuropathic pain were lower extremities 23 cases (76,6%), pain in spinal area 5 cases (16,6%), and upper extremities 2 cases (6,8%). The treatment of neuropathic pain was oral medication 3 cases (10%), nerve block 4 cases (13,4%), intra venous medication 4 cases (13,4%), physical therapy 19 cases (63,2%). Conclusion: Our results would be helpful in understanding the various clinical patterns of neuropathic pain in patients with end stage renal disease.

Abstract No.: PP1228

Abstract Title: DO OSTEOARTHRITIS PAIN IN PATIENTS ON HEMODIALYSIS COULD BE EASY AND SAFE RELIEF WITH SINGLE CORTICOSTEROIDS BLOCK INJECTION?

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ABSTRACT: Introduction Osteoarthritis (OA) is the most prevalent degenerative joint disease, caused by an imbalance of metabolism processes in cartilage, bone and synovial membrane causes pain, leads to a loss of morbidity and several physical limitations. In population with normal kidney function OA disorder mainly affecting elderly people (over 55 to 60 years of age). In patients on hemodialysis (HD) there is no ageing rule for starting OA, through literature and our experience, one of the main reasons for starting and very fast exposing of OA is duration of HD. Given the aging HD population and the increasing prevalence of comorbidities it is not surprising that chronic pain is a particular problem for patients on HD. A synergistic effect of hyperparathyroidism (such as calciphylaxis and renal osteodystrophy), β -2 amyloidosis and OA in the development of bone pain may contribute to the high prevalence and severity of musculoskeletal pain in this population and could be equal in severity to neuropathic and ischemic pain. Corticosteroid intraarticular injections are widely used to palliate the symptoms of osteoarthritis but very rare in HD population because of possible side effects. Objective The goal of this study was to determine whether or not the single administrations of corticosteroids can relieve the OA pain in patients receiving HD and to show if there are any side effects of thus peri/intraarticular block injection. Material and Methods We covered 30 patients of both sexes (31 to 74 years old) treated by chronic HD program at Clinical Department for Renal Diseases, Zvezdara University Medical Centre Belgrade Serbia, during the period from January 2002 to January 2009. The inclusion criteria were: patients must be more than one year on HD, dominant pain in one joint due to OA of at least 5 of 10 VAS at the time of inclusion; and a normal general physical examination of the affected joint, and radiography verified OA. Patients were divided into several groups according to the age, duration of HD, duration of pain, duration of physical limitations. The influence of intraarticularly injected corticosteroids on functional and clinical parameters was analysed by screening visit which took place within 3 weeks prior to inclusion in the study. The study period included follow-up examinations after 1, 3 and 26 weeks after the first injection. During all control checking study periods we performed biochemistry blood analysis and in few cases we repeated radiography. Results During the initial and follow-up period of 26 weeks in all 30 patients who were covered in the study no severe adverse reactions were observed due to the therapy such as bleeding in the place of injection's administration and in deeper tissue, swelling of joint, infection, gastric problems and allergic manifestation. There was no disturbance in dialysis adequacy and abnormality in blood sample analysed parameters. During the first 4 weeks compared with baseline, resting pain (VAS) and after that weight-bearing pain (VAS) was defined as the primary efficacy measure.

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Rest pain was reduced in all the study groups and in all patients. There were no statistical differences between the groups comparing to duration of HD during this period. In the study period between 4 and 26 weeks significantly more patients in the group of more than 8 years on HD dropped out because of pain (9 of 30 patients requiring further treatment such as the protocol of 3 injections in 3 consecutive weeks). We got the better recovery of physical limitations but as we conclude that it is not only connected with OA pain it is also connected with HD's comorbidities. Conclusions Treatment with block injection of corticosteroids as performed in the present study is effective and safe in patients on HD with OA. The treatment resulted in a functional improvement of the joints and had a good pain lowering effect in patients suffering from OA and with no side effects in treated patients, and shown to be a safe form of treatment.

Abstract No.: PP1229

Abstract Title: EFFECT OF PREVENTIVE CORRECTIVE EXERCISE ON POSTURAL STATUS AND STATUS OF FEET OF PRESCHOOL CHILDREN

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ABSTRACT: Introduction: The modern way of life rich unbalanced, irregular eating and luxuriously, the expansion of computer technology, excessive television watching, all of which leads to obesity and hypokinesia, as well as forced, irregular, nonphysiological position of the body, and inducing emergence of postural disorders and flat feet, which are increasingly affected at pre-school children. Statistics indicate that children in Serbia 2006. spend leisure time in most of the percentage in watching television, compact discs and videotapes (73.3%), and only one-third of children in Belgrade has satisfactory physical activity, while those in underdeveloped regions and the poorest households is estimated at 22.5%. Statistics also indicate a high percentage of children with postural disorders (over 65%) with a constant tendency to increase, and the high percentage of children with flat feet (over 65%) with a constant tendency to increase, hence it is necessary to start work as soon as possible to prevent plastic period of child development. Objective: To determine efficiency of preventive and corrective gymnastics on postural status and anthropometric characteristics of the spine and feet, and the feasibility of such a program content in preschools. Methodology: The research was conducted in the pre-school institution "Jelica Obradovic" in Mladenovac by implementing programs accredited by the Ministry of Health and Sports, called "Be fit to keep healthy" which consisted of games and exercises aimed at strengthening the muscles shoulder belts, trunk and pelvis; proper breathing, posture and gait, the creation of solid muscle corset, according to the appropriate protocol, for 6 months on a sample of 350 preschool-age children of 5.5 to 6.5 y. The initial and final posture assessment and status of the spinal column is carried out by reviewing the downloaded child, observing from the front, rear and in profile are analyzed with the following features: protrusion of the head, bent shoulders, relaxation of anterior abdominal wall, anterior pelvic tilt, rekurvatum of knees, the existence of one or more spinal curvature, curve reducability, rigidity of the bend at the side of trunk flexion, the appearance of paravertebral gibbosity with the convex curve at the front of the trunk flexion with springy knees, bumpy ribs with concave curves on the front of the chest, the lower position of shoulders and shoulder-blades on the side of concavity, denivelation of pelvic asymmetry triangle stature, shortening of lig. and muscle of concavity side (m.iliopsoas) hypotrophy convexity muscle on the side of the curve. In assessing the status of foot part is a group of 200 children, of which the experimental group that is implementing the program consisted of 120, and control group of 80 children did not practice. The program consisted of games and exercises to strengthen the flexion of the foot, supination of feet, and crural muscles in general for 6 months.

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Abstract Title: EFFECT OF PREVENTIVE CORRECTIVE EXERCISE ON POSTURAL STATUS AND STATUS OF FEET OF PRESCHOOL CHILDREN

Initial and final evaluation of the status of the feet was performed using classical plantography and analysis by the method Tompsena (supplemented with Majer's model). Results: The discriminative analyses were diagnosed and treated three postural statuses in relation to the following characteristics: 1) normal findings, 2) Insuffitientio posturalis 3) Scoliosis oz. laevioris. Initial assessment of the status indicated: normal findings in 130 children (37.1%); Insuffitientio posturalis in 155 children (44.3%); Scoliosis gr. laevioris in 65 children (18.6%). For the control assessment after 6 months of application of this program ie. percentage of children with normal findings was increased to 260 (74.8%); Insuffitientio posturalis be reduced to 60 17.1%), and the percentage of children with scoliosis oz. laev. reduced to 30 (8.7%). After discriminative analysis were diagnosed and treated three feet status: 1) normal foot, 2) the first level of suspended foot 3) the second level of suspended foot. Initial assessment of the status of the feet of experimental groups indicated: normal feet to 35.56% in the first degree suspension of 49.26%, the second level of 15.18%. Initial assessment of the control group showed the normal foot at 30%, first degree suspension in 53.75%, the second level of 16.25%. For the control assessment after 6 months in the experimental group, the percentage of children with a normal foot is 47.50%, with the first level of 39.17, and other levels of 13,33%. Control group at the end of the study did not significantly differ with respect to the beginning of the study. Conclusion: The program has proven very influential in these anthropometric characteristics as it is strongly recommended for the prevention and correction of postural status, as well as both foot deformation of preschool children in organized conditions, and surveys with teachers and parents confirm that there are a number of advantages, as well as a great motivational force for the inclusion of parents in times cacophonous acceleration of growth and frequent spinal deformities and foot to accept the recommendations. Key words: postural status, the status of foot, scoliosis, flat feet, preschool age, preventive-corrective exercises

Abstract No.: PP1230

Abstract Title: **ALGONEURODIYSTROPHY: THERAPEUTIC AFTER-STROKE PROBLEM/OUTCOME**

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ABSTRACT: Algoneurodystrophy/reflex sympathetic dystrophy syndrome/shoulder-hand syndrome etc. is a frequent, early and common complication of stroke, which exists apart from other late complications flexoextension synergy, and it significantly prolongs the rehabilitation process. The theory of sympathetic arc presupposes that the abnormal sympathetic activity reflex arc produces vascular disorders at the periphery, which, in turn, are responsible for clinical signs such as edema, pain, osteoporosis, fibrosis of the soft tissue etc. and consequently causes contracture of humeroscapular articulation (HSA) or/and permanent invalidity. The basic motive for the accomplishment of this paper was to prevent early (algoneurodystrophy), and afterward, the late complication (flexoextension synergies). In order to achieve the desired goal we had to recognize symptomatology, apply timely and adequate therapy which would lead us to the best possible outcome of this therapeutic problem; in other words, we worked on the prevention of invalidity, and that was the main goal of rehabilitation. For that purpose, we worked with 3 groups of patients: experimental (E) with early begins of algoneurodystrophy (gradus 0-1) and 2 control groups (C1 I C2) with the deeper signs (Gradus 1-2). Both E and C1 groups had similar therapy (relaxation, positioning, kinesio-bobath therapy and in addition soft laser, LFPEMF and DD (DF+CP+LP). Electro procedures were applied along the painful hand. C2 group of patients was treated with the other usually standard procedures. We observed the following measures at the beginning of the treatment and at dismissal: pain (VAS scale), color and temperature of skin, ROM (range of movements), TMP (test of motor patterns), FIM (functional independence measurements), Aschworth scale etc. After we summarised the result, it was noticed that prompt regression of subjective discomforts took place in both E and C1. But there was a statistically significant difference between those groups, in favor of the E group, in terms of all observed parameters. These results point to the necessity of right therapy, quite time and tight goal of team work, which is the prevention of complications and/or secondary invalidity, in order to achieve the best possible quality of life.

Abstract No.: PP1231

Abstract Title: STRIATAL HAND AND TOE & BOTULINUM TOXIN TYPE A

Authors(s): Ana Chumbinho; Sara Lorga; Maria Cunha; Luísa Medeiros

Presenting author: Maria Cunha

Institution: Centro Hospitalar de Lisboa Central, EPE, Lisbon - Portugal

ABSTRACT: CHLC Introduction Striatal hand is commonly due to lumbrical dystonia, characterized by MCP joints flexion, PIP joints hyperextension and DIP joints flexion and thumb adduction. Extensor hallucis longus dystonia causes striatal toe with hallux hyperextension. Striatal hand affects most ADL's while striatal toe is associated with gait and shoes wearing impair. This paper/s aim is to review striatal hand and toe clinical features and to demonstrate efficacy and safety of BTxA treatment based on 2 case reports. Case Report 1 Female, 48y, hypertensive, ischemic stroke with left hemiparesis (brachial predominance). 2 months later: fixed painful first left toe hyperextension, gait impairment and footwear choice restriction. Striatal toe was diagnosed and extensor hallucis longus injected with BTxA. Significant improvement with pain relief. Periodic treatment continues, with beneficial effect for about 10 months. Case Report 2 Male, 30y, car accident victim, traumatic brain injury (TBI). Tetraparesis, walk inability, right facial palsy and left 4th and 5th MCF extension deficit. After Rehabilitation program: independent gait (with walking aids), under supervision. 4 months later, striatal left hand and toe was diagnosed and lumbricoid and extensor hallucis longus muscles were injected with BTxA. Hand and toe deficits improvement and BTxA effects for about 4 months. Conclusion Striatal hand and toe treatment with BTxA has proved to be safe, effective and a cost-effective therapy.

Abstract No.: PP1232

Abstract Title: NEUROGENIC SCAPULAR WINGING

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Presenting author: Maria Cunha

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ABSTRACT: Scapular winging (SW) is a rare, potentially disabling condition that leads to limited upper extremity functional activity. It's easily diagnosed by scapula inspection. It may be due to traumatic, iatrogenic injury or spontaneous/idiopathic. Most cases are caused by lesions of the long thoracic, spinal accessory or dorsal scapular nerve that innervate the serratus anterior (SA), trapezius muscles and rhomboid muscles respectively. This paper's aim is to review neurogenic scapular winging, based on a case report. Case Report Male, 29y, right-handed, no relevant past medical history. April 2010: "spontaneous" right scapular winging with shoulder movements limitation. A few hours duration intense nocturnal right shoulder pain 2weeks before and a self-limited gastroenteritis 1month earlier. PE: medial scapular winging, exacerbated by shoulder flexion and push-up and right proximal brachial monoparesis, with limited active shoulder abduction and flexion, a weak bicipital and radial jerks. EMG (June) corroborated clinical long thoracic nerve mononeuropathy. A Brachial Neuritis (monosymptomatic form) was diagnosed and Rehabilitation was proposed. Conclusion SW is diagnosed by scapula inspection but its etiology is often more elusive. A detailed anamnesis is crucial for an accurate diagnosis. EMG testing is the only definitive diagnostic test for SA, trapezius and rhomboids muscles paralysis and is essential for determining the muscle involved and denervation degree. SW should be treated conservatively, allowing time for spontaneous recovery (6-24mo). If not patients become candidates for corrective surgery.

Abstract No.: PP1233

Abstract Title: ASSESSMENT OF THE FUNCTIONAL CAPABILITIES OF THE ELDERLY ON THE TERRITORY OF BELGRADE, INCLUDED IN THE PROGRAMME OF HOME CARE EXISTING AS PART OF THEIR COMPREHENSIVE INTEGRATIVE DEINSTITUTIONALIZED TREATMENT AND REHABILITATION

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ABSTRACT: The increase of the number of elderly people in the population, which comes with increased life expectancy, brought into focus the need for developing a system of comprehensive care for this population category, having in mind the ailments and conditions which bring about the decrease of functional capabilities and the fact that old age in itself isn't a disease, but a normal phase of the life cycle. To address this problem it was needed to adequately organize home care services in big cities, which presupposes a comprehensive deinstitutionalized care system for this category of patients, and would enable them to lead a life of adequate quality, which means that the elderly person which is in need of care lives in his/her own apartment, in the vicinity of relatives, friends and, if need be, a priest. In this retrospective-prospective study we had a representative sample of one hundred patients who suffered a cerebro-vascular insult, were treated from their homes and rehabilitated in Belgrade during the year 2010 with the help of the home care services, Institute of Gerontology and Home Care and other institutions and organizations. All of the patients participated in a regular rehabilitational programme, with respect to all of the principles of rehabilitation (timeliness, continuity, individual approach, progressiveness etc.). The sample was observed during a period of six months. FIM test was employed in result evaluation, which was done in the beginning, after three and six months from the beginning of the treatment. By comparing the FIM test scores from the beginning of rehabilitation and after three months we observed a statistically significant difference. Also, by comparing the FIM test scores after three and after six months we found a statistically significant difference, in favour of the six months period. By comparing the scores from the beginning of the treatment and those after six months, we observed a statistically highly significant difference. The application of the comprehensive deinstitutionalized health care system with the population of the elderly is of outstanding significance, and the adequate application of all the rehabilitation principles has its place in the process of increasing the quality of life of elderly patients.

