

Department of Rehabilitation Medicine

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General Summary

The main research topics of our department are as follows: 1) effect of repetitive transcranial magnetic stimulation (rTMS), 2) treatment for stroke, 3) analysis based on database, 4) others.

Research Activities

Effect of rTMS

1. Improvement of higher brain dysfunction after brain injury by repetitive transcranial magnetic stimulation and intensive rehabilitation therapy: case report

We have shown the safety and efficacy of rTMS therapy using a navigation system combined with intensive CR on two patients with cognitive dysfunction following brain injury. In addition, we observed changes in the areas around the rTMS target sites in brain imaging data.

2. The Efficacy of High-Frequency Repetitive Transcranial Magnetic Stimulation for Improving Apathy in Chronic Stroke Patients

The application of high frequency rTMS over the dorsal anterior cingulate cortex (dACC) and medial prefrontal cortex (mPFC) may be a useful intervention for apathy due to stroke.

Treatment for stroke

1. Diffusion Tensor Imaging Evaluation of Neural Network Development in Patients Undergoing Therapeutic Repetitive Transcranial Magnetic Stimulation following Stroke

Our findings indicate that the generalized fractional anisotropy (GFA) may have a potentially more useful ability than fractional anisotropy (FA) to detect changes in white matter structures in areas of fiber intersection for any such future investigations.

2. Effects of botulinum toxin A therapy and multidisciplinary rehabilitation on lower limb spasticity classified by spastic muscle echo intensity in post-stroke patients

In conclusion, although patients with lower muscle echo intensity demonstrated improvements in motor function, the improvement was poor in those with higher muscle echo intensity.

3. Utility of the Revised Version of the Ability for Basic Movement Scale in Predicting Ambulation during Rehabilitation in Poststroke Patients

Our results suggest that the ABMS II score is a potentially useful tool to predict ambula-

tion during rehabilitation in poststroke patients.

4. Higher brain dysfunction

Cognitive and behavioral Sequelae in traffic victims. Greater gains, both physical and cognitive function, are made through long-term support from comprehensive medical and social rehabilitation professionals.

5. Responsiveness of the functioning and disability parts of the International Classification of Functioning, Disability, and Health core sets in postacute stroke patients

Our results indicate that functioning and disability parts of these two ICF core sets can detect changes in functioning and disability in patients who receive an inpatient rehabilitation program for postacute stroke.

Analysis based on database

1. Impact of orthotic therapy for improving motor ability in activities of daily living in individuals with spinal cord injury: a retrospective cohort study

Leg orthoses may improve activities of daily living in individuals with spinal cord injury after the acute phase.

2. Association Between 7 Days Per Week Rehabilitation and Functional Recovery of Patients With Acute Stroke: A Retrospective Cohort Study Based on the Japan Rehabilitation Database

Our cohort analysis demonstrated that 7d/wk of rehabilitation in early rehabilitation for patients with acute stroke can lead to functional recovery.

Others

1. Relationship Between Frequency of Spontaneous Swallowing and Salivary Substance P Level in Patients with Acute Stroke

In conclusion, the frequency of spontaneous swallowing was decreased in acute stroke patients with low salivary substance P (SP) levels. Salivary SP levels can be potentially a useful biomarker of risk of stroke-associated pneumonia in the acute stage.

2. Nutritional supplementation for activities of daily living and functional ability of older people in residential facilities: A systematic review

Nutritional intervention with older people in residential facilities was effective in improving handgrip strength, but did not significantly improve scores for activities of daily living, balance, gait velocity or preventing death.

Publications

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