P461-e
The relationship of prosthesis usage, phantom pain and psychiatric symptoms in male traumatic limb amputees
a Department of Physical Medicine and Rehabilitation, Medical Faculty, Ondokuz Mayis University, Samsun, Turkey
b Gulhane Military Medical Academy, Department of PMR, Turkish Armed Forces Rehabilitation Center, Ankara, Turkey
c Department of Psychiatry, Medical Faculty, Ondokuz Mayis University, Samsun, Turkey
*Corresponding author.

Keywords: Amputee; Prosthesis; Phantom pain; Psychiatric symptoms

Background.– Aim of this clinical trial was to evaluate the relationship of prosthesis usage, phantom pain and psychiatric symptoms in male traumatic limb amputees (LAs).

Methods.– Fifty-one LAs patients (group 1) and 53 healthy controls (group 2) were included. Phantom pain was measured visual analog scale (VAS). Psychiatric symptoms were measured using the Symptom Checklist-90-R, Beck Depression Inventory, Pittsburgh Sleep Quality Index, Rosenberg Self-Esteem Scale and State-Trait Anxiety Inventory.

Results.– The intergroup comparison showed significant differences in phobic anxiety (P = 0.003), state anxiety (P = 0.0001), trait anxiety (P = 0.001), and sleep disturbance (P = 0.002). The differences were statistically significant in group 1 compared with group 2. There were significant negative correlations between duration of amputation, duration of prosthesis usage, duration of daily prosthesis usage, and satisfaction with prosthesis questionnaire scores and psychiatric symptoms. There were no correlations between phantom pain and psychiatric measurements.

Discussion.– In our study, correlations have been found between duration of prosthesis usage, duration of daily prosthesis usage and satisfaction with prosthesis and lower psychiatric symptoms (somatization, obsessive-compulsive symptoms, interpersonal sensitivity, anger hostility, phobic anxiety and psychotism). Duration of prosthesis usage and satisfaction with prosthesis may be important for rehabilitation of psychiatric symptoms. There is no relationship between phantom pain and psychiatric measurements in LAs patients.

http://dx.doi.org/10.1016/j.rehab.2014.03.443

P462-e
Some features of rehabilitation for patients with chronic bronchial diseases in combination of chest deformation caused by spine disorders
M. Kryuchenko
Kharkiv national medical university, Kharkov

Keywords: Chronical bronchial diseases; Chest deformation; Kinezotherapy

Background.– Clinical problem includes thorax deformation because of different disturbances of spine. It results in pathologic changing of chest volume and then lungs volumes in patients with chronic bronchial diseases (CBD) [1].

Objective.– Determination of new approaches to breath restorative therapy for patients with CBD.

Methods.– Rehabilitation programme included posture correction, breathing kinezotherapy, procedures of therapeutic physical exercises. Yoga-therapy, fit-ball gymnastics, sound exercises, relaxation exercises, water exercises, methods of massage. Rehabilitation course was carried out daily during 3.5 hours as the cycle of procedures.

Results.– The ventilation disturbances in patients with combined pathology and chest deformation were more expressed than in patients without vertebral pathology. These differences were interpreted in dynamic indexes of respiration volumes. The worked out tactics of restorative methods improved clinical state of these patients.

Discussion.– Physical exercises stimulate the respiration and lungs gas exchange eliminate discoordination of respiratory act, prevent development of chest deformation.

Reference

http://dx.doi.org/10.1016/j.rehab.2014.03.445

P463-e
Interface pressure measurement for lumbar belt evaluation
R. Bonnairea,*, M. Verhaegheb, J. Molimard, P. Calmelsc, R. Convert
a École des Mines de Saint-Étienne, Saint-Étienne, France
b Université Technologique de Compiegne, Compiegne, France
CHU Bellevue, Saint-Étienne, France
*Thiasne
*Corresponding author.

Keywords: Pressure mapping system; Lumbar belt; Metrology; Low back pain

Objective.– Lumbar belt is a medical device used to prevent and treat low back pain, for which the main mechanical effect is the pressure applied on the trunk. Objective is to evaluate four “FSA” sensors designed to measure this pressure.

