Unilateral neglect is a common manifestation in acute stroke; reported incidence ranges from 30% to 81% [1–3]. Effective management of unilateral neglect may ameliorate functional recovery and promote independence. Cha and Kim [4] argued that current treatment of unilateral neglect is mostly labour-intensive and may therefore not be applicable for all patients post stroke. They envision that the use of repetitive transcranial magnetic stimulation (rTMS) could potentially fill the gap by providing intensive treatment for patients. Their randomized controlled trial reported that rTMS of low frequency (1 Hz) applied in the lesioned posterior parietal area for 5 minutes with 90% of motor threshold, five times per week for 4 weeks, may be beneficial in reducing unilateral neglect in patients with acute stroke.

Their study findings contribute several new insights to the current body of physiotherapy knowledge. First and most importantly, the study suggests a new treatment option that possesses sound underlying physiological elucidation. The mechanisms of current and common treatment approaches for unilateral neglect, including but not limited to visual or tactile stimulation, electrical stimulation, mirror therapy or prism adaptation, are not fully explained. Repetitive TMS, however, was developed based on the interhemispheric rivalry model by Kinsbourne [5] and has been proven to restore interhemispheric imbalance in both animal and human studies [6]. When applied appropriately, rTMS would be beneficial to modulate cortical activity and translate the gains at physiological level to functional level. Second, the study suggests that rTMS is safe and feasible for patients with acute stroke. Physiotherapists tend to be more conservative with treatment approach in the acute stage, especially when the treatment involves stimulating the cortical area. The authors provide a protocol that appears to be safe and effective for this critical phase of recovery when most neuroplasticity occurs. Third, with appropriate training, physiotherapists can adopt and lead this treatment approach in clinical settings, not only to improve physical deficits but visuospatial neglect, which is a barrier to returning to functional independence in the community where there is high demand of executive and physical functions.

Nevertheless, there are a few clinical concerns that warrant further considerations. Although effective and intensive, rTMS requires a costly device and specialized training for operation. The set-up and locating of the optimal motor threshold area may be time-consuming, which could potentially limit clinical application in busy clinical environments like Hong Kong. In addition, the optimal dosage of rTMS to treat unilateral neglect has yet to be determined. In another randomized controlled trial by Kim et al [7], they found that high-frequency rTMS (10 Hz) applied over the lesioned posterior parietal area is effective. Cha and Kim [4] did not elaborate on why they chose a low frequency (1 Hz) compared to the more commonly used high-frequency rTMS over the lesioned hemisphere. It is imperative for clinicians to understand the optimal parameters of stimulation for different clinical presentations before there can be wider adoption of rTMS.

References


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