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NEURO®

NovEl Intervention Using Repetitive TMS

and Intensive Occupational Therapy

Introduction of the inpatient treatment program for combined treatment with repetitive Transcranial Magnetic Stimulation (rTMS) and intensive rehabilitation.

<What is rTMS?>

rTMS therapy is a treatment method in which the brain is locally stimulated from the exterior of the head using magnetic stimulation and eddy currents are induced using a coil. The patient is only required to be in a resting position, and this treatment is accompanied by almost no pain or distress. rTMS therapy is conducted to correct imbalances in brain function resulting from injury to the brain, and is a therapy with which “injured brain functions are activated by stimulating healthy brain tissue and injured brain areas using the magnetic stimulation of different brain areas depending on the patient”. This is a new treatment concept that is attracting a great deal of global attention as “a treatment method that is based on the concept of ‘neuro-rehabilitation’, and tries to elicit the brain’s maximal recovery potential”.

<What is NEURO®?>

Currently, at Jikei University Hospital, for patients with after-effects of cerebral stroke, such as paralysis in the upper limbs and aphasia, intensive rehabilitation is conducted on a one-on-one basis in combination with rTMS. NEURO® is the first systematic treatment method in the world for use in clinical practice that combines rTMS and intensive rehabilitation. These different therapies are combined to activate injured brain functions and improve functional impairment. We started to use this method from fiscal year 2009. Patients who undergo NEURO® are hospitalized for about two weeks. As recorded in the English research paper that we published in 2017, the results obtained after conducting this therapy with 1,725 patients with paralysis in the upper limbs as an after-effect of cerebral stroke showed that this treatment method yielded significant differences in therapeutic outcomes, which demonstrated its efficacy. (Improvement in the function of the upper limbs was observed. Patients were able to move their hands and fingers more easily, and their joints were less stiff.) Moreover, no problematic side effects were observed. The efficacy of NEURO® was highly evaluated at academic meetings in- and outside of Japan, as the world's first attempt to treat paralysis in the upper limbs in this way. Although criteria has already been established regarding the patients for whom this treatment method is indicated, it has also been reported to be effective in patients with after-effects of cerebral stroke, such as aphasia, paralysis in the lower limbs, dysphagia, and executive dysfunction.

However, it is difficult to conduct high-quality rehabilitation in languages other than Japanese for non-Japanese patients with executive dysfunction, such as aphasia. Therefore, for non-Japanese patients, we only conduct this treatment method in patients who fulfill the criteria for paralysis in the upper limbs resulting from after-effects of cerebral stroke.