Abstract No.: PP1235

Abstract Title: HYDROTHREPY IN THE TREATMENT PATIENTS WITH DEGENERATIVE CHANGES OF THE KNEE AND HIP JOINT

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ABSTRACT: Introduction: The occurrence of pain disorders caused by the degeneration of the knee and hip joints is a common cause of significant movement constraint. These disorders we observed in adult and elderly patients. In our paper we focused on the rehabilitation of people with the degeneration of the knee and hip joints. The authors show a physiotherapeutic treatment in which kinesytherapy in a rehabilitation swimming pool does play an important role. Material and Methods: The patients were included in our study according to their ailment, the radiological image and the results of the clinical examination. There were four groups of patients with degenerative disorder of the knee and hip joint. All groups were treated with slow-alternating magnetic field and kinesytherapy. In two (one with knee degeneration changes and one with hip degeneration changes) of the four groups the treatment was complemented with kinesytherapy in a rehabilitation pool. The treatment in all of the groups lasted four weeks. Results: The assessment of the results of the treatment was based on the Modified Laitinen's Questionnaire and the Visual Analog Scale of Pain (VAS). The results collected in the following surveys were compared using the Wilcoxon's Test for the paired samples. The comparison between the groups was done with the Man-Whitney-Wilcoxon's Test. Conclusions: 1. Groups of the patients with degenerative disorder of the knee and hip joint were treated with good effect with the kinesytherapy in a rehabilitation pool. 2. The improvement assessed in the Modified Laitinen's Questionnaire and using the VAS was significant, which could be statistically shown.

Abstract No.: PP1236

Abstract Title: SPONDYLO-EPIPHYSEAL DYSPLASIA CONGENITA TREATED WITH A COMPREHENSIVE REHABILITATION PROGRAM - CASE REPORT

Authors(s): Stavrou Korina, Pappas Nektarios, Barret Kathy, Efthimios Kouloulas

Presenting author: Stavrou Korina

Institution: Apolloneio Rehabilitation Center, Larissa - Greece

ABSTRACT: Introduction: Spondylo-epiphyseal dysplasia congenita is a disorder of bone growth that results in dwarfism, skeletal abnormalities, disorders in vision and hearing. Method and Subjects: The present case report focuses on a 12 y.o female. Upon initial assessment she presented inability to walk without the support of crutches due to contractures bilaterally and muscle wasting in the hips and knees severely limiting ROM and causing pain (VAS 7). Kyphoscoliosis with underlying lordosis present in her spine in combination with arthritic joints (upper and lower limbs) contributing to her limited balance and mobility. A 35% difficulty in hearing was also present. The patient participated in a comprehensive rehabilitation program consisted of therapeutic exercise, use of physical agents, occupational therapy, Biodex Gait Trainer, BioRescue, and hydrotherapy sessions. Results: After one month follow-up, pain was significantly decreased to VAS 1, ROM and muscle strength increased enough for this patient to walk without crutches (only supervision) with improved balance and enough to use the Biodex Gait Trainer which initially was unattainable. Discussion and Conclusion: A comprehensive rehabilitation program significantly improved gait pattern, balance and ADL's performance.

Abstract No.: PP1237

Abstract Title: NUTRITIONAL SUPPORT (INTESTINAL FEEDING) AND ITS CORRELATION WITH THE OUTCOME IN STROKE PATIENTS

Authors(s): Vasiliki Kouloula, Christos Rizos, Tania Avgerinou, Efthimios Kouloulas

Presenting author: Efthimios Kouloulas

Institution: Apolloneio Rehabilitation Center, Larissa - Greece

ABSTRACT: Introduction Feeding choice in stroke patients is a difficult decision. 50% of stroke patients are undernourished during their hospitalization. The aim of the review is to present the relationship of tube feeding with the outcome in stroke patients. Method - Subjects Many stroke patients during rehabilitation phase are undernourished. This poor nutritional status may be due to: 1.Low mental status, 2. Muscle weakness of the upper limbs, 3. Poor mobility, 4.Unsafe swallowing, 5. Poor set of teeth and has been correlated with poor patients' outcome, longer length of stay, increased complications and mortality rate. Food supplements of protein and energy composition, melted foods and thick fluids are usually recommended. Results Intestinal feeding is recommended till improvement of patient's chewing and swallowing function and nutritional status is achieved. Intestinal feeding offers the appropriate nutritional ingredients, decreases aspiration incidents and facilitates rehabilitation. Mortality rate has been reduced in stroke patients with intestinal feeding support. The kind of the intestinal feeding varies between Nasogastric tube (Levin-NG) and Percutaneous Gastrostomy (PEG). NG tube is safer and is used in patients that need intestinal feeding in the first 2-3 weeks post stroke. PEG is recommended in patients who can not be fed through NG or intestinal feeding is lasting longer than 2-3 months. Stroke patients who were supported for time longer than 25% of their length of stay with intestinal feeding presented better improvement either in motor or cognitive part of FIM and had a better outcome. Conclusions - Discussion Technical nutritional support (tube feeding), in combination with suitable food supplements, is a sufficient nutritional support during rehabilitation period, related with better cognitive and motor outcome in patients suffering of serious stroke.

Abstract No.: PP1238

Abstract Title: MEDIAL CALCANEAL NERVE ENTRAPMENT – A CASE REPORT

Authors(s): Evrim Karadag-Saygi, Ozlem Ozkok, Ece Ozcan, Cihangir Tetik

Presenting author: Evrim Karadag-Saygi

Institution: Marmara University School of Medicine, Department of Physical Medicine and Rehabilitation,
Istanbul - Turkey

ABSTRACT: Although plantar fasciitis and heel spurs are the most common etiologies of foot pain, tarsal tunnel syndrome (TTS) is also not uncommon. Lateral plantar, medial plantar and medial calcaneal nerves (MCN) are three nerves arising from the tibial nerve. Lateral and medial plantar nerves are frequently evaluated in suspect of TTS. In case of sharp heel pain mimics plantar fasciitis, medial calcaneal nerve also should be investigated. Compression of MCN may occur secondary to repetitive micro trauma which often results from intensive sports-related activity. We present a 24-year-old kick boxer with medial calcaneal pain. The clinical course, radiological and electrophysiological findings are reviewed.

Abstract No.: PP1239

Abstract Title: PATIENTS WITH RECURRENT URINARY TRACT INFECTIONS. EVALUATION AND TREATMENT IN THE NEUROGENIC BLADDER UNIT

Authors(s): C-A Rapidi, A. Papachristos, M. Micha, G. Siamos, A Tsivgoulis, M. Kaligerou, P. Manthos, P. Cocconis, E. Maragoudaki, K. Petropoulou

Presenting author: M. Micha

Institution: B^{*} Department of Physical Medicine and Rehabilitation - Neurogenic Bladder Unit, National Rehabilitation Center, Athens - Greece

ABSTRACT: OBJECTIVES: The study of treatment options for patients with recurrent urinary tract infections referred from an infection clinic. MATERIALS - METHODS: 27 patient (21 female), with a mean age of 49 years, 10 patients with a known neurological disease and 17 without any known neurological disease. Mean follow up time: 12 months. At the time of first examination, 7 patients emptied their bladder with intermittent catheterizations. We studied the voiding diary, the urodynamic investigation and the therapeutic interventions. RESULTS: 16 patients suffered from frequency (>7 micturations/24h), 17 from small voiding volumes (<150ml) and 2 had increased voiding volumes (>500ml). The 24h urine volume was found less than 1500ml in 6 patients and increased (>2500ml) in 3. Urinary incontinence was a problem for 11 patients. In 10 patients the residual urine volume was found increased. The urodynamic evaluation did not show abnormal findings in 8 patients, in 5 an overactive detrusor was found, in 11 decreased vesical sensations, in 2 decreased bladder compliance, in 5 underactive detrusor and in 2 detrusor sphincter dyssynergia was revealed. In 17 patients intermittent catheterizations were recommended, in 8 patients' anticholinergic medication, 7 patients had to be reeducated about the schedule and the procedure of the catheterization. Pelvic floor training with biofeedback (EMG-pressure) took place in 7 patients, 4 patients had voiding reeducation. The reeducation and management of voiding led to bladder emptying under safe conditions (low detrusor pressure, normal bladder compliance and continence). During follow up there was a marked decrease in the number of symptomatic urinary tract infections. CONCLUSIONS: The dysfunctional voiding conditions and the recurrent urinary tract infections often need a multidisciplinary approach. The method of bladder emptying may be redesigned in order to meet patients' needs and to protect kidney function.

Abstract No.: PP1240

Abstract Title: GAIT PATTERN RE-EDUCATION USING PARTIAL WEIGHT BEARING IN COMBINATION WITH THE USE OF ORTHOTIC DEVICE AND BNTOX A INJECTION IN A PATIENT WITH TRAUMATIC BRAIN INJURY – CASE REPORT

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Presenting author: Nektarios Pappas

Institution: Apolloneio Rehabilitation Center, Larissa - Greece

ABSTRACT: Introduction Patients with traumatic brain injury (TBI) face gait disorders. The aim of the study was to re-educate gait pattern using partial weight bearing on a treadmill, in combination with the use of a bilateral ankle foot orthosis and botulinum toxin injection. Methods – Subjects A man aged 25 suffering from amnesiac aphasia, dysarthria and gait disorder due to TBI, with spastic paraparesis and severe pain at the left knee combined with 50° hyper-extension, 3 years after onset. The patient can walk independently for a small distance with the use of a walking frame. The Biodex Gait Trainer with Unweighted System was used. Titanium fixed ankle foot orthosis were supplied to both limbs as well as a thigh-tibial splint (TTS) at the left knee. The orthotic device was used daily in combination with therapeutic exercise program as well as application of physical agents. In addition, botulinum toxin type A (BNTToXA) was injected under EMG guidance on the plantar flexors bilaterally. Results Knee pain (VAS 8 initially) was gradually decreased to VAS 5, with the use of physical agents. An over-extension of the knee joint was corrected with the use of TTS, which additionally reduced knee pain to VAS 2. Daily exercise on the BIODEx Gait Trainer in addition with the BNTToXA injection further improved gait parameters (speed, cycle, step length, movement index). Discussion – Conclusions Partial weight bearing using the Biodex Gait Trainer, in combination with BNTToXA injection and the use of orthotic devices, on a comprehensive rehabilitation program seems to improve gait pattern significantly as well as balance in patients with TBI. Further research is required, since there are limited studies on the specific parameters of gait re-education with partial weight bearing concerning patients with TBI.

Abstract No.: PP1243

Abstract Title: GUILLAIN-BARRE SYNDROME: THREE CASES REPORT

Authors(s): Lains J., Ramos M, Pereira A, Amorim P, Filipe C

Presenting author: Lains J.

Institution: Centro de Medicina Física e Reabilitação da Região Centro – Rovisco Pais, Coimbra - Portugal

ABSTRACT: Introduction: It is known that patients with Guillain Barre Syndrome have distinct clinical and functional evolution (1). The authors describe three clinical cases with disparate developments. The aim of this paper is to establish the relationship among the variables that influence the outcome and clinical and functional evolution. Methods and Subjects: We analyzed the clinical outcome of three patients hospitalized at Rovisco Pais - Physical and Rehabilitation Medicine Centre, considering the following features associated with poorer outcome: older age, requirement for ventilatory support, abnormal peripheral nerve function, severe disease at presentation, progression to quadriplegia (2, 3). We also compared the following variables: requirement for therapy with intravenous immunoglobulin (4), FIM and time to return to walk. Results and Discussion: The three patients recovered uneventfully although distinctly. Need for ventilatory support was only verified in one case. Surprisingly, the usual relationship between prognostic factors and clinical outcome didn't happen. References: 1- Meythaler, JM. Rehabilitation of Guillain-Barre syndrome. Arch Phys Med Rehabil 1997; 78:872. 2- Khan F. Rehabilitation in Guillain Barre syndrome. Aust Fam Physician. 2004 Dec;33(12):1013-7. Review 3- Hallum A. Neuromuscular diseases. In: Neurological Rehabilitation. Umphred DA, ed. 4th edn. St Louis: Mosby, 2001; 56:3-415. 4- Hughes, RA, Raphael, JC, Swan, AV, van Doorn, PA. Intravenous immunoglobulin for Guillain-Barre syndrome. Cochrane Database Syst Rev 2006; :CD002063.

Abstract No.: PP1244

Abstract Title: **LOW FREQUENCY REPETITIVE MAGNETIC STIMULATION IN PATIENTS WITH HEREDITARY SPASTIC PARAPLEGIA – CASE REPORT**

Authors(s): Mehmet Agirman, Evrim Karadag-Saygi

Presenting author: Evrim Karadag-Saygi

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Istanbul - Turkey

ABSTRACT: Hereditary spastic paraplegia (HSPP) is a heterogeneous genetic disease characterized by progressive spasticity of lower extremities. Spasticity is a major cause of long-term disability in HSPP and significantly affects the functional life of patients. Repetitive transcranial magnetic stimulation (rTMS) is widely used in diagnosis and treatment of many neurological and psychiatric diseases. Although the positive impacts of rTMS for spasticity have been reported, no study has been found on HSPP. We present two HSPP patients treated with low frequency rTMS (20 minutes at a frequency of 1 Hz (1200 pulses), for a period of 10 treatment sessions).

Abstract No.: PP1248

Abstract Title: TALOCALCANEAL COALITION – A CASE REPORT

Authors(s): Santos, A, Peixoto, P, Pires, C

Presenting author: Santos, A

Institution: Hospital do Divino Espirito Santo, Ponta Delgada - Portugal

ABSTRACT: Introduction: Talocalcaneal coalition, defined as the fusion of talus and calcaneus bones, is one of the most common coalitions of the foot. Most often occurs as a result of a defect in segmentation and differentiation of the primitive mesenchyme. Less common causes include infection or previous trauma. This bridge may be osseous, cartilaginous, or fibrous. It is often asymptomatic but patients who become symptomatic do it between 12 and 16 years of age when the preexisting cartilaginous coalition ossifies, sometimes after a traumatic event. The chief complaints are pain and stiffness. Patients also often note repeated ankle sprains and peroneal spasm with forced inversion. Physical examination frequently reveals decreased hind foot motion with pes planus and calcaneus valgus. The aim of this paper is to report a case of talocalcaneal coalition. Methods and subjects: The authors describe a case of a 14 years old patient presenting with ankle pain after a traumatic event. Results: Foot x-ray showed talocalcaneal coalition. Resection of the bar was performed without complications. After that, the patient was referred to PRM consult. He started physical therapy with pain and gait improvement, and latter total recovery. Discussion: Conclusions: This case illustrates that tarsal coalition, in particular talocalcaneal coalition, should be considered in young patients with foot and ankle pain. The first line of treatment is conservative, including oral medications, physical therapy and orthotic devices but surgery should also be an option in symptomatic patients and when the previous measures fail.

