

Poster Abstracts

P1

Prevalence and correlates of fatigue in patients with Multiple Sclerosis

Taly A B, Karthik N, Gupta A¹, Christopher R², Prasad C³.

Departments of Neurology, ¹Psychiatric and neurological rehabilitation, ²Neurochemistry and ³Neuroimaging and interventional radiology, NIMHANS, Bangalore

Fatigue, a frequent disabling symptom that influences quality of life in many neurological disorders is overshadowed by physical impairments and has not received focused attention. The present hospital based prospective study explored the prevalence of fatigue and its correlates in Multiple sclerosis, a relatively rare disorder in India.

Thirty-one consenting, non- consecutive patients, assessed at NIMHANS between February 2010 and December 2011, with definite multiple sclerosis as per McDonald's criteria were evaluated with a questionnaire that included personal data, Kurtzke's expanded disability status scale (EDSS), Beck depression inventory (BDI), Krupp fatigue severity scale (FSS) and Pittsburgh sleep quality index (PSQI), modified Barthel index (MBI) and WHO Quality of Life – BREF questionnaire. Exclusion criteria for the study were: presence of infection, and relapse or pulse methyl prednisolone use in the preceding one month and medication use which may contribute to fatigue.

The demographic profile of the group was as follows: mean age - 30.0±9.0 years, men: woman: 7:24, number of relapses - 4.74±3.6, mean duration of illness - 4.9±4.4 years and mean EDSS score -3.45±2.24. The major impairments were Quadripareisis -7, (22.6%), paraparesis -15, (48.4%), sensory disturbances -18(58.1%), visual problems -22(71%), sphincter disturbances -18 (58.1%), diplopia -13(41.9%), dysarthria -10 (32.3%) and ataxia -8. (25.8%). Fatigue was rather common with the mean fatigue score in the cohort being 38.7±18.5. Eighteen patients (58.07%) with score above the cut off value of 36 in the fatigue severity scale were older (p-0.01), had poor quality of sleep (p-0.005), higher score on depression scale (p-0.005) and poor quality of life indices than their counterparts. However, they did not differ on Barthel score. All the four domains of QoL were significantly affected by fatigue.

Assessment of fatigue should be routinely carried out during evaluation for rehabilitation, in view of its therapeutic implications.

P2

Shefstim: an automated setup of functional electrical stimulation for drop foot

Nair K P S, Heller B W*, Clarke A J, Good T R, Healey T J, Pratt E J, Reeves M L, van der Meulen J M, Barker A T

*Centre for Sports Engineering Research, Sheffield Hallam University, Sheffield, UK

Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK

Shefstim: An Automated setup of functional electrical stimulation for drop foot using a novel 64 channel prototype stimulator and electrode array

Background: Functional electrical stimulation (FES) correct drop foot following upper motor neurone disorders. 44% of patients using FES have difficulty identifying correct stimulation. We have developed Shefstim, an 8 × 8 multi-array stimulator which automatically determine best site of stimulation.

Objective: To compare Shefstim with FES.

Subjects and methods: Twenty one participants (Stroke- 10, Multiple sclerosis-11) were recruited. They performed two walks of 10 m for each of the following conditions: own setup (PS), clinician setup (CS), automated setup with Shefstim (AS) and no stimulation (NS). The PS and CS used conventional FES; the AS condition used Shefstim. Outcome measures were walking speed, foot angle at initial contact and the Borg Rating of Perceived Exertion.

Results: Mean walking speeds were: NS - 0.61 m/s, PS- 0.72 m/s, CS - 0.68 m/s and AS 0.65- m/s. All setups significantly increased speed (AS p <0.05, PS p <0.01, CS p <0.01). Speed for AS was comparable to CS. PS was faster than both, AS (p <0.01) and CS (p <0.05). Dorsiflexion angles for AS (4.2°) were larger than NS (-3.0°) (p <0.01), not different to PS (4.3°, p >0.05) and less than CS (6.0°, p <0.05). Mean time to set up Shefstim (5.9 min) was shorter than FES (11.0 min).

Conclusions: This study has demonstrated that Shefstim produces results comparable to FES and warrant future studies outside the laboratory.

P3

Effect of pranayama and meditation as an add-on therapy in rehabilitation of patients with Guillain-Barré syndrome—A randomized control pilot study

Gupta A, Kumar Sendhil, Taly A B, Nagaratna

Neurological Rehabilitation Division, DPNR, National Institute of Mental Health & Neuro-Sciences (NIMHANS), Bangalore, India

Objective: To study the add-on effects of pranayama and meditation in rehabilitation of patients with Guillain-Barré syndrome (GBS).

Design: Randomized control pilot study.

Setting: Neurological rehabilitation unit of university tertiary research hospital.

Subject: Twenty two GBS patients, who consented for the study and satisfied selection criteria, were randomly assigned to yoga and control groups. Ten patients in each group completed the study.

