CO28-001-e

Multiple sclerosis treatment options: Update 2014
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Multiple sclerosis (MS) is a chronic immune mediated disease affecting the central nervous system, and characterized by demyelination and axonal damage. The estimated prevalence of MS is approximately 2.5 million cases worldwide and the disease is the first most common cause of neurological disability in young adults. If untreated, MS typically leads to substantial accumulation of both physical and cognitive disability over time. For that reason, early use of disease-modifying therapies is required. These treatments should reduce relapse rate, limit the onset of new demyelinating lesions and postpone the development of long-term disability. Currently first-line-approved immunomodulator therapies for MS reduce disease activity and the accumulation of disability in relapsing remitting MS. Although these first-line treatments have shown excellent safety profiles, their effects are modest and all have to be given by injection. Immunosuppressive drugs are also approved for treatment of MS as second-line therapy, demonstrating greater efficacy but also many severe safety adverse events. Thus, there remains an unmet need for the development of more effective and well-tolerated oral therapies for the treatment of MS. Based on results of large randomized controlled trials, a number of oral medications have already been or will be approved.

http://dx.doi.org/10.1016/j.rehab.2014.03.1102

CO28-002-e

Physical rehabilitation is associated with structural and functional brain plasticity in patients with multiple sclerosis
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Keywords: Multiple sclerosis; Functional MRI; Brain plasticity

Objective: This study aimed to test the hypothesis that clinical improvement following physical rehabilitation is associated with regional brain plasticity in disabled patients suffering from multiple sclerosis (MS).

Methods: Fourteen MS patients with a lower limb motor deficit underwent a one-month standardized physical rehabilitation protocol. Clinical examination, resting-state functional MRI (rs-fMRI) and structural MRI were performed at inclusion, just after rehabilitation, and three months after the end of rehabilitation. Topology of brain networks was analysed based on graph-theory method applied to rs-fMRI data. Morphological variations in grey matter (GM) were determined using longitudinal Voxel-Based Morphometry method applied to 3D T1-weighted images.

Results: The prevalence of SUI in MS women is 45.5%, independent of the degree of disability. SUI is correlated with the age and the MUCP. Our results do not support the SUI prevalence data described [2].

References

http://dx.doi.org/10.1016/j.rehab.2014.03.1103

CO28-003-e

Physical training and muscle strengthening in multiple sclerosis
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Keywords: Multiple sclerosis; Physical training; Muscle strengthening

During a long time physical activity was not recommended for patients with multiple sclerosis for fear of worsening neurological symptoms. The practice of physical activity depends on the possibilities of adaptation to stress, and disability. For high EDSS scores cardiovascular abnormalities adaptation and impaired respiratory function may be observed with perturbations of exercise testing as consequences. Muscle deficits, coordination disorders can also be an obstacle to physical activity increasing the deconditioning consecutive to the restriction of physical activity.

Various studies have shown the benefit of physical training with an improvement in VO2 max, gait parameters and fatigue. A real impact on quality of life is also observed. Regular physical activity is necessary for maintaining the benefit of rehabilitation training programs.

The combination of muscle strengthening potentiates the benefit obtained. Sports should be recommended depending on the clinical feature and adapted to the fatigue in his practice and this all along the disease course.

http://dx.doi.org/10.1016/j.rehab.2014.03.1104

CO28-004-e

Balance in multiple sclerosis. Evaluation and rehabilitation
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Multiple sclerosis is an inflammatory disease of central nervous system with both scattered and evolutive lesions. It is characterized by the appearance at a time variable in the development of disorders of balance and gait moving towards progressive disability.

In MS, balance impairment is responsible for falls that occur at different stages of the disease. Imbalance and falls are related not only to impairment of motor control but also of the proprioception, the cerebellar function and vision. Spasticity and cognitive troubles have also been related to increased risk of falls.