Abstract No.: PP1249

Abstract Title: MACHADO-JOSEPH DISEASE - A RETROSPECTIVE STUDY

Authors(s): Santos, A, Peixoto, P, Pires, C

Presenting author: Santos, A

Institution: Hospital do Divino Espirito Santo, Ponta Delgada - Portugal

ABSTRACT: Introduction: Machado-Joseph disease (MJD) is the most common autosomal dominant spinocerebellar ataxia. Originally described in families of Portuguese-Azorean ancestry, it has a high prevalence in Azores. MJD, or spinocerebellar ataxia type 3 (SCA3), is caused by an expansion of a CAG repeat in the MJD1 gene, located in the long arm of chromosome 14. It's characterized by a wide variety of clinical manifestations. There are three main sub phenotypes: type 1 patients, with earlier onset (mean 24.3 years) and marked pyramidal and extra pyramidal signs, in addition to the common features of cerebellar ataxia and ophthalmoplegia, as well as a rapid and more severe clinical course; type 2 patients have a mean age at onset of 40.5 years and show mainly cerebellar ataxia and ophthalmoplegia; type 3 patients show a later onset (mean 46.8 years), have marked peripheral signs, weakness, and amyotrophies, along with cerebellar ataxia and ophthalmoplegia. Type 2 may be transitional, since all patients start as type 2 and some later evolve into either type 1 or 3. The aim of this work is to characterize the MJD patients currently followed in the Physical and Rehabilitation Medicine Department of Hospital do Divino Espirito Santo. Methods and subjects: In this study, patients with MJD are being assessed, focusing on age of onset, clinical course and sub phenotype, and level of impairment. Results and Discussion: Work currently in progress. Conclusions: This is an ongoing study. Increased awareness of these symptoms and sub phenotypes has great prognostic value but it is also important in early recognition of MJD, and providing the best treatment to these patients.

Abstract No.: PP1250

Abstract Title: IMPLEMENTATION OF TELEREHABILITATION IN AN EARLY HOME SUPPORT DISCHARGE (EHSD) PROGRAM IN EUROPE

Authors(s): Turolla A, Jorgensen H, Piron L, Agostini M, Tonin P, Larsen T, S.Camillo

Presenting author: Tonin P

Institution: IRCCS San Camillo, Venice - Italy

ABSTRACT: Introduction: Previous studies in stroke patients demonstrated both that an early discharge from the hospital results in better clinical outcome and that telerehabilitation could be an effective approach to carry on the rehabilitative treatment after discharge. Within the project Homecare of the FP7-EU we planned a pilot clinical trial, to evaluate how the implementation of a previously validated telerehabilitation approach impacts on the clinical outcomes of stroke patients undergoing an EHSD program. Methods and Subjects: We planned to enroll 5 stroke patients, meeting this inclusion criteria: $25 < AGE0$, De Renzi test > 62 , Albert test = 36, MMSE > 24 and participating to the EHSD program in Denmark. The outcome measures will be: F-M UE, Reaching Performance Scale, Ashworth scale, FIM, Frenchay Activities Index and EuroQoL. Expected results and conclusions we expect to observe a significant improvement in the clinical outcome related to the tele-treatment as independent variable. References Piron L, Turolla A, Agostini M, Zucconi C, Cortese F, Zampolini M, Zannini M, Dam M, Ventura L, Battauz M, Tonin P. Exercises for paretic upper limb after stroke: a combined virtual-reality and telemedicine approach. J Rehabil Med. 2009;41:1016-102. Larsen T, Olsen TS, Sorensen J. Early home-supported discharge of stroke patients: a health technology assessment. Int J Technol Assess Health Care. 2006;22:313-20.

Abstract No.: PP1260

Abstract Title: DRIVING REASSESSMENT IN PEOPLE WITH SPECIAL NEEDS AND CAUSES THAT LEAD IN DRIVING FAILURE

Authors(s): Despoina Psillaki, Evangelia Maragkoudaki

Presenting author: Despoina Psillaki

Institution: National Rehabilitation Center, Athens-Greece

ABSTRACT: INTRODUCTION: Driving a motor vehicle is an important part of every day life and requires a high degree of competence on many levels. Aim of our study was to register the main problems that interfere in driving capability during reassessment. METHODS AND SUBJECTS: This is a study that took place at the specialized department INIOHOS of the National Rehabilitation Center of Athens: from 1995 to 2009 were re-assessed 2835 disabled persons having a variety of neurological and orthopedic diseases. Each participant had an off road assessment which included a clinical evaluation, strength and range of motion examination, cognitive screening tests, visual, space and color perception, reaction time necessary to integrate and respond appropriately to multiple rapid and transient signals and an on road assessment. RESULTS: From the reevaluated persons 2410 (85%) were able to continue to drive their adapted car without any limitation, 255 (9%) were not any more able for a safe driving, and 170 (6%) were capable to drive with some limitations. Main elements that had a severe impact on the driving permission were age, reaction time, cognitive deficiencies and the percentage increased when were added visual field deficits and more motor disabilities. DISCUSSION-CONCLUSION: Mobility is an equal right for every person disabled or not. The most important target is to identify patients who may be at risk when drive a motor vehicle due to their decreased functional status, through reassessment and management.

Abstract No.: PP1263

Abstract Title: REHABILITATION DAY HOSPITAL AND FACTORS THAT LEAD PATIENTS TO REFUSE THEIR PROGRAM

Authors(s): Tragoulias V, Psillaki D, Ananidis N, Papakosta S, Gartzios Ch, Groumas N

Presenting author: Vasilios Tragoulias

Institution: 1st Department of PRM, National Rehabilitation Hospital, Athens - Greece

ABSTRACT: Introduction: It is well known that for certain patients there is no need for inpatient rehabilitation and are advised to frequent a rehabilitation day unit. Aim of our study was to record all the factors that influenced the decision of the patients or their caregivers to refuse outpatient rehabilitation in a day hospital. Methods and subjects: During the period 2008-2009, 147 patients were referred to frequent a day care rehabilitation unit. 85pz (57,8%) came from the community and were assessed in outpatient ambulatories of our department. 62pz (42,1%) were patients who had completed the inpatient program and required ongoing therapy. We register all the factors that lead patients to quit the day hospital attendance. Results From the subjects of our study just 42(28,5%) accepted and followed the program of a day rehabilitation unit, 31 (36,4%) outpatient and 11(17,7%) inpatient. Absence of caregiver, lack of social support systems, habits, delay due to bureaucratic hurdles, public or private transports, program timing, services, age, inadequate support from home, were the most frequent reported factors. Discussion Many of the problems in rehabilitation arise due to the lack of financial resources. Rehabilitation would assume gigantic proportion in coming years and governments must deploy more resources to deal with patients' rehabilitation.

Abstract No.: PP1270

Abstract Title: PHYSICAL THERAPY IN CANCER RELATED VS NON-CANCER TRISMUS

Authors(s): Demirhan Diracoglu, Ekin Ozgorgu, Sezai Vatansever, Ayse Karan

Presenting author: Demirhan Diracoglou

Institution: Istanbul University Istanbul Faculty of Medicine, Department of Physical Medicine and Rehabilitation, Istanbul - Turkey

ABSTRACT: Trismus may be caused by several factors including those related with cancer and non-cancer disorders. The purpose of our study was to explore the effectiveness of physical therapy in cancer related vs non-cancer trismus. Thirty trismus patients who had undergone radiotherapy due to a tumor at the maxillary or nasopharyngeal region (cancer group) and 65 trismus patients with various underlying causes (non-cancer group) were enrolled. Fifteen sessions of physical therapy have been applied to both TMJ regions of the patients. Patients performed active manual stretching and relaxation exercises with the company of a physiotherapist after each physical therapy session. Although maximal mouth opening (changing from 17.7 ± 5.4 to 27.4 ± 6.9 mm in non-cancer group and from 10.5 ± 5.6 to 12.8 ± 6.9 mm in cancer group) and VAS values (changing from 58.4 ± 21.5 to 41.8 ± 22.4 mm in non-cancer group and from 68.3 ± 25.7 to 60.3 ± 25.7 mm in cancer group) showed significant improvements in both groups at the end of the physical therapy program ($p=0.00$); the difference was significantly higher in the non-cancer group ($p=0.00$). Post-treatment patient global self-assessment was found to be significantly higher in the non-cancer group when compared with the cancer group ($p=0.005$). In summary, combined physical therapy and exercise program appears to be effective in the treatment in both cancer related and non-cancer trismus. But clinical relevance of the results is doubtful and far from satisfying in the patients with cancer related trismus.

Abstract No.: PP1272

Abstract Title: THE EFFECTS OF SACROILIAC JOINT MANIPULATION ON SELECTED ELECTRO PHYSIOLOGIC PARAMETERS IN NORMAL FEMALE STUDENTS BETWEEN 18-30 YEARS IN SHIRAZ UNIVERSITY OF MEDICAL SCIENCE, 2009-2010

Authors(s): Fahimeh Kamali

Presenting author: Fahimeh Kamali

Institution: Shiraz University of Medical Sciences, Shiraz- Iran

ABSTRACT: Introduction: Spinal manipulation is a commonly employed nonoperative treatment modality in the management of patients with neck - low back or pelvic pain. Manipulation is defined as a passive movement that tends to nudge the components of a joint or group of joints beyond their usual physiological range .Spinal manipulation involves a high-velocity low amplitude thrust directed to a synovial joint within very short amplitude. Purpose: The objective of this research was to understanding of the effects of sacroiliac joint manipulation on selected electrophysiologic parameters include pressure pain thresholds (PPT) and tibial nerve Hoffmann reflex (H-reflex) amplitude. Tibial nerve H- reflex amplitude is measured for define the changes in motoneuron pool excitability after sacroiliac joint manipulation. Subject and methods: In this study 20 healthy females participated. Pressure pain threshold measured from the posterior superior iliac spine and H- reflex recorded from the tibial nerve were evaluated before and after sacroiliac joint manipulation. Result: All data was collated and analyzed using the statistical package SPSS version 11.According to non parametric paired T-test? there was a transient attenuation of the tibial nerve H-reflex with a return to base line values 40 seconds after the SIJ manipulation procedure (P-0.05).There was a significant decrease in the H/M Max ratio measured 40 seconds after the SM. Although H/M Max values to 90 seconds was depressed with respect to pre manipulation values this decrease failed to achieve transitional level of significance .The H-reflex amplitude remained normal at 5?10?15 and 20 minutes after SM. The amplitude of the M-wave responses were consistent from pre testing to post testing.These data indicated that recording and stimulating environments were the same throughout the experimental session before and after the SM procedure. Thus ?the before and after changes in the H/M Max ratios reflected the physiologic effects of SM procedures on motonuron activity. Pre and post intervention PPT measurements also were analyzed using paired T-test. Mean (SD) PPT values are shown in table 3, this data displayed a decrease in the mean PPT .There was not significant changes between pre and post manipulation in 1and 5 minutes. However in 10 and 15 minutes after manipulation the decrease of mean PPT was significant (P-0.05). To assess the reliability of the PPT measurement procedure the intra class correlation coefficient (ICC based on a one way ANOVA) was calculated for the three PPT recording taken in all subjects. The average measure ICC for force gauge PPT reading 1?2 and 3 was 0.96(95% C.I:0.94-0.98 F=29.76 P<0.01) ?which indicated a high reliability for the three readings DISCUSSION: The result of this study indicate that HVLA sacroiliac joint manipulation lead to short term attenuation of alpha motoneuronal activity as quantified by H-reflex amplitude changes.

Abstract No.: PP1272 (continuation)

Abstract Title: THE EFFECTS OF SACROILIAC JOINT MANIPULATION ON SELECTED ELECTRO PHYSIOLOGIC PARAMETERS IN NORMAL FEMALE STUDENTS BETWEEN 18-30 YEARS IN SHIRAZ UNIVERSITY OF MEDICAL SCIENCE, 2009-2010

As a possible physiologic explanation of the current finding spinal manipulation procedures may produce “after effect” or changes in sensory discharge rates predominantly in Ia afferents that occur in response to an alteration in a muscle’s history of activation and length changes. The time course of after effects ranges from 2 to 400 seconds with maximum effects typically encountered at 50 seconds. In this study inhibitory effect of manipulation was 40 seconds that is in this time range. This finding is accordance with other study that suggested SM has short term attenuation on motoneuronal activity. However this is inconsistent with morphy’s study that SIJ manipulation was lead up to 15 minutes inhibition of motoneuron [18]. Another reason for motoneuron attenuation after manipulation is ?because the extremity and paraspinal muscles maintain a relatively high density of spindles the potential muscle stretch stimulus imposed by spinal manipulation and mobilization procedures may alter the mechanical state of muscle spindle receptors leading to reflex inhibition of motoneurons. This is same that thought “post contraction sensory discharge” phenomena. Post activation depression is another mechanism that may be involved in post manipulation inhibition. Depression of the Ia-motoneuron synapse after a previous activation of a stretch reflex arc is a well-documented neurophysiologic response known as post activation depression. It is reasonable to propose that a secondary consequence of this reduced excitability is that the so –called “pain –spasm – pain” cycle may be disrupted. However? this study failed to demonstrate any positive significant difference in the PPT of the PSIS following SIJ manipulation. This data displayed a decrease in mean PPT after manipulation. A number of studies have shown that such techniques have a positive effect on pain reduction. Although Thomson et al found same result with this study for effect of manipulation and mobilization on PPT in lumbar spine. A number of studies have found that PPT values increase in a caudal direction and it has been suggested that this is due to a lower mechanoreceptor and nociceptor density in the sacroiliac joint. This could offer a theory behind the non significant results obtained in this study and why a large number of studies have displayed increases in PPT following SMT applied to the cervical spine. When considering the gate control theory which relies on large myelinated neurons from mechanoreceptors to modulate and inhibit nociceptive input from small diameter neurons a lack of mechanoreceptor activity following to the SIJ would be unable to close the pain gate and create a hypoalgesic effect. It has been established that minor adverse events such as a worsening of the present symptoms are common following SM. This occurrence is often termed a “treatment reaction” or “rebound reaction” and has been identified as a relatively common and predictable response. for this reason it may be of no surprise that the SIJ manipulation in this study displayed a slight reduction in PPT. A limitation of this study was using of force gauge instead algometer that used in previous studies. As such further research should incorporate the application of SMT techniques on symptomatic patients in a way in which it would be used in a clinical setting. Conclusion: Sacroiliac joint manipulation procedures produce a profound but transient attenuation of alpha motoneuronal excitability.

Abstract No.: PP1272 (continuation)

Abstract Title: THE EFFECTS OF SACROILIAC JOINT MANIPULATION ON SELECTED ELECTRO PHYSIOLOGIC PARAMETERS IN NORMAL FEMALE STUDENTS BETWEEN 18-30 YEARS IN SHIRAZ UNIVERSITY OF MEDICAL SCIENCE, 2009-2010

These findings substantiate the theory that manual spinal therapy procedures may lead to short term inhibitory effects on the human motor system .manipulation of this joint did not have significant effect on pressure pain thresholds in asymptomatic subjects. Keyword: manipulation; sacroiliac joint; pressure pain threshold; H-reflex References: 1) Curtis P.Spinalmanipulation: does itwork? Occupationala.Med:StateoftheArtReviews1988;3:31-44. 2) Bronfort G.Spinal manipulation: current state of research and its indicati. Neurol Clin1999;17:91-111. 3) Thomson O, Haig L ,Mansfield H.The effect of high velocity low amplitude thrust manipulation and mobilization techniques on pressure pain threshold in the lumbar spine. International journal of osteopathic medicine2008; 7:215-231. 4) Maigne R.Diagnosis and treatment of pain of vertebral origin.J Manipulative physiol Ther 1999;15:71-5. 5) Pickar J.Neurophysiological effects of spinal manipulation.the spine journal2002;2:357-371. 6) Greenman P.Principles of manual medicine.Lippincott2003;344-361. 7) Maitland G, Hengeveld E, Maitland 's vertebral manipulation.Butterworth-Heinemann2001;6th ed: 220 8) Evans D.Mechanisms and effects of spinal high-velocity,low-amplitude thrust manipulation. J Manipulative physiol Ther2002;25:251-262. 9) Young F.Cavitation.Imperial college press1999;20:300-315. 10) Fryer G, Carub S.The effect of manipulation and mobilization on pressure pain thresholds in the thoracic spine.J Osteopath Med2004;7:8-14. 11) Vernon H, Aker P.P ressure pain threshold evaluation of the effects of spinal manipulation in the treatment of chronic neck pain.J Manipulative physiol Ther1990;13:3-16. 12) Devocht J, Picker D.Spinal manipulation alters electromyographic activity of paraspinal muscles. J Manipulative physiol Ther2004;28:465-471. 13) Magine J. Vautravers PH.Mechanism of action of spinal manipulative therapy.Joint bone spine2003;70:336-341. 14) Dishman J., Ball K. Burke J.Central motor excitability change after spinal manipulation: a transcranial magnetic stimulation study.journal of manipulative and physiological therapeutics2002;25:200-208.