Methods.– Two types of tests have been considered: classical tests of metrology (linearity, hysteresis, repeatability, reproducibility and drift) and specific tests to the application (curvature, surface condition and mapping system superposition) [1].

Results.– Linear regression coefficient is between 0.86 and 0.98; hysteresis between 6.29% and 9.41%. Measurements are repeatable. Location, time and operator, measurement surface condition and mapping system superposition have influence on the results. Stable measure is obtained after 800 seconds. Measurement stays suitable on curved surface.

Discussion.– Tested sensor is acceptable. Nevertheless, take into account recommendations before using it: measurement must be performed in the same place, in a short time, with the same operator, between the same kind of surfaces; calibration must be adapted to avoid the sensor drift; overlap pressure mapping systems must be avoid.

Reference

http://dx.doi.org/10.1016/j.rehab.2014.03.446

P464-e
Management of quadruple amputee in a Tunisian rehabilitation service: Results and challenges
E. Toulgui,*, K. Maarefa, S. Mtawaa, M. Faiez, A. Zaoui, F. Khachnaoui
CHU Sahliou, Sousse, Tunisia
*Corresponding author.

Keywords: Quadruple amputee; Rehabilitation; Prosthesis

Background.– Four limbs major amputation “quadruple amputation” is rare. It often occurs after electrical burns. We report the case of a four limb amputated child followed up in a PMR department.

Case report.– K.S. was victim at the age of 13 of an electric shock. It caused damage as a third degree burn of the four limbs complicated by compartment...
syndrome. He has an amputation of the 2 arms and the 2 legs. The patient underwent a specific rehabilitation program, which spread out over seven months and led to the acquisition of two myoelectric prosthesis and two modular tibial prosthesis types PTK. At 10 months postoperative, our patient was able to have a good autonomy in daily life activities. Several difficulties were observed, as a compression of the femoral nerve in the left femoral triangle, wounds and bursitis in both lower limbs and problems of maceration in the two upper limbs.

Discussion.– This case study illustrates the factors involved in the rehabilitation of a quadripel amputee. The physical and prosthetic problems to be addressed are numerous and require a multidisciplinary approach. Nevertheless, with a positive attitude return to work and a fulfilling life are possible.

http://dx.doi.org/10.1016/j.rehab.2014.03.447

P465-e

Resting hand splint for carpal tunnel syndrome treatment

V. Pézarèsı*, J.P. Olivardı
CHU Timone, Marseille, France
*Corresponding author.

Keywords: Carpal tunnel syndrome; Resting hand splint

Background.– Carpal tunnel syndrome: medical treatment or surgery? If the choice is connected to early diagnosis, the recent analysis of HAS recommends resting hand splint in first treatment, for patients without serious clinical signs and moderate changes on EMG.

Methods.– Since 2010, in PMR department (CHU Timone), 50 patients of the same consultant physician benefited resting hand splint treatment. This experience brings naturally to wonder about the interest of this conservative treatment.

Results.– With a targeted questionnaire, different pieces of information were collected to test its efficiency: symptoms, correlations with laterality or patient business, contributing pathologies, criteria of prescription, instruction for use, failed improvement, other treatments in case of this therapeutic failure.

Discussion.– Through results obtained, the resting hand splint prescription during 2 months could be justified, in the novice forms, before envisaging more invasive treatments for the patients.

Carpal tunnel syndrome HAS – February 2013.

http://dx.doi.org/10.1016/j.rehab.2014.03.448

P466-e

An ICF based assessment for functional gait improvement with a Bent-knee prosthesis

L. Sohliya
Department of PMR, Christian Medical College, Vellore

Keyword: Bent-knee prosthesis

Background.– This case report helps to assess pre- and post-intervention functional status using an ICF based tool in an adult with knee flexion deformity. It also illustrates that using ICF, appropriate assessment of impact of rehabilitation intervention can be effectively addressed. A 37-year-old lady presented with complaints of inability to walk upright due to painful flexion deformity of right knee since childhood. At presentation, she was not ambulant. Her felt needs were bipedal ambulation and correction of the knee deformity. Using an indigenously developed ICF core set for rehabilitation, her felt needs were assessed before and after providing ambulation training with an extension prosthesis and walking aids.