Method: The yoga group received 15 sessions in total over a period of 3 weeks (1 hour per session), one session per day on five days per week that consisted of relaxation, Pranayama (breathing practices) and Guided meditation in addition to conventional rehabilitation therapeutics. All the patients were assessed using Pittsburgh Sleep Quality Index, Numeric pain rating scale, Hospital anxiety and Depression scale and Barthel index score. Mann-Whitney U test and Wilcoxon's signed rank test were used for statistical analysis

Results: Quality of sleep improved significantly with reduction of PSQI score in yoga group (p=0.048). There was reduction of pain scores, anxiety and depression in both the groups without statistical

significance between groups (pain $p=0.167$, Anxiety $p=0.133$ and Depression $p=0.070$). Overall functional status improved in both groups without significant difference ($p=0.402$).

Conclusions: Significant improvement was observed in quality of sleep with yogic relaxation, pranayama, and meditation in GBS patients.

Keywords: Guillain-Barré syndrome; rehabilitation; yoga

P4

Balance and gait assessment among lower-limb amputees and comparison of status with healthy controls; a hospital based cross sectional study

Khanna M¹, Singh U², Yadav S L³

¹Assistant Professor, DPNR, NIMHANS, Bangalore

²Professor, Dept of PM&R, AIIMS, New Delhi

³Additional Professor, Dept of PM&R, AIIMS, New Delhi

Background: Amputations, a form of treatment carried out to eliminate pathology, result in musculoskeletal disabilities that comprise around 8% of all loco-motor disabilities in India. Balance retraining comprises an important aspect of rehabilitation programme for such patients.

Objective: To assess balance, gait changes, and activities of daily living in patients with lower limb amputation in comparison with healthy subjects.

Method: Hospital based, cross-sectional study conducted among 30 lower limb amputees and equal number of age and sex matched controls. Balance was assessed using dynamic posturography, and gait evaluation was done clinically. Activities of daily living were assessed with questionnaire.

Results: Patients had difficulty in both dynamic balance and gait. Despite amputation, no significant difference was observed on testing proprioception. In the sensory organization tests with difficult tasks, patients needed more sensory input from vision. Significant difference was observed for limits of stability, rhythmic weight shifts and for gait variables other than walking base. None of the patients had major difficulties with sexual functions and activities of daily living.

Conclusion: Lower limb amputees needed more of visual feedback to maintain balance. The training for prosthesis use and implementation of various sensory conditions in the physical training of patients with lower limb amputation can contribute to balance recovery.

P5

Spontaneous rupture of flexor retinaculum of ankle – An unusual case

Agrawal Vipul, Sharma Sanjeev Kumar, Singh L Sushil, Yadav S L, Singh U
Department of PMR, AIIMS

Benign joint hypermobility syndrome (BJHS) is a multisystem, non progressive, noninflammatory inherited connective tissue disorder with hypermobility in which musculoskeletal problems like joint pains, recurrent sprains, fractures, dislocations, tendonitis, osteoarthritis can occur in the absence of systemic rheumatological disease. It is a commonly encountered disease entity in day to day physiatrist's practice and can be easily overlooked and not generally

being considered as one of the differential diagnosis. We present here an unusual case of a middle age lady suffering from benign joint hyper mobility syndrome presenting with non traumatic spontaneous rupture of flexor retinaculum of ankle highlighting the importance of considering joint hypermobility as an important predisposing factor in the retinaculum rupture and considering clinical testing of joint, use of MRI as an important aid in the diagnosis of such entity.

P6

Heterotopic Ossification of shoulder in stroke—An unusual presentation

Sharma Sanjeev Kumar, Rajkumar, Yadav S L, Singh U

Dept. of PMR, AIIMS

Heterotopic ossification (HO) is the formation of lamellar bone within the soft tissue surrounding a joint. It is usually seen after spinal cord injury (SCI), traumatic brain injury (TBI), burn, and direct trauma. HO in post-stroke hemiplegia is rare; only a few cases of HO in lower limb i.e. hip or knee has been reported in the literature. To our knowledge, HO of shoulder joint on hemiparetic limb has not been reported previously. We present here an unusual case of an old man who had right-sided post-stroke hemiplegia with HO shoulder on the affected side.

P7

Evaluation of the improvement in functional independence in post operative cerebral palsy children

Mathangi S

Background: Cerebral palsy leads to secondary musculoskeletal problems. Children with cerebral palsy received soft tissue surgical release with post-operative management of Physiotherapy and Occupational Therapy with Orthosis.

Methods: The study is a cohort study. FIM scale assesses physical and cognitive ability. Preoperative evaluation was done on 45 children in the PMR OPD for a period of two months. These children underwent soft tissue surgical release. Post operatively Physical and Occupational therapy were given to these patients each for an hour per day. Post 6 weeks, evaluation on the previously evaluated children was done using FIM score.

Results: Transfers showed 7.7% improvement that initially were able to do less than 25% of the task, after receiving surgery got improved in transfer by two levels. There is one level improvement in children who received surgery. Children who received physiotherapy with surgery showed improvement by five levels. 31.6% of them became modified independent where a device like walking stick is used for completing the task but they required no physical help. 19.2 % of children after surgery were able to do more than 75% of task that included mobility.

Conclusion: The study showed in addition to Surgery if Physical and Occupational therapy is also provided, then there is better improvement in Mobility and Self-care. It is necessary to know that the brain damage due to cerebral palsy cannot be reversed and that the treatment of cerebral palsy mainly focuses on maximizing individual potential and enhancing their independence.