Abstract No.: PP1275

Abstract Title: RCT ON THE EFFECTIVENESS OF BTX-A FOR THE PATIENTS WITH HEMIPLEGIA USING GAIT ANALYSIS

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Presenting author: Sangsoo Eun

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ABSTRACT: Purpose of this study; to prove the effectiveness of Botulinum Toxin A (BTX-A) injection for the spastic lower extremity of the stroke patients with hemiplegia using gait analysis by randomized controlled trial (RCT). Patients and Method; Twenty stroke patients with hemiplegia were recruited in this study. All of them were able to walk individually without canes or orthosis. They were assigned to two groups (BTX-A and placebo group) randomly and the vials of the injection were completely masked. The sites of infection were their gastrosoleus and posterior tibial muscles. The gait analysis with Vicon and force plate system was performed at pre and post four weeks of injection of masked vials. The walking speed, the time of supporting duration of paretic side, walking cadence and the maximum dorsiflexion angle and plantar flexion moment of the ankle of injected side were calculated. Results; The patients of BTX-A groups improved in the maximum angle of dorsiflexion and moment of planter flexion compared with patients of placebo group significantly, however, as for the walking speed, the time of supporting duration of paretic side, and walking cadence, the patients of two groups were found no statistical differences with each other. Discussion; This RCT were able to show the effectiveness of BTX-A for the reduce of spasticity of planter flexion muscles of paretic side. As shown in this study, we did not find any change of walking time and the other parameters. The reason of these results might be thought that the patients had not adopted with the reduced spasticity yet in four weeks after injection.

Abstract No.: PP1279

Abstract Title: THE EFFECT OF A THERAPEUTIC EXERCISE PROGRAM ON MOTOR FUNCTIONS IN CEREBRAL PALSY

Authors(s): C. Christodoulou, K. Christodoulou, A. Christodoulou, N. Christodoulou

Presenting author: C. Christodoulou

Institution: Limassol Centre of Physical and Rehabilitation Medicine NC, Limassol - Cyprus

ABSTRACT: In children with cerebral palsy, the lesion of the C.N.S. affects control mechanism, retards musculoskeletal growth and results in the development of abnormal movement patterns which in turn affect predominantly the motor performance in the child.

1. Impaired motor performance interferes greatly with the daily functioning.
2. Therapy in cerebral palsy aims to prevent musculoskeletal complications and improve motor function.
3. Thus, use of special exercise techniques program in preschool and school age children with mild spastic cerebral palsy, is of significant use.

In this study, 20 children 4 - 8 years were evaluated. All were mild cases with normal intellectual capacity. The children were exercised as a group three times weekly for a total period of 4 months. Each exercise session lasted 45 minutes. The exercise program is analyzed. Games were integrated in between the exercise activities to increase motivation. The exercise components were also integrated into the play activities. Psychological support sessions were performed once weekly.

Motor evaluation was done prior to the exercise program and at the end of 4 months using the "Gross Motor Function Measure" (GMFM). The method and results of the GMFM are presented in details. In general, evaluation at the end of 4 months revealed subjective improvement in kneeling, standing and walking functions in most of the treatment group children which was confirmed by the mothers of these children.

"G.M.F.M." subtest scores at the end of the exercise sessions showed statistically significant improvement in total and kneeling, standing, walking subtest scores. There was no statistically significant improvement in climbing subtest scores

According to the results it can be concluded that a regular therapeutic exercise program can enhance the gross motor functions of children with cerebral palsy.

Abstract No.: PP1280

Abstract Title: SCOLIOSIS-RELATED PAIN IN ADULTS - TREATMENT INFLUENCES

Authors(s): C. Christodoulou, K. Christodoulou, A. Christodoulou, N. Christodoulou

Presenting author: C. Christodoulou

Institution: Limassol Centre of Physical and Rehabilitation Medicine NC, Limassol - Cyprus

ABSTRACT: Subject of this study is a questionnaire of an investigation of 320 patients with scoliosis as to severity, frequency and localization of pain symptoms before and after an in-patient rehabilitation program according to "Schroth". In the group of patients with an average curvature angle of 30.2 degree according to Cobb, no correlation was found between the curve magnitude and severity ($r=0.364$) and the frequency of pain symptoms ($r=0.270$) on the one hand and the age on the other hand. The most frequent localization of the pain symptoms was the region of the lumbar articular facets (33.4%), the para-vertebral muscles on the convex side of the lumbar region (29.4%) and the region of the shoulder and neck. In the thoracic and lumbar region, the para-vertebral muscles on the convex side were more frequently affected by pain symptoms. With the scoliosis-specific rehabilitation program according to "Schroth" a significant improvement of the described pain symptoms was obtained. The effect on myogenic pain symptoms was better than on arthrogenic symptoms. Pain in general is not to be considered as a one prevalent symptom. Pain symptoms appear seldom in thoracic scoliosis, far more often in lumbar and thoraco-lumbar curvatures. Pain is rarely of radicular origin.

Abstract No.: PP1281

Abstract Title: EXERCISE IN THE OLD AGE CONCERNING PREVENTION OF FALLS AND OSTEOPOROSIS

Authors(s): C. Christodoulou, K. Christodoulou, A. Christodoulou, N. Christodoulou

Presenting author: C. Christodoulou

Institution: Limassol Centre of Physical and Rehabilitation Medicine NC, Limassol - Cyprus

ABSTRACT: Load on the bone tissue changes the “bone breakdown/formation ratio” and increases the bone mass, so the load can be spread over a larger amount of bone mass. Physical activity is vital for the bone health; it reduces or reverses the rate of bone loss.

Exercise is one of the options for prevention of osteoporosis in both women and men in all ages, but also is an essential component of osteoporosis treatment, to stay active and prevent progression. At the same time is beneficial to other body functions as well.

In the 3rd Age, changes of the musculoskeletal system are observed; bone resistance is reduced (osteoporosis) and joints, reduce of flexibility due to muscle fibres substitute by firm connective tissue, which leads to reduce of stretching ability. This muscle function impairment remains flexibility is reduced as well. The lateral is caused due to degenerative changes of cartilage, of joint-bones and of periarticular tissues changes (joint membrane, ligaments, muscles, tendons, fasciae and the skin). The muscles present weakness, atrophy always the major danger-cause for falls and hip fractures in the elderly people. The several problems of balance and walking lead to falls and from falls to hip fractures. In this lecture, the several causes and danger factors of falls and the methods of identifying potential fallers are presented. Especially four methods are analyzed, used in our Limassol Centre of PRM: the “Berg Balance Scale” (BBS), the “Stops Walking When Talking” method (SWWT), the “Timed Up and Go” count (TUG) and the difference TUG count (TUG holding a glass with water). For the identified potential fallers we present a muscle training program of seven different exercises. Training permits an improvement in static balance and in pattern of walking under single or dual task conditions. This can be due to an increase in muscular strength and a better division of attention.

Moreover, an exercise program for osteoporosis prevention and treatment is presented, according to the values of the subject’s BMD (normal BMD: prevention program of exercises, osteopenia, osteoporosis and severe osteoporosis).

Abstract No.: PP1284

Abstract Title: THE EFFECT OF APPLYING CRYOTHERAPY AND PNEUMATIC COMPRESSION IN PATIENTS WITH BREAST CANCER

Authors(s): Zheleva Maya

Presenting author: Zheleva Maya

Institution: National Cancer Medical Center - Sofia, Bulgaria

ABSTRACT: OBJECTIVE: One of the most common complications that occur vledstvie surgical treatment in patients with breast cancer is limfedem. It causes physical discomfort, loss of function of the hand, loss of sensitivity. There are many kinds of therapies that are effective in treating limfedema. The purpose of this study was to compare the effects of application of cryotherapy followed by pneumatic compression.

METHODS: Thirty patients with breast cancer were included in the study. They have undergone a radical mastectomy, axillary dissection and unilateral. 1st group - 29 patients had cryotherapy prilizheno / sound with ice form/ Fig. № 1, infirm method around the upper limb / lasting from 3 to 8 minutes, then apply pneumatic compression of 30 to 60 mmHg with a duration of 90 minutes for a period of 20 days. Second group - 11 patients was applied pneumatic kopresiya 30 to 60 mmHg lasting 90 minutes over a period of 20 days. All patients before treatment have held series of physical exercises. The surveys were conducted by centimeters of upper limb levels-metacarpal, wrist joint, posterior lateral epikondil from 10 cm to 15 cm proximal from the lateral epikondil.

RESULTS: The mean age of patients was 47 groups, 71 / - + / 10.15 years. Before treatment, there was no significant difference between the two patient groups on measurements of upper limb.

Table № 1 shows measurements of both groups before and after treatment.

In the first group of patients showed significant reductions in measurements at all levels of upper limb, while the second group predominates in reducing metacarpal joints and the wrist joint.

CONCLUSION: These results indicate that the application of the combination of cryotherapy and kopresionnata therapy is effective in treating cancer-related limfedem.

Keywords: breast cancer-limfedem, cryotherapy, compression therapy

Fig. 1 - ice form cryotherapy

WORKSHOPS

Abstract No.: W01

Abstract Title: VIBRATION ENERGY IN REHABILITATION MEDICINE

Authors(s): FOTI Calogero, TRAVISI Tiziana

Presenting author: FOTI Calogero

Institution: Tor Vergata University, Rome, Italy

ABSTRACT: In the therapeutic field of Rehabilitation Medicine, Therapeutic Exercise can be made against normogravity, against hypogravity, and against hypergravity. Therapeutic exercise against normo-gravity (TENG) is made by the patient using free motion or resistance motion in normal gravity field (1g). It means moving by the normal air. Therapeutic exercise against hypogravity is made by the patient using free motion or resistance motion in lesser gravity field (acceleration<1g) (TELG); it means moving in water. Therapeutic exercise against hyper-gravity is made by the patient using free motion or resistance motion in higher gravity field (acceleration>1g) (TEHG); it means moving during supplementation of vibration energy (TEVE).

TEHG is a recent modality of exercise. We can realize it by TEVE. It consists in isotonic and isometric contractions of muscles, enhanced by vibration energy. TEVE is gradually becoming important: this is the product of sinusoidal vibration that elicits tonic vibration reflex, enhancing muscle contraction.

VETE can be used for ameliorating the flexibility; this target exercise can gain range of motion, solve postural problems, cure focal muscle strains. Vibration exercise can increase proprioception drivers to fast regain drill and coordination after traumatic lesion. Actually vibration application on patient needs a severe control by physician, and a precise and warning application by physiotherapist. This is a period of experimental studies in this field, but the actual knowledge let to see an interesting future for VETE in Rehabilitation Medicine.

Abstract No.: W02

Abstract Title: MESOTHERAPY IN REHABILITATION MEDICINE

Authors(s): C. Foti, C. Ljoka, E. Ciocchetti

Presenting author: C. Foti

Institution: Physical and Rehabilitation Medicine Chair, Tor Vergata University, Rome, Italy

ABSTRACT: Mesotherapy (MT) is a therapeutic method used in Physical and Rehabilitation Medicine and consists of multiple microinjections of small amounts of Official Pharmacopoeia drugs, loco-regionally placed on cutaneous areas projection of the tissues involved by pathological process. MT was first scientifically documented by Dr. Michel Pistor on 1958.

It is important to underline that mesotherapy is rigorously a medical act. In fact it requires a clinical-instrumental diagnosis, the choice of targets to inoculate and of instrumentation, the drugs and their dosages. Moreover it needs the verification of the results and above all the ability to deal eventual adverse reactions. MT must be effected in a suitable sanitary environment.

The main and better known mechanism of action is the pharmacological one. Adding to this, some other phenomena, of reflexogenic and immunological nature, are described to be effective. A placebo effect is present too, but it is very difficult to evaluate its relevance yet.

The main feature of mesotherapy in any case consists of the strengthening of pharmacological effect achieved by adopting some simple technical procedures. Drug mostly reaches the target tissue in a direct way, by diffusion and by emo-lymphatic microcirculation, jumping systemic filters as the entero-hepatic one; in fact it can be found only a very low quote of drug in the systemic circulation after a mesotherapeutic treatment. This peculiar pharmacokinetics has considerable advantages: a more intensive, quick and prolonged therapeutical action in the site where it needs; the necessity to administer minimal doses of drugs; a diminished involvement of not pathological sites with a decrease in iatrogenic side effects and in liver and kidney work loading. These aspects can be very useful when patient clinical features contraindicate the systemic administration of drugs. MT can be apply as “mother” mixture, compounded by physiological solution and a local anaesthetic; “mother” mixture added with one drug or two, when necessary; “dry-needle”, that means without any liquid inoculation, as a reflexotherapy; “blank”, with physiological solution only, moreover for poliallergic subjects.

The Pharmacological Mixture has to be chosen according to patient anamnestic indications and contraindications (particularly evaluating any possible hypersensitivity).

Abstract No.: W02 (continuation)

Abstract Title: MESOTHERAPY IN REHABILITATION MEDICINE

The fundamental MT device is represented by the so-called “Lebel” needle. Commonly used needles are 27 Gauge and 4 or 6mm long. The choice of points to inject is a very important detail. Their number varies in conformity with the extension of the area to be treated and has to be however sufficient to cover it completely. After an accurate clinical examination, including inspection and palpation, for identifying trigger points, tender zones, points of referred pain, and muscle-tendinous insertions, multiple intradermal microinjections, amounting 0,1-0,2 ml of mixture each, are administered on the painful area. Needle has to be 30° or 45° angled for reaching intradermal skin layer and at every micro-injection a characteristic puffy is formed. The number of sitting for a MT cycle is established by the physician taking into consideration pathology, its severity and clinical phase, patient response to the treatment; typically it is 4 or 5 sittings constituted. For the reason of the slow release of intradermal injected drugs, about 5 or 6 days, mesotherapy treatments are typically given once per week.

MT improves pain, inflammation and muscular contracture. Some clinical indications of MT in PMR are: back pain; cervical or lumbar radiculopathy; shoulder impingement syndrome; insertional tendinopathies; knee osteoarthritis; fibromyalgia syndrome. Main contraindications to MT are represented by allergies or intolerances for drugs used in the mixture; severe failures; systemic infections; pregnancy; needle-phobia. MT besides hasn't to be effected on precancerous, damaged or infective skin areas, neither where subsists any capillary fragility.

In our experience, mesotherapy, due to its safety, tolerability, cost effectiveness and efficacy, can be considered a useful technique for the management of painful muscle-skeletal diseases.

Abstract No.: W03

Abstract Title: ELECTROPHYSIOLOGY IN PHYSIATRY PRACTICE

Authors(s): M. A. R. El Abd

Presenting author: M. A. R. El Abd

Institution: Alexandria Univ. – Egypt

ABSTRACT: The objective is by the end of the workshop each participant to be able to apply a practical Electrodiagnostic approach in a given neuromuscular clinical problem.

They can participate physiatrists, neurologists and clinical neurophysiologists. It is good the participants to have experience in clinical neuromuscular disorders with basic practical skills in conducting Electrodiagnostic examination.

Following the introductory presentation, practice will follow on a motor clinical problem, a sensory clinical problem and a sensorimotor clinical problem.