Methods.– Pre-intervention, she was independent in most of her activities and indoor mobility. Her outdoor mobility was impaired. By the end of her training, she was able to walk with the prosthesis and a single forearm crutch. Assessments using ICF tool showed significant gains in her participation post-intervention.

Discussion.– ICF based tool measures and describes how people function with their health condition. It brings out the impact of rehabilitation intervention on a person’s participation, which is not possible with other commonly available open-source tools.

http://dx.doi.org/10.1016/j.rehab.2014.03.449

P467-e

Functional outcome in a transmetacarpal left hand amputation with intact thumb

T. Khalili,a, A. Raza,b, T. Khalilic
a Army Medical College-National University of Sciences and Technology, Rawalpindi, Pakistan
b Armed Forces Institute of Rehabilitation Medicine (AFIRM), Rawalpindi, Pakistan
c Jinnah Medical College, Warsak road, Peshawar, Pakistan
*Corresponding author.

Keywords: Left hand amputation; Transmetacarpal amputation

Background.– Upper limb amputations traumatic/non-traumatic are common, resulting in disability and emotional disturbances. Left hand amputations are less frequent. Good surgery has good rehab outcome. Prehensile function of thumb should be preserved/reconstructed. Transmetacarpal amputation is a better choice out of many. The functional grips/bimanual activities and cosmeses are the long-term goals in left hand amputation.

Methods.– A 32-years-old male, having transmetacarpal left hand amputation with intact thumb, was observed for first referral to tertiary rehabilitation center in Rawalpindi. He was independent in all activities of daily living with left hand. The prehensile function/functional grips of thumb were excellent while opposing on soft tissue grafted myocutaneous flap over distal metacarpals. The flaps and thumb served for key grip, pincer grip and other functional grips. He wanted prostheses for cosmesis only. A silicon finger filler with skin color sleeve and finger foam filler glove was provided. His roles as military infantry soldier remained the same.

Discussion.– Hand amputations of left side result in functional compromise. Replantation, polycization, finger/toe transfers has complications. Good reconstructive surgery holds a better functional outcome. Occupation prior to injury should remain the same because of intact thumb/reconstructed digit like musicians, soldiers.

http://dx.doi.org/10.1016/j.rehab.2014.03.450

P468-e

Using an ankle-foot orthosis improves aerobic capacity in subacute stroke patients

C.W. Hyun,a, B.R. Kim,a, E.Y. Han,b, S.M. Kim,a, S.H. Im,a, S.Y. Lee,a, J.H. Choi,c, Y.K. Leea
a Jeju National University Hospital, Jeju
b Kwandong University College of Medicine, Kwandong

Keywords: Stroke; Ankle-foot orthosis; Aerobic capacity

Background.– This study was undertaken to investigate aerobic capacity in subacute stroke patients with and without an ankle-foot orthosis (AFO).

Methods.– Fifteen subacute stroke patients (8 males and 7 females; average age, 62.1 years) were enrolled for this study. The inclusion criteria consisted of the ability to walk at least 3 m with or without an aid but without standby assistance. All subjects participated in two continuous, symptom-limited low-velocity graded treadmill exercise stress tests during 2 different situations (with AFO and without AFO). For assessment of cardiorespiratory responses, oxygen consumption (VO2), heart rate (HR), systolic & diastolic blood pressure (SBP & DBP), rate pressure product (RPP), and respiratory exchange ratio (RER) were measured with peak values. Rating of perceived exertion (RPE) was recorded immediately after each test. For assessment of gait function, 6-min walk test (6MWT) was measured.

Results.– When comparing cardiorespiratory responses and gait function during 2 different situations (with AFO and without AFO), VO2 peak (22.5 vs. 20.6, P = 0.17) and 6MWT (263.6 vs. 295.3, P = 0.12) were significantly greater in condition with AFO than condition without AFO. Other parameters were similar for both conditions.

Discussion.– These results indicate that using an AFO could improve aerobic performance in subacute stroke patients.

http://dx.doi.org/10.1016/j.rehab.2014.03.451