Handouts will be given to the participants. For the “hand on practice” they will be used written and/or pectorial clinical problems, genuine Electrodiagnostic graphs and videos.

Abstract No.: W04
Abstract Title: TECARTHERAPY
Authors(s): C. Foti
Presenting author: C. Foti
Institution: Tor Vergata Univ. Rome – Italy

ABSTRACT:

It concerns a new method of application of capacitive resistive diathermia, very useful in sports too.
This workshop is very useful for members of the medical profession and physiotherapists as well.

Abstract No.: W05

Abstract Title: GENERAL PRINCIPLES OF INTRA-ARTICULAR INJECTIONS

Authors(s): G. Akyuz, S. Tuzun, I. Yagci, M. Zeki Kiralp, E. Karadag-Saygi

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- Istanbul University, Cerrahpasa School of Medicine, Physical Medicine & Rehabilitation Department, Istanbul, TURKEY
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- Department of Physical Medicine and Rehabilitation, GATA Haydarpasa Training Hospital

ABSTRACT: Prof. Şansın TUZUN, MD

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Arthrocentesis is widely used in the clinical practice in physical therapy and rehabilitation field. The knee is the most common and easiest joint for the physician to aspirate.

Rationale of intra-articular injections are diagnostic information and therapeutic benefits.

Diagnostic information is obtained via arthrocentesis: Joint effusions of unknown etiology are evaluated. Needle aspiration of the joint is minimally invasive and may be undertaken to evaluate for septic joint or crystal-induced arthropathy such as gout or pseudogout. Aspiration of joint may help distinguish the inflammatory of arthropathies from the crystal or osteoarthritis. Arthrocentesis can also be used to alleviate pain reducing intra-articular pressure in the setting of a tense traumatic or nontraumatic effusion. Gram stain, culture, cell count, differential and microscopic examination for crystals under polarized light may be requested depending on the particular clinical circumstance. Injection of a local anesthetic into a joint is also a useful diagnostic technique. Such injections are particularly common in the hip and can help distinguish pain originating from the joint itself from referred back pain. Indications for arthrocentesis are; Crystal-induced artropathy, hemarthrosis, symptomatic relief of a large effusion, unexplained joint effusion and unexplained monoarthritis.

Prior to intra-articular injection, patients should be informed about appropriate post-injection care and possible complications.

SHOULDER JOINT INJECTIONS

Ilker Yagci, MD

Marmara University School of Medicine, Department of Physical Medicine and Rehabilitation, Istanbul, Turkey

The local injections of shoulder joint or nearby structures are used by physiatrists for treatment of shoulder pain and dysfunction. The target anatomic structures are glenohumeral joint, tendons of subscapularis, biceps, infraspinatus, subacromial space and acromioclavicular joint.

Abstract No.: **W05 (continuation)**

Abstract Title: **GENERAL PRINCIPLES OF INTRA-ARTICULAR INJECTIONS**

Various diseases such as osteoarthritis, rheumatoid arthritis, psoriatic arthritis, overuse syndromes can affect these structures and cause pain.

Shoulder joint injections can be applied by anterior, posterior and lateral approaches. Acromioclavicular joint injections are performed to reduce pain in osteoarthritis or after trauma. The tendons of the rotator cuff can be affected by many diseases and diagnostic or therapeutic injections can be performed in most of patients with shoulder pain.

In this workshop common used shoulder injection techniques will be reviewed with a brief talk and demonstrations on shoulder model.

KNEE JOINT INJECTIONS

Mehmet Zeki KIRALP, MD

Assoc. Prof., Department of Physical Medicine and Rehabilitation, GATA Haydarpaşa Training Hospital

The **knee** joint contains the largest synovial space in the body and is the most commonly injected joint. Some painful conditions in the **knee** region may respond to local injection therapy. Arthrocentesis is easily and relatively painlessly performed in a joint that is swollen with fluid.

General cause of effusions are trauma, ligament strains, cruciate ligament or meniscal tears, hemarthrosis, RA, OA, ReA, PsA, gout and pseudogout. Intraarticular injection or aspiration of the knee joint is commonly used to treat these problems.

Technique for knee Injection-

For most joints, the usual point of entry is on the extensor surface, because the large nerves and major vessels are usually present on the flexor surface. Optimal joint positioning should be accomplished to stretch the capsule and separate the joint “ends” to produce maximal enlargement and distraction of the joint or synovial cavity to be penetrated. The usual site of entry is medial at about the midpoint of the patella or just below the point where a horizontal line tangential to the superior pole of the patella crosses a line paralleling the medial border. The needle (1.5- to 2-inch, 20-gauge) is directed downward or upward, sliding into the joint space beneath the undersurface of the patella. Aspiration of the knee can be facilitated by applying firm pressure with the palms cephalad to the patella over the site of the suprapatellar bursa. If cartilage is touched, the needle is withdrawn slightly and the fluid is aspirated. A similar approach can be used on the lateral side especially if large effusion in the suprapatellar is present laterally. The lateral approach is especially convenient if there is a bursitis. The point of penetration is lateral and superior to the patella. An approach that is used less frequently is the infrapatellar anterior route, which is useful when the knee cannot be fully extended and there is only minimal fluid present.

Abstract No.: **W05 (continuation)**

Abstract Title: **GENERAL PRINCIPLES OF INTRA-ARTICULAR INJECTIONS**

HIP AND ANKLE JOINT INJECTIONS

Evrin Karadag-Saygi, MD

Marmara University School of Medicine, Department of Physical Medicine and Rehabilitation

Joint injection of the hip and ankle are useful in both diagnosis and treatment of pain; therefore it is both a diagnostic as well as a therapeutic procedure. Because the hip joint is quite deep and tight, a long thin needle is used and this is guided into the joint under fluoroscopy or ultrasound. Once the needle appears to be in the correct position, the local anesthetic and steroid can then be injected into the hip joints. This workshop will examine the indications, techniques and complications of hip and ankle joint injections. Attendees will understand the approaches of hip and ankle joint injections during workshop.

Abstract No.: W06

Abstract Title: ASSESSMENT AND INTERVENTIONAL MANAGEMENT APPROACH IN PATIENTS WITH TEMPOROMANDIBULAR DISORDERS

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ABSTRACT: It is estimated that 50-60% of the general population have a functional disturbance in their temporomandibular joint (TMJ). TMJ is the one of the complex synovial joint in the human body and plays an important role in eating, breathing, speaking and in the other plenty of activities. TMJ problems are more frequent than the anticipated.

TMJ disorders are the common issues of the different medical disciplines. Physical medicine and rehabilitation, dentistry, orofacial surgery, psychiatry and neurology should pay attention in collaboration with each other to give a best serve to this group of the patients. Physiatrist play a major role in management and coordination of the professionals who are interested in TMJ disorders. Diagnosing and treating TMJ dysfunctions may be a difficult and confusing task. Having uptodate knowledge and long time experience are the significant points in solving these problems.

“**The intraarticular treatments**” used in TMJ disorders are **corticosteroid** and **hyaluronic acid (HA)** injections. In inflamatory TMJ degeneration, injections of long-term effective corticosteroids are not usually done more than 3-4 times in 3-4 month periods. HA injections are generally done three times and with one week intervals. Similar anti-inflammatory effects with corticosteroids have been shown with some studies. The most used condition of intraarticular HA injection is non-inflamatory TMJ degeneration. Otherwise it may be preferred in cases of non-reductable disc displacement if the conservative therapy is failed. There is little or no side effect of HA. “**Trigger point injections**” are the most frequently preferred treatment method in myofascial pain. Lidocaine or bupivacaine are the most used **local anesthetics** in injection. The most important point in trigger point injection practice is to determine the localization, correctly. As “**dry needling**” can be used in different TMJ disorders, it is frequently preferred in myofascial pain. Method is applied to painful trigger points on muscles around the TMJ by acupuncture needle.

Abstract No.: W06 (continuation)

Abstract Title: ASSESSMENT AND INTERVENTIONAL MANAGEMENT
APPROACH IN PATIENTS WITH TEMPOROMANDIBULAR
DISORDERS

“Manual treatment methods” can be applied in various TMJ pathologies. Both self-mobilization and passive mobilization methods are helpful particularly in treatment of hypomobile joint. It may be sometimes possible to obtain normal joint kinematics by the application of mobilization techniques. Manipulation is mostly used in non-reductable disc displacements.

The most used **“physical therapy agents”** in TMJ disorders are low-frequency electro-therapeutic currents, iontophoresis, superficial and deep heat applications, cold therapies, massage, and biofeedback. Biofeedback implies the patient to realise the functions that automatically work out normally and the methods to control it and the systems which are used for this purpose. There are several different types of **“biofeedback”**. EMG-biofeedback is often preferred in spasms of TMJ muscles. There is no clear scientific data showing the effectiveness of most oral drugs that are used in the treatment of TMJ problems.

Briefly, TMJ disorders are not rare. Therefore, rehabilitation spesicialist should pay attention concerning these diseases.

GREEK LECTURES

Abstract No.: GL01

Abstract Title: ΔΙΑΓΝΩΣΤΙΚΗ ΠΡΟΣΕΓΓΙΣΗ ΟΣΤΕΟΠΩΡΩΣΗΣ
(DIAGNOSTIC APPROACH OF OSTEOPOROSIS)

Authors(s): I. Διονυσιώτης (Y. Dionyssiotis)

Presenting author: I. Διονυσιώτης (Y. Dionyssiotis)

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ABSTRACT:

Η διαγνωστική αξιολόγηση της οστεοπόρωσης ξεκινά με εξειδικευμένο ιατρικό ιστορικό και ευρήματα. Εκτιμάται αρχικά το οξύ άλγος της οσφύος και οι λειτουργικές επιπλοκές. Αξιολογείται η γενική υγεία του ατόμου. Ο ιατρός λαμβάνει ιστορικό σχετικά με τις πτώσεις και τα κατάγματα, παθήσεις ή φάρμακα που επιδρούν στον σκελετό και αξιολογεί τον κίνδυνο του κατάγματος. Πρόσφατα εισήχθη από τον WHO το εργαλείο αξιολόγησης FRAX που εκτιμά την πιθανότητα κατάγματος με 10ετή προοπτική χρησιμοποιώντας παράγοντες όπως τη φυλή, το φύλο, την ηλικία, την οστική πυκνότητα και τους κλασικούς κλινικούς παράγοντες κινδύνου. Στην αξιολόγηση των μη φαρμακολογικών μέτρων για την πρόληψη των οστεοπορωτικών καταγμάτων βασική είναι η εκτίμηση του συντονισμού, της μυϊκής ισχύος, των διαιτητικών συνηθειών και του τρόπου ζωής (δείκτης μάζας σώματος >20, λήψη επαρκούς ποσότητας ασβεστίου 1200-1500mg την ημέρα, έκθεση στην ηλιακή ακτινοβολία ώστε να συντεθεί ικανοποιητική ποσότητα βιταμίνης D, ενθάρρυνση της διακοπής του καπνίσματος και της μείωσης της κατανάλωσης καφέ). Η κλινική αξιολόγηση περιλαμβάνει ανθρωπομετρικές μετρήσεις ύψους και βάρους, κλινικά ευρήματα που να υποκρύπτουν δευτεροπαθή οστεοπόρωση ή κακοήθεια και ολοκληρώνεται με την πραγματοποίηση των απλών δοκιμασιών "time-up-and-go" και "chair rising".

Η οστική πυκνομετρία: Στη διάγνωση της οστεοπόρωσης απαραίτητη είναι η πραγματοποίηση μετρήσεων με DXA σε όλη την οσφυϊκή μοίρα της σπονδυλικής στήλης και στο ολικό ισχίο. Κρίνεται σκόπιμη η χρησιμοποίηση της χαμηλότερης τιμής για την αξιολόγηση του καταγματικού κινδύνου.

Οι εργαστηριακές μετρήσεις: Οι μετρήσεις των ειδικών βιοχημικών δεικτών οστικής κατασκευής και απορρόφησης (ασβεστίου, φωσφόρου, κρεατινίνης, αλκαλικής φωσφατάσης κ.α.) που πραγματοποιούνται στο αίμα και στα ούρα (κυρίως 24ώρου) παρέχουν σημαντικές πληροφορίες αναφορικά με τον οστικό μεταβολισμό.

Ακτινογραφίες: Απαραίτητες θεωρούνται οι πλάγιες και προσθοπίσθιες ακτινογραφίες της θωρακικής και οσφυϊκής μοίρας για έλεγχο ύπαρξης πιθανών καταγμάτων.

Abstract No.: GL02

Abstract Title: ΔΙΑΤΡΟΦΗ ΚΑΙ ΟΣΤΕΟΠΟΡΩΣΗ
(DIET AND OSTEOPOROSIS)

Authors(s): Κ. Αθανασόπουλος (K. Athanassopoulos)

Presenting author: Κ. Αθανασόπουλος (K. Athanassopoulos)

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Τίλιον – Αθήνα, Ελλάδα, (Athens Greece).

ABSTRACT:

Η διατροφή είναι γνωστό από τους αρχαιότετους χρόνους, ότι αποτελούσε ένα ξεχωριστό και θεμελιώδη παράγοντα διατήρησης της υγείας του ανθρώπου.

Ήταν μάλιστα καθοριστική και η διαπίστωση θεραπευτικών ιδιοτήτων από πολλές φυσικές πηγές, (τρόφιμα, φυτικές και ζωϊκές ουσίες, ποτά κλπ). Στις περισσότερες δε περιπτώσεις, ουσιαστικά σε μεγάλο βαθμό, τέθηκαν τα θεμέλια της περαιτέρω ιατρικής και φαρμακευτικής επιστήμης.

Είναι επιστημονικά αδιαμφισβήτητο, ότι η σκελετική υγεία επηρεάζεται από τις εκάστοτε διατροφικές συνήθειες, τόσο θετικά όσο και αρνητικά.

Αποτελεί δεδομένο, ότι η διατροφή παίζει σημαντικό ρόλο στη σκελετική υγεία τόσο κατά την επίτευξη κορυφαίας οστικής μάζας, όσο και στη διατήρησή της κατά την ενήλικη ζωή.

Η σκελετική μάζα βέβαια, καθορίζεται από ένα συνδυασμό ενδογενών (γενετικών, ορμονικών), καθώς και εξωγενών (διατροφικών, σωματικής δραστηριότητας) παραγόντων. Στην εφηβεία, για την επίτευξη της κορυφαίας οστικής μάζας, οι κύριοι καθοριστικοί παράγοντες είναι γενετικοί, διατροφικοί και συμπεριφοριστικοί (άσκηση). Στους ενήλικους και ηλικιωμένους πληθυσμούς, η διατροφή αποτελεί έναν από τους κύριους παράγοντες της σχετιζόμενης με την ηλικία απώλειας οστού.

Έχει αποσαφηνισθεί, ότι τόσο η χαμηλή κορυφαία οστική μάζα, όσο και ο υψηλός ρυθμός οστικής απώλειας, αποτελούν παράγοντες κινδύνου για οστεοπόρωση και οστεοπορωτικά κατάγματα. Επίσης πρέπει να επισημανθεί, ότι σε πολλές ομάδες ασθενών με διαφορετικές παθήσεις, ή συνδυασμούς παθήσεων, καθώς και σε μεγάλη ποικιλία ασθενών με πολυτραυματισμό, κρανιοεγκεφαλικές κακώσεις, κακώσεις νωτιαίου μυελού κλπ, είναι εξαιρετικά σημαντική η ανάδειξη – ταυτοποίηση και αντιμετώπιση προβλημάτων οστεοπόρωσης. Αυτό θα πρέπει να γίνεται όχι μόνο με την υιοθέτηση συγκεκριμένων θεραπευτικών πρωτοκόλλων, αλλά μέσα και από ειδικά πρωτόκολλα διατροφής, με κύριο γνώμονα την εξατομίκευση.

Abstract No.: GL03

Abstract Title: ΘΕΡΑΠΕΥΤΙΚΗ ΠΡΟΣΕΓΓΙΣΗ ΟΣΤΕΟΠΟΡΩΣΗΣ
(THERAPEUTIC APPROACH OF OSTEOPOROSIS)

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ABSTRACT:

Η θεραπευτική προσέγγιση και αντιμετώπιση της οστεοπόρωσης αρχίζει με την αποφυγή όλων των προδιαθεσικών παραγόντων που συντελούν στην παθογένεια αυτής [Προληπτική Ιατρική αντιμετώπιση]. Η σωστή διατροφική αγωγή που θα είναι προσαρμοσμένη στις ανάγκες του οστικού μεταβολισμού είναι πρωταρχικής σημασίας.

Η συμπληρωματική χορήγηση Ασβεστίου και Βιταμίνης D αποτελεί την πρώτη γραμμή φαρμακευτικής θεραπευτικής παρέμβασης έναντι της νόσου. Η δεύτερης γραμμής φαρμακευτική θεραπευτική παρέμβαση προϋποθέτει την αξιολόγηση του ασθενούς με βάση μέτρα και σταθμά που καθορίζουν απόλυτες και σχετικές ενδείξεις θεραπείας και παρέχονται πλέον από κλίμακες και πίνακες κατοχυρωμένους από διεθνείς οργανισμούς υγείας που ασχολούνται αποκλειστικά με την οστεοπόρωση. Η χρήση διεθνών κλιμάκων-εργαλείων προσέγγισης τείνει να γίνει παγκόσμια αποδεκτή.

Η στρατηγική επιλογή στόχων, μέσων και τρόπων θεραπείας καθορίζεται συμπληρωματικά από την σοβαρότητα της νόσου, την εμπειρία του θεράποντος ιατρού, το μοντέλο ζωής του ασθενούς, τη ψυχολογική κατάσταση του ασθενούς, την αποδοχή συγκεκριμένου θεραπευτικού πρωτοκόλλου και τη συμμόρφωση σε αυτό και διάφορα άλλα κοινωνικά και οικονομικά δεδομένα [χώρα, ασφαλιστικός φορέας ασθενούς, λίστα φαρμάκων, τιμολογιακές πολιτικές στο χώρο της υγείας]. Οι κατηγορίες των φαρμακευτικών ουσιών που προσφέρονται στον αγώνα κατά της νόσου ταξινομούνται στη συνέχεια της παρουσίας.

Έτσι, γίνεται αναφορά σε :1. Καλσιτονίνη, 2. Διφωσφονικά, 3. Εκλεκτικούς Μετατροπείς Οιστρογονικών Υποδοχέων [S.E.R.M.S], 4. Παραθορμόνη, 5. Αναβολικά, 6.Αλατα Φθορίου, 7. Στρόντιο, 8. Ασβέστιο, 9. Βιταμίνη D,10. Φυτοοιστρογόνα, 11. Συνδυασμένες Θεραπείες, 12. Νέες Θεραπευτικές Ουσίες, 13. Θεραπευτικά πρωτόκολλα υπό δοκιμή.

Abstract No.: GL03 (continuation)

Abstract Title: ΘΕΡΑΠΕΥΤΙΚΗ ΠΡΟΣΕΓΓΙΣΗ ΟΣΤΕΟΠΟΡΩΣΗΣ
(THERAPEUTIC APPROACH OF OSTEOPOROSIS)

Αναδεικνύονται οι ιδιαιτερότητες κάθε κατηγορίας φαρμάκων, προσδιορίζεται η σχετική ένδειξη χορήγησης τους και σχολιάζονται οι παρενέργειες και οι εν γένει προβληματισμοί που ανακύπτουν από την χρήση τους. Επισημαίνεται ο σωστός τρόπος λήψης των φαρμάκων καθώς είναι πρωταρχικής και βαρύνουσας σημασίας για κάποια από αυτά. Σχολιάζεται επίσης η σχετική αποτελεσματικότητα των διαφόρων ουσιών σε σχέση με την μεταβολή αξιόπιστων δεικτών βελτίωσης των ασθενών, όπως η μείωση της επίπτωσης των καταγμάτων στην περιοχή του ισχίου και της σπονδυλικής στήλης. Αναδεικνύεται η ανάγκη παρακολούθησης με ακτινολογικές [DEXA, QCT] και βιοχημικές μεθόδους [Δείκτες οστικού μεταβολισμού] της θεραπευτικής πορείας και αποτελεσματικότητας.

Η φιλοσοφία της όλης παρουσίασης κατατείνει στην δημιουργία κριτηρίων επιλογής του ιδανικού φαρμάκου για τον κάθε ασθενή με οστεοπόρωση.

Η ανάγκη ανάπτυξης νέων μεθόδων μέτρησης και αξιολόγησης της απόλυτης και σχετικής αποτελεσματικότητας των ανωτέρω χορηγούμενων φαρμακευτικών παραγόντων προβάλλει αδήριτη.

Επιθυμητή επίσης η ανάδειξη νέων πρωτοποριακών φαρμάκων και τεχνικών αντιμετώπισης [Denosumab-μονοκλωνικό αντίσωμα κατά της νόσου] και η αποκάλυψη νέων μονοπατιών γύρω από την παθογένεια, άρα και από την σε νέες βάσεις αντιμετώπιση της νόσου [Σεροτονίνη].

Abstract No.: GL04

Abstract Title: ΟΣΤΕΟΠΟΡΩΣΗ ΚΑΙ ΑΣΚΗΣΗ
(OSTEOPOROSIS AND EXERCISE)

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ABSTRACT:

Η συστηματική άσκηση παίζει σημαντικό ρόλο τόσο στην πρόληψη και αντιμετώπιση της οστεοπόρωσης όσο και στη διόρθωση των παραμορφώσεων της σπονδυλικής στήλης που προκαλούνται από αυτήν. Η άσκηση προκαλεί υψηλές παραμορφώσεις στα οστά, διεγείροντας την οστεοβλαστική δραστηριότητα, ειδικά στην περιοχή του περιostίου, όπου προσφύονται οι μύες. Η βαρύτητα και η μυϊκή σύσπαση, που αναπτύσσονται ως αντίδραση στη φόρτιση, αποτελούν σημαντικές παραμέτρους που προάγουν την αύξηση της οστικής μάζας. Πολλαπλά είναι τα οφέλη της άσκησης: διατηρείται η οστική μάζα, περιορίζεται η οστική απώλεια, βελτιώνεται η μυϊκή ισχύς και η ισορροπία και περιορίζεται ο κίνδυνος πτώσεων. Η επίτευξη της κορυφαίας οστικής πυκνότητας, μέχρι την ηλικία των 25 ετών, μέσω της άσκησης, αποτελεί τον κύριο παράγοντα πρόληψης της οστεοπόρωσης στην ενήλικη ζωή.

Δύο είδη ασκήσεων ενδείκνυνται για την πρόληψη και αντιμετώπιση της οστεοπόρωσης α) Ασκήσεις μυϊκής ενδυνάμωσης: με αλτήρες, λάστιχα, τροχαλίες, βάρος σώματος β) Ασκήσεις φόρτισης: βάδιση, jogging, χορός, δαπεδοεργόμετρο. Το πρόγραμμα άσκησης εξατομικεύεται ανάλογα με την ηλικία, το νευρομυϊκό συντονισμό, την παρουσία ή όχι εγκατεστημένης οστεοπόρωσης και την καρδιοαναπνευστική λειτουργία. Παρότι η κολύμβηση είναι ιδιαίτερα δημοφιλής στις γυναίκες, δεν αποτελεί πρώτης επιλογής άσκηση για την οστεοπόρωση.

Μετά την εμμηνόπαυση, επιδιώκεται η άσκηση ενάντια στη βαρύτητα. Η άσκηση υπό αντίσταση προκαλεί θετικές προσαρμογές στο καρδιαγγειακό σύστημα και νευρομυϊκές προσαρμογές που συνδέονται με τη βελτίωση της μυϊκής ισχύος, της αντοχής, της ευλυγισίας και της ενεργητικότητας στις δραστηριότητες της καθημερινής ζωής. Η επακόλουθη διόρθωση της στάσης και της ισορροπίας μειώνουν τον κίνδυνο πτώσεων και των επακόλουθων καταγμάτων στην τρίτη ηλικία.

Οι νέες τάσεις στη θεραπευτική άσκηση για πρόληψη των πτώσεων συνίστανται σε Α) εκγύμναση του σώματος με ασκήσεις που προσομοιάζουν με τις συνθήκες απώλειας ισορροπίας και Β) εκπαίδευση της δύναμης και ταχύτητας αντίδρασης των καμπτήρων και εκτεινόντων του κορμού με σκοπό τη βελτίωση των αντιδράσεων επανάκτησης ισορροπίας (Karamanidis, 2007, Grabiner, 2008, Arampatzis, 2008).

Abstract No.: GL05

Abstract Title: ΠΑΘΟΦΥΣΙΟΛΟΓΙΑ ΧΡΟΝΙΟΥ ΠΟΝΟΥ
(PATHOPHYSIOLOGY OF CHRONIC PAIN)

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ABSTRACT:

Ως πόνος ορίζεται μία δυσάρεστη αισθητική και συναισθηματική εμπειρία σχετιζόμενη με πραγματική ή δυνητική ιστική βλάβη, ή περιγράφεται με την έννοια τέτοιας βλάβης (Ορισμός από IASP, Subcommittee on Taxonomy, 1979). Ο οξύς πόνος είναι ένα βιολογικό σύμπτωμα, μία αυτόματη απάντηση σε ένα εμφανές αλγεινό ερέθισμα, μία ιστική βλάβη, μία κάκωση ή τραύμα. Ο χρόνιος πόνος είναι πάθηση και χαρακτηρίζεται από πόνο που διαρκεί περισσότερο από την αναμενόμενη πορεία της πάθησης ή της κάκωσης. Σύνθετες χρονικό διάστημα από 3-6 μήνες.

Σύνδρομο χρόνιου πόνου είναι ο αναφερόμενος επίμονος πόνος με προοδευτική επιδείνωση της λειτουργικής ικανότητας στο σπίτι, στην εργασία, στην κοινωνία, προοδευτική αύξηση στην ζήτηση & χρήση φαρμάκων & επεμβατικών ιατρικών διεργασιών, με συνοδό διαταραχή διάθεσης, εκδήλωση σημαντικού θυμού & εχθρότητας. Συνήθη σύνδρομο χρόνιου πόνου ο χρόνιος σπονδυλικός πόνος, η ινομυαλγία, το σύνδρομο σύμπλοκου περιοχικού άλγους, ο πόνος φάντασμα κ. α.

Η σωστή προσέγγιση του χρόνιου πόνου στηρίζεται στην παραδοχή ενός νέου μοντέλου, του βιοψυχοκοινωνικού μοντέλου, όπου ο χρόνιος πόνος αποτελείται από τρεις ισοδύναμες συνιστώσες, την αισθητική, την συναισθηματική και την γνωστική.

Συχνοί Τύποι Πόνου – Παθοφυσιολογία:

Αλγαισθητικός Πόνος: Προσαρμοστικός και προστατευτικός τύπος πόνου. Οι αλγοϋποδοχείς μεταφέρουν μηχανικά, χημικά και θερμικά ερεθίσματα, μέσω δυναμικών δράσης των διαύλων νατρίου της μεμβράνης, με τις αμύελες C-ίνες και τις παχιές εμμύελες Αδ-ίνες, τα οποία ερμηνεύονται ως πόνος στο Κ.Ν.Σ. Μικρές κακώσεις ή χειρουργεία και εμβολιασμοί είναι τυπικά παραδείγματα μηχανισμών που ενεργοποιούν το αλγαισθητικό σύστημα.

Φλεγμονώδης Πόνος: Αλγεινή απάντηση σε σημαντική ιστική βλάβη με πρόκληση φυσιολογικών αλλαγών στο νευρικό σύστημα οι οποίες προκαλούν πόνο με τρεις διαφορετικούς πόνους: 1. Προφλεγμονώδεις διαβιβαστές (PGs) μειώνουν τον ουδό των πρωτογενών αισθητικών νευρώνων, επιτρέποντας φυσιολογικά ανώδυνα ερεθίσματα να γίνονται επώδυνα. Το φαινόμενο αυτό ονομάζεται περιφερική ευαισθητοποίηση (peripheral sensitization), 2. Η φλεγμονή δύναται να προκαλέσει πόνο με την τροποποίηση ιδιοτήτων και λειτουργιών των νευρώνων, φαινόμενο το οποίο ονομάζεται φαινοτυπική εναλλαγή (phenotypic switch), 3. Η φλεγμονή δύναται να αυξήσει την διεγερσιμότητα και αντιδραστικότητα των νευρώνων του ΚΝΣ, φαινόμενο το οποίο ονομάζεται κεντρική ευαισθητοποίηση (central sensitization).

Abstract No.: GL05 (continuation)

Abstract Title: ΠΑΘΟΦΥΣΙΟΛΟΓΙΑ ΧΡΟΝΙΟΥ ΠΟΝΟΥ
(PATHOPHYSIOLOGY OF CHRONIC PAIN)

Παρατεταμένη κεντρική ευαισθητοποίηση δύναται να οδηγήσει σε μόνιμες δομικές τροποποιήσεις του ΚΝΣ οι οποίες προκαλούν χρόνιο πόνο.

Νευροπαθητικός Πόνος: Προκαλείται από μία βλάβη στο Π.Ν.Σ., όπως διαβητική ή συνεπεία AIDS πολυνευροπάθεια, μεθερπητική νευραλγία, ριζίτιδα, ή από μία βλάβη του Κ.Ν.Σ. όπως η Κ.Ν.Μ., Α.Ε.Ε., Σ.Κ.Π.

Λειτουργικός πόνος: Πόνος για τον οποίο δεν υπάρχει αναγνωρίσιμη αιτία, περιφερικής ή κεντρικής παθολογίας. Παραδείγματα αποτελούν ο πόνος του συνδρόμου ευερέθιστου εντέρου, ο καρκινικός πόνος, η κεφαλαλγία τάσης ή η ημικρανία.

Θεραπεία: Ο ΧΣΠ μπορεί να καταλήξει σε ανικανότητα ή αναπηρία και απαιτεί διεπιστημονική και ολοκληρωτική (interdisciplinary and comprehensive) προσέγγιση εκτίμησης και θεραπείας. Την ομάδα συγκροτούν, στην τυπική της μορφή, Φυσίατρος ή ειδικός ιατρός πόνου, κλινικός ψυχολόγος, φυσιοθεραπευτής, εργοθεραπευτής, επαγγελματικός σύμβουλος, κοινωνικός λειτουργός, θεραπευτής αναψυχής, διαιτολόγος και νοσηλεύτρια αποκατάστασης. Ιατροί άλλων ειδικοτήτων συνήθως είναι διαθέσιμοι σε συμβουλευτική βάση (ως σύμβουλοι ιατροί).

Οι πλέον κατάλληλοι ασθενείς για συμμετοχή σε τέτοια προγράμματα είναι εκείνοι οι ασθενείς με ΧΣΠ που έχουν παρακινηθεί για ενεργό συμμετοχή, δεν έχουν δευτερογενή οφέλη που μπορεί να αναστέλλουν την βελτίωση και έχουν αποδεχθεί τις αρχές και τους στόχους του προγράμματος.

Στόχοι θεραπείας: Αυτοί οι στόχοι συνοπτικά είναι η μείωση λήψης φαρμάκων, η τροποποίηση της συμπεριφοράς του ασθενούς στον πόνο, η τροποποίηση του πόνου, η αύξηση της φυσικής δραστηριότητας, η μείωση της ανικανότητας, η βελτίωση της ποιότητας ζωής.

Φαρμακευτική θεραπεία: Ο στόχος της διαχείρισης των φαρμάκων του ασθενή με ΧΣΠ είναι να μειωθεί ή να διακοπεί η χρήση ναρκωτικών, ηρεμιστικών και υπνωτικών φαρμάκων.

Ψυχοκοινωνικές Παρεμβάσεις: Σ' αυτές τις θεραπευτικές παρεμβάσεις περιλαμβάνονται ψυχοθεραπευτικές συνεδρίες, θεραπεία συμπεριφοράς (την παρέμβαση και τροποποίηση της συμπεριφοράς του ασθενή σ' όλο το περιβάλλον του), βιολογική ανατροφοδότηση και εκπαίδευση τεχνικών χαλάρωσης, συμβουλευτική εργασία.

Θεραπεία Τροποποίησης Πόνου: Συνοπτικά οι διάφορες θεραπείες τροποποίησης του πόνου είναι ο Διαδερμικός Ηλεκτρικός Νευρικός Ερεθισμός (TENS), τα Θερμά και Ψυχρά Φυσικά Μέσα, η Βιολογική Ανατροφοδότηση (Biofeedback – BFB), επεμβατικές θεραπείες (επισκληρίδιες, διατρηματικές εγχύσεις, αποκλεισμός νεύρων κ.α), τεχνικές νευροτροποποίησης του νωτιαίου μυελού

Αύξηση Επιπέδου Φυσικής Δραστηριότητας: Ο στόχος των θεραπευτικών ασκήσεων γι' αυτούς τους ασθενείς είναι η ανακούφιση από τον πόνο και η βελτίωση της ποιότητας ζωής.

Abstract No.: GL06

Abstract Title: ΜΥΟΠΕΡΙΤΟΝΙΑΚΟΣ ΠΟΝΟΣ – ΙΝΟΜΥΑΛΓΙΑ
(PAIN AND FIBROMYALGIA)

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ABSTRACT:

Το μυοπεριτονιακό άλγος είναι ένα περιοχικό σύνδρομο πόνου (οξέως ή χρόνιου) μυοσκελετικής προέλευσης. Μπορεί να προσβάλλει τους μυς και τις περιτονίες, οπουδήποτε στον ανθρώπινο οργανισμό. Χαρακτηρίζεται από την παρουσία ενός ή πολλαπλών επώδυνων στην πίεση περιοχών που ονομάζονται μυοπεριτονιακά σημεία πυροδότησης (trigger points), τα οποία είναι βρίσκονται τυπικά σε σημεία όπου η περιτονία έρχεται σε επαφή με κάποιον μυ. Εκτός από τον πόνο, οι ασθενείς που πάσχουν από μυοπεριτονιακό άλγος συχνά αναφέρουν αιμωδίες στα άκρα, περιορισμό εύρους κίνησης αρθρώσεων (συνήθως κροταφογναθικής), μυϊκή αδυναμία, κεφαλαλγία, διαταραχές ύπνου/ισορροπίας/όρασης/μνήμης, ζάλη, ναυτία και εφίδρωση.

Η ινομυαλγία αποτελεί ένα σύνδρομο κεντρικής αιτιολογίας πόνου και προσβάλλει κυρίως νέες ή μέσης ηλικίας γυναίκες, προκαλώντας συνεχές, διάχυτο άλγος σε μυς, τένοντες και συνδέσμους και αίσθημα κόπωσης. Η ετοιμολογία του όρου "fibromyalgia" προέρχεται από τη λατινική λέξη "fibro" που σημαίνει ινώδης ιστός και από τις ελληνικές λέξεις μυς ("my") και άλγος ("algia"). Οι ασθενείς συχνά αναφέρουν διαταραχές ύπνου και γνωσιακές διαταραχές, άγχος/κατάθλιψη με επακόλουθες δυσκολίες στις δραστηριότητες καθημερινής ζωής, πρωινή δυσκαμψία, ευερέθιστο έντερο, ναυτία, ζάλη, κεφαλαλγία, διαταραχές όρασης/μνήμης, αύξηση σωματικού βάρους. Η ινομυαλγία χαρακτηρίζεται από την παρουσία ευαίσθητων στην πίεση σημείων (tender points) σε συγκεκριμένες περιοχές του ανθρώπινου σώματος. Απαιτείται η παρουσία τουλάχιστον 11 από τα 18 προκαθορισμένα tender points, τα οποία διαπιστώνονται με την άσκηση πίεσης με τα δάχτυλα ή με ειδικό αλγόμετρο (~4kg).

Ο χρόνιος πόνος αποτελεί κοινό σύμπτωμα των παραπάνω κλινικών συνδρόμων- του μυοπεριτονιακού άλγους και της ινομυαλγίας. Τα trigger points του μυοπεριτονιακού συνδρόμου είναι παρόμοια με τα tender points της ινομυαλγίας, είναι όμως ψηλαφητά σαν επώδυνα οζίδια κάτω από το δέρμα και η ψηλάφησή τους προκαλεί συνήθως «αναφερόμενο» πόνο, δηλαδή σε περιοχή απομακρυσμένη από τα trigger points.

Abstract No.: GL07

Abstract Title: ΧΡΟΝΙΟΣ ΣΠΟΝΔΥΛΙΚΟΣ ΠΟΝΟΣ
(CHRONIC VERTEBRAL PAIN)

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ABSTRACT:

Ο χρόνιος σπονδυλικός πόνος αποτελεί την πιο δαπανηρή καλοήγη νόσο. Ορίζεται ως άλγος διάρκειας μεγαλύτερης των δώδεκα εβδομάδων, που συνηθέστερα οφείλεται δε τραυματισμό ή εκφύλιση της Σ.Σ.

Στον χρόνιο σπονδυλικό πόνο, σε αντίθεση με τον οξύ, η διάγνωση είναι δύσκολη, η θεραπεία μακροχρόνια, συνυπάρχει κατάθλιψη και αυξημένος κίνδυνος εθισμού σε φαρμακευτικές ουσίες. Υπολογίζεται ότι το 80% των Αμερικανών βιώνουν κατά τη διάρκεια της ζωής τους επεισόδια οξέος σπονδυλικού πόνου. Από αυτούς 2-8% πάσχουν από χρόνιο πόνο.

Η αιτιολογία του χρόνιου πόνου είναι πολυπαραγοντική. Εμπλέκονται παθοφυσιολογικοί μηχανισμοί (περιφερικής και κεντρικής αιτιολογίας), ψυχολογικοί παράγοντες και αναστολές της ίασης, όπως επανατραυματισμός ή παθολογικά νοσήματα (σακχαρώδης διαβήτης). Όλες οι δομές της περιοχής της οσφύς (οστικές, μυϊκές, νευρικές και συνδεσμικές), είναι δυνατό να είναι επηρεασμένες και πιθανώς υποθεραπευμένες κατά το παρελθόν.

Η προσέγγιση του ασθενούς πρέπει να περιλαμβάνει τη λήψη ενός πλήρους ιατρικού ιστορικού, ενδελεχή αναζήτηση εθισμού σε φαρμακευτικές ουσίες, κλινική και λειτουργική εκτίμηση και τον απαραίτητο κάθε φορά παρακλινικό έλεγχο.

Οι στόχοι της θεραπείας είναι να εντοπιστεί η εστία του πόνου και να αναζητηθούν και άλλες θεραπευτικές μέθοδοι πέραν της φαρμακευτικής αγωγής. Τα τελευταία χρόνια κερδίζουν έδαφος οι γνωσιακές συμπεριφεριολογικές θεραπείες, που στόχο έχουν να εντάξουν τον ασθενή στη διαδικασία της θεραπείας του. Επίσης χρησιμοποιούνται τα αντικαταθλιπτικά φάρμακα και εναλλακτικές θεραπείες.

Σε κάθε περίπτωση ο ασθενής με χρόνιο σπονδυλικό πόνο απαιτεί ολιστική προσέγγιση από την ομάδα θεραπειών και εξατομικευμένη θεραπεία.

Abstract No.: GL08

Abstract Title: ΝΕΥΡΟΠΑΘΗΤΙΚΟΣ ΠΟΝΟΣ
(NEUROPATHIC PAIN)

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ABSTRACT:

Σαν νευροπαθητικός πόνος ορίζεται ο πόνος που είναι αποτέλεσμα νόσου, κάκωσης ή δυσλειτουργίας του περιφερικού ή του κεντρικού νευρικού συστήματος και όχι ερεθισμού των υποδοχέων του πόνου. Στα κριτήρια διάγνωσης περιλαμβάνονται ο πόνος με σαφή νευροανατομική κατανομή, το ιστορικό βλάβης ή νόσου του περιφερικού ή κεντρικού νευρικού συστήματος τα οποία αποδεικνύονται με ένα τουλάχιστον επιβεβαιωτικό τεστ.

Οι μηχανισμοί πρόκλησης του είναι διαφορετικοί αυτών του αλγαισθητικού πόνου, σε αυτούς δε περιλαμβάνονται η γένεση έκτοπης δραστηριότητας σαν αποτέλεσμα της βλάβης στα περιφερικά νεύρα, η επέκταση του αλγεινού πεδίου, η νωτιαία ευαισθητοποίηση, η απώλεια του ανασταλτικού ελέγχου καθώς και η συμμετοχή του αυτόνομου και του μετεχμιακού συστήματος.

Ο κλινικός έλεγχος περιλαμβάνει α) το ιστορικό σχετικά με την ένταση, τον αισθητικό τύπο, τη χρονική διακύμανση, τις λειτουργικές επιπτώσεις, τις αποπειραθείσες θεραπείες και τη χρήση ουσιών β) τη φυσική εξέταση κινητικότητας και αισθητικότητας και γ) ειδικά εργαστηριακά τεστ.

Η διαχείριση του νευροπαθητικού πόνου γίνεται με α) μη φαρμακευτικά μέσα όπως άσκηση, TENS, PENS, διαβαθμισμένη κινητική νοητικά εικονική αναπαράσταση (Graded motor imagery), γνωσιακή και συμπεριφεριολογική θεραπεία, υποστηρικτική ψυχοθεραπεία, συμπληρωματικές και εναλλακτικές θεραπείες, β) φαρμακευτική αγωγή η οποία περιλαμβάνει αντικαταθλιπτικά, αντιεπιληπτικά, οπιοειδή αναλγητικά, ανταγωνιστές NMDA, τοπικά αναλγητικά και γ) επεμβατικές μεθόδους όπως επισκληρίδια ή περινεύρια έγχυση φαρμάκων, εμφύτευση αντλίας φαρμάκων στον υπαρχονοειδή χώρο και εισαγωγή διεγέρτη στον νωτιαίο μυελό.

Abstract No.: GL09

Abstract Title: **ΦΥΣΙΚΑ ΜΕΣΑ:
ΦΥΣΙΟΛΟΓΙΚΑ ΑΠΟΤΕΛΕΣΜΑΤΑ ΣΤΟ ΝΕΥΡΟΜΥΪΚΟ
ΣΥΣΤΗΜΑ
(PHYSICAL MEANS: PHYSIOLOGICAL RESULTS ON THE
NEUROMUSCULAR SYSTEM)**

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ABSTRACT:

Στην Ιατρική με τον όρο εφαρμογή φυσικών μέσων εννοούμε την εφαρμογή μιας μορφής ενέργειας στο σώμα με σκοπό την πρόκληση συγκεκριμένων ωφέλιμων φυσιολογικών απαντήσεων. Οι μορφές που συνήθως χρησιμοποιούνται είναι η θερμική, η οπτική, ο ηλεκτρισμός, η μηχανική ενέργεια με έκφραση στην επιφανειακή και εν τω βάθει θερμοθεραπεία, την κρυοθεραπεία, τον ηλεκτρικό ερεθισμό και την κινητοποίηση των μαλακών ιστών (μάλαξη).

Τα φυσιολογικά αποτελέσματα εξαρτώνται από την αλληλεπίδραση της ενέργειας με τους βιολογικούς ιστούς, λαμβάνοντας υπόψη ότι η ερεθιστότητα και διεγερσιμότητα είναι, σε διαφορετική έκταση, χαρακτηριστική ιδιότητα όλων των κυττάρων και περισσότερο αναπτυγμένη στα κύτταρα των σκελετικών μυών και τα νευρικά κύτταρα. Μετά από κατάλληλο ερέθισμα η διέγερση συνοδεύεται από χημικές και ηλεκτρικές μεταβολές που διαχέονται στην κυτταρική μεμβράνη και πυροδοτούν αλυσίδα μεταβολών σε επίπεδο ιστών ή και οργάνων.

Κατά την εφαρμογή των φυσικών μέσων και αναλόγως του ενδεικνυόμενου είδους μπορεί να παρατηρηθεί αύξηση ή μείωση του κυτταρικού μεταβολισμού, διαφοροποίηση της αιματικής ή λεμφικής παροχής, αύξηση της παροχής των ιστικών θρεπτικών στοιχείων, τροποποίηση της διαπερατότητας των μεμβρανών και μεταβολές συγκέντρωσης στοιχείων, έκλυση νευροτροποποιητικών ουσιών, ερεθισμός των μηχανοϋποδοχέων, ερεθισμός ή καταστολή των νευρικών απολήξεων, κ.α.

Τα **αποτελέσματα - στόχος** για το πεδίο της Ιατρικής Αποκατάστασης είναι η μυϊκή χάλαση, η μυϊκή επανεκπαίδευση, η μείωση των στοιχείων της φλεγμονής, η αναλγησία και τελικά η βελτίωση της λειτουργικότητας.

Για τη σωστή επιλογή και κατάλληλη εφαρμογή ενός φυσικού μέσου είναι απαραίτητη η γνώση των μηχανισμών αλληλεπίδρασης της ενέργειας με τους ιστούς του σώματος και η κατανόηση των μηχανισμών που θεωρούνται υπεύθυνοι για την πρόκληση των αναμενόμενων αποτελεσμάτων.

Abstract No.: GL10

Abstract Title: ΦΥΣΙΚΑ ΜΕΣΑ:
ΝΕΥΡΟΦΥΣΙΟΛΟΓΙΚΑ ΑΠΟΤΕΛΕΣΜΑΤΑ ΓΙΑ ΠΡΟΚΛΗΣΗ
ΑΝΑΛΓΗΣΙΑΣ
(PHYSICAL MEANS: NEUROPHYSIOLOGICAL RESULTS FOR
ANALGESIA)

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ABSTRACT:

Η πρόκληση αναλγησίας στα φυσικά μέσα γίνεται μέσα από τη θεωρία της πύλης ελέγχου που δημοσιεύθηκε από τον Melzack^x το 1965. Το σύστημα της πύλης ελέγχου του πόνου ξεκινά από την διαπίστωση ότι η δραστηριότητα των μεγαλύτερης διάμετρου νευρικών ινών εμποδίζει την προώθηση των νευρικών ώσεων από μικρότερες νευρικές ίνες C. Αυτή η διέγερση θεωρείται ότι ενεργοποιεί ανασταλτικούς ενδιάμεσους νευρώνες που βρίσκονται στην substantia gelatinosa (SG) των οπίσθιων κεράτων και οι ενδιάμεσοι αυτοί νευρώνες ασκούν μία συνολική ανασταλτική δράση στα κύτταρα μετάδοσης πόνου (T cells) των οπίσθιων κεράτων. Παράλληλα έχει βρεθεί το σύστημα των οπιοειδών που λειτουργεί σε υπερνωτιαίο επίπεδο (φλοιϊκές και υποφλοιϊκές περιοχές), και ονομάζεται το κατιών ενδογενών οπιοειδών σύστημα (Descending Endogenous Opiate System DEOS). Το σύστημα αυτό ενισχύει το κλείσιμο της πύλης με την ικανότητα παραγωγής των κυτταρικών ενδογενών οπιοειδών. Η προτεινόμενη λειτουργία του συστήματος περιλαμβάνει κατ' αρχής ερεθισμό των μικρής διαμέτρου νευρικών ινών και εκπόλωση των T cells των οπίσθιων κεράτων διαμέσου των ενδιάμεσων νευρώνων SG. Η αύξηση των οπιοειδών στο εγκεφαλονωτιαίο υγρό^{xi} και στο πλάσμα αποδειχτεί και αναφέρονται με τον γενικό τίτλο ενδορφίνες^{xii}.

Πρόσφατη δημοσίευση του Melzack το 1999^{xiii} συμπληρώνει τη θεωρία της πύλης εισόδου με τη θεωρία της νευρονικής φόρμας (neuromatrix theory). Προτείνει ότι ο πόνος είναι πολυδιάστατη εμπειρία που παράγεται από χαρακτηριστικά νευρωνικά σινιάλα που παράγονται από το συνολικά νευρωνικά κυκλώματα που τα ονομάζει σωματικές νευρονικές φόρμες (body self-matrix). Σύμφωνα με αυτή τη θεωρία ο χρόνιος πόνος παράγεται από το αποτέλεσμα των συνολικών νευρωνικών κυκλωμάτων που βρίσκονται κυρίως στον εγκέφαλο παρά στην περιφέρεια και που είναι γενετικά καθορισμένα. Βιβλιογραφία:

¹ Melzack R, Wall PD (1965). Pain mechanisms: A new theory . Science, 150:971-979.

¹ Copolov DL, Helme RD. Enkephalins and endorphins. Clinical, Pharmacological and therapeutic implications . Drugs 1983;26:503-519

¹ Watkins LR, Mayer DJ. Organization of endogenous opiate and nonopiate pain control systems, Science 1982;216:1185-1192

¹ Melzack R 1999 From the gate to the neuromatrix. Pain (suppl), 6:121-126.

Abstract No.: GL11

Abstract Title: ΦΥΣΙΚΑ ΜΕΣΑ: ΕΠΙΣΤΗΜΟΝΙΚΗ ΑΠΟΔΕΙΞΗ
ΑΠΟΤΕΛΕΣΜΑΤΙΚΟΤΗΤΑΣ
(PHYSICAL MEANS AND EVIDENCE BASED EFFECTIVENESS)

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ABSTRACT:

Η μεγιστοποίηση της αποτελεσματικότητας των φυσικών μέσων εξασφαλίζεται όταν αυτά εφαρμόζονται με τις σαφείς ενδείξεις και αντενδείξεις. Αυτό οδηγεί τον περιορισμό των εφαρμογών σε ενδεικνυόμενες μόνο περιπτώσεις με βάση την βιβλιογραφία και τις κλινικές εφαρμογές (evidence based medicine).

Με τον τρόπο αυτό, αφενός μεν αποφεύγεται η κακοποίηση των φυσικών μέσων και οι υπερβολικές προσδοκίες της εφαρμογής τους και αφετέρου επικεντρώνονται σε συγκεκριμένες ενδείξεις. Αυτό έχει σαν αποτέλεσμα να οδηγούμαστε στην αποφυγή της χρονιότητας των παθολογικών καταστάσεων. Άρα τα φυσικά μέσα καθοδηγούνται στον καθοριστικό τους ρόλο που πρέπει να έχουν, δηλαδή ως βασικό θεραπευτικό εργαλείο στην αποκατάσταση σε συνδυασμό με την υπόλοιπη θεραπευτική αγωγή.

Abstract No.: GL12

Abstract Title: ΦΥΣΙΚΑ ΜΕΣΑ: ΝΕΩΤΕΡΕΣ ΤΕΧΝΙΚΕΣ ΚΑΙ ΜΕΘΟΔΟΙ
(PHYSICAL MEANS: NEW TECHNIQUES AND METHODS)

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ABSTRACT:

Η αποτελεσματικότητα της εφαρμογής των φυσικών μέσων είναι επιστημονικά τεκμηριωμένη. Η ορθή εφαρμογή των φυσικών μέσων στοχεύει στην μέγιστη θεραπευτική απάντηση των ιστών.

Σήμερα με την αυξημένη κατανόηση της νευροφυσιολογίας και την ανάπτυξη της τεχνολογίας, τα προγράμματα αποκατάστασης εμπλουτίστηκαν με νέες τεχνικές και μεθόδους που έχουν σκοπό την καλύτερη προετοιμασία των ιστών.

Η εφαρμογή παλμικών ρευμάτων, συσκευών κάθετης ή οριζόντιας και κάθετης δόνησης, δίσκων ιδιοδεκτικότητας και διαδρόμων επανεκπαίδευσης βάδισης, αποτελούν μερικές από αυτές, καθώς επίσης και η επιστημονικά αποδεδειγμένη αποτελεσματικότητα εναλλακτικών μορφών θεραπείας, όπως ο βελονισμός και η μεσοθεραπεία.

Υπάρχουν πολλά πεδία δράσης και συνέχεια ανοίγονται καινούργιοι ορίζοντες που θα πρέπει να διερευνηθούν πάνω στην εφαρμογή των φυσικών μέσων .

Abstract No.: GL15

Abstract Title: ΑΠΟΚΑΤΑΣΤΑΣΗ ΑΣΘΕΝΟΥΣ ΜΕ ΕΓΚΑΥΜΑΤΙΚΗ ΝΟΣΟ
(REHABILITATION OF PATIENT WITH BURN DISEASE)

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ABSTRACT:

Η αποκατάσταση ασθενούς με εγκαυματική νόσο είναι μια εξατομικευμένη και πολυσταδιακή διαδικασία, στόχος της οποίας είναι η επίτευξη μέγιστης λειτουργικότητας και ανεξαρτησίας.

Στην οξεία φάση γίνεται προσπάθεια προαγωγής της επούλωσης, περιορισμού των εσχάρων, μείωσης του πόνου και πρόληψης των επιπλοκών με σωστή τοποθέτηση του ασθενούς, εφαρμογή κατάλληλων ναρθήκων και προγράμματος θεραπευτικής άσκησης για διατήρηση εύρους κίνησης και ενδυνάμωσης.

Η υποξεία φάση αποκατάστασης αρχίζει όταν η φροντίδα των ελκών παύει να αποτελεί το κύριο στόχο και περιλαμβάνει τη φροντίδα του δέρματος, την αντιμετώπιση του κνησμού, τη καταστολή των υπερτροφικών ουλών και την αντιμετώπιση της μετεγκαυματικής νευροπάθειας.

Το ηλεκτρικό έγκαυμα παρουσιάζει ιδιαιτερότητες, τόσο όσον αφορά τη διαδικασία της βλάβης, όσο και τις επιπτώσεις στο κεντρικό και περιφερικό νευρικό σύστημα αλλά και το καρδιαγγειακό σύστημα.

Ο ακρωτηριασμός στην εγκαυματική νόσο, άμεσος ή καθυστερημένος, προκαλεί σοβαρά προβλήματα στην αποκατάσταση τόσο από την ύπαρξη των ελκών και το εύρος των συγκάμψεων, όσο και των ψυχολογικών διαταραχών και των δυσκολιών εφαρμογής πρόσθεσης.

Σημαντική παράμετρο για ένα επιτυχημένο πρόγραμμα αποκατάστασης, αποτελεί η ψυχολογική προσαρμογή για οικογενειακή, κοινωνική και επαγγελματική επανένταξη.

Abstract No.: GL16

Abstract Title: Η ΜΕΘΟΔΟΛΟΓΙΑ ΤΗΣ ΒΙΒΛΙΟΓΡΑΦΙΚΗΣ ΤΕΚΜΗΡΙΩΣΗΣ ΣΤΗ Φ.Ι.ΑΠ.
ΜΕΣΩ ΔΙΑΔΙΚΤΥΟΥ
(BIBLIOGRAPHIC INDICATIVE METHODOLOGY IN PRM THROUGH THE INTERNET)

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ABSTRACT:

Η αναζήτηση βιβλιογραφικών πηγών στο διαδίκτυο αποτελεί ένα σύνθηρες στάδιο προετοιμασίας επιστημονικών εργασιών. Λόγω της πληθώρας διαθέσιμων πληροφοριών, απαιτείται αρκετός χρόνος για την ανεύρεση αξιόπιστων δεδομένων και την επεξεργασία τους. Σκοπός της ομιλίας είναι η παρουσίαση των πιο αξιόλογων, συναφών με την Φυσική Ιατρική & Αποκατάσταση (ΦΙΑΠ), πηγών διαδικτυακής βιβλιογραφικής ενημέρωσης, με έμφαση στην αξιοποίηση των εργαλείων και υπηρεσιών τις οποίες παρέχουν.

Κορυφαίες μηχανές αναζήτησης, εξειδικευμένες στην επιστημονική βιβλιογραφία όπως το Pubmed, αλλά και γενικότερου ενδιαφέροντος όπως το Google μπορούν να συμβάλουν σημαντικά στη βιβλιογραφική τεκμηρίωση. Με την κατάλληλη παραμετροποίηση, η αναζήτηση μετατρέπεται σε μια απλή και αποτελεσματική διαδικασία, ενώ ο χρήστης έχει τη δυνατότητα να παραμένει διαρκώς ενήμερος για τα θέματα που τον ενδιαφέρουν μέσω ηλεκτρονικών ενημερωτικών δελτίων.

Μια ιδιαίτερη κατηγορία βιβλιογραφικών πηγών, αποτελούν οι βάσεις δεδομένων «ιατρικής βασισμένης σε αποδείξεις». Εκτός από τις βάσεις οι οποίες αφορούν αμιγώς ιατρικά θέματα, υπάρχουν και εξειδικευμένες σε επιμέρους θεραπευτικούς τομείς (φυσικοθεραπεία, εργοθεραπεία κλπ).

Ιατρικές εγκυκλοπαίδειες, ηλεκτρονικά βιβλία, συλλογές κατευθυντήριων γραμμών και ενημερωτικά άρθρα είναι διαθέσιμα στον παγκόσμιο ιστό και σε αρκετές περιπτώσεις προσφέρουν ελεύθερη πρόσβαση.

Η τηλεεκπαίδευση αποτελεί τομέα, ο οποίος κερδίζει διαρκώς έδαφος, με πλούσια δραστηριότητα σε επίπεδο συνεχιζόμενης εκπαίδευσης, τηλεσεμιναρίων, ερωτηματολογίων αυτό-αξιολόγησης και τηλεδιασκέψεων. Πλέον των ιστότοπων, οι οποίοι προσφέρουν επιστημονικό υλικό στον τομέα της αποκατάστασης, υπάρχουν πλατφόρμες εκπαίδευσης με αποκλειστικό αντικείμενο τη μεθοδολογία της έρευνας.

Ο παγκόσμιος ιστός παρέχει πληθώρα πληροφοριών, απαραίτητων για την έρευνα και διαρκή ενημέρωση των επαγγελματιών υγείας. Η μεθοδολογία αναζήτησης αποτελεί το κλειδί για τη βέλτιστη αξιοποίηση των πληροφοριών αυτών.

Abstract No.: GL17

Abstract Title: ΣΥΝΤΗΡΗΤΙΚΗ ΘΕΡΑΠΕΙΑ ΕΠΩΔΥΝΟΥ ΩΜΟΥ, ΚΛΑΣΣΙΚΕΣ & ΣΥΓΧΡΟΝΕΣ ΤΕΧΝΙΚΕΣ (PAINFUL SHOULDER CONSERVATIVE TREATMENT, CLASSIC AND MODERN TECHNIQUES)

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ABSTRACT:

Η πάθηση ή η κάκωση που εκφράζεται κλινικά με επώδυνο ώμο είναι μια από τις συχνότερες αιτίες που αναγκάζουν κάποιο/α ασθενή να προσέλθει στο Ιατρείο – Θεραπευτήριο του/της Ιατρού Φυσικής Ιατρικής & Αποκατάστασης (Φυσιάτρου) προς αναζήτηση θεραπείας. Στις περισσότερες ίσως περιπτώσεις, βρίσκεται σε χρόνια φάση της πάθησής του. Έχει επισκεφθεί άλλους ειδικούς ιατρούς (ορθοπαιδικούς, ρευματολόγους κ.α.), έχει υποβληθεί σε διάφορες εργαστηριακές εξετάσεις και διάφορα θεραπευτικά σχήματα χωρίς όμως αποτέλεσμα. Το εύρος της κλινικής κατάστασης συνήθως ποικίλει από απλό άλγος που όμως είναι ιδιαίτερα ενοχλητικό και παρεμβάλλει στην εκτέλεση των καθημερινών δραστηριοτήτων, μέχρι εξαιρετικά επώδυνο ώμο που προκαλεί σημαντικά προβλήματα ακόμα και στον ύπνο. Σπανιότερα ο/η ασθενής προσέρχεται με ανώδυνο αλλά «παγωμένο ώμο», χωρίς εύρος κίνησης που προκαλεί σημαντική αναπηρία αφού κάνει αδύνατη τη χρήση όλου του άνω άκρου ακόμα και σε απλές καθημερινές δραστηριότητες. Τέλος, υπάρχουν και περιπτώσεις ασθενών που προσέρχονται ψάχνοντας τον Ιατρό που θα λύσει το πρόβλημα του επώδυνου ώμου τους με συντηρητική θεραπεία επειδή φοβούνται να υποβληθούν στη χειρουργική θεραπεία που τους έχει ήδη συσταθεί.

Η συντηρητική θεραπεία ασθενών με επώδυνο ώμο είναι μια από τις πιο δύσκολες και πολύπλοκες καταστάσεις που καλούμαστε να αντιμετωπίσουμε ως Φυσιάτροι. Η λεπτομερής καταγραφή του ιστορικού της παρούσας νόσου, όπως και όλου του ιατρικού ιστορικού, η άρτια κλινική εξέταση και η ανασκόπηση όλων των εργαστηριακών εξετάσεων είναι το πρώτο σημαντικό βήμα. Είναι σε όλους γνωστό ότι οι αιτίες που προκαλούν επώδυνο ώμο είναι πάρα πολλές και διαφορετικές μεταξύ τους. Κατά συνέπεια, η σαφής διάγνωση αποτελεί θεμέλιο λίθο για τη θεραπεία.

Σκοπός αυτής της παρουσίασης δεν είναι να «αναμασήσουμε» φάρμακα, φυσικά μέσα και τεχνικές. Ο βασικός σκοπός είναι να παρουσιασθεί ο τρόπος, η σκέψη και η προσέγγιση που μόνο ο Ιατρός Φυσικής Ιατρικής & Αποκατάστασης μπορεί και πρέπει να έχει για να βοηθήσει ασθενείς με επώδυνο ώμο. Το σημαντικό είναι να καταλάβουμε πρώτα εμείς «τι το διαφορετικό μπορεί να προσφέρει ο/η Φυσιάτρος» για να μπορέσουμε μετά να το εξηγήσουμε σε ασθενείς. Στην παρουσίαση, φυσικά και θα αναφερθούν κλασσικές και σύγχρονες τεχνικές που χρησιμοποιούν οι Φυσιάτροι με ιδιαίτερη έμφαση στα θεραπευτικά μέσα που βάζουν τη σφραγίδα της ιδιαιτερότητας της Φυσικής Ιατρικής & Αποκατάστασης.

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