Invited Comments

The pyramidal tract is frequently affected in multiple sclerosis (MS) and impaired motor performance is a major cause of disability in MS. Pyramidal tract function can be assessed using transcranial magnetic stimulation (TMS), yielding motor-evoked potentials in cranial nerve innervated, arm and leg muscles. Among the evoked potentials, TMS has been shown to be the single most sensitive parameter in patients with MS for diagnostic purposes. The most sensitive parameter in single pulse stimulation is the delayed central motor conduction time (CMCT). The chance of obtaining pathological results increases continually from the cranial nerves to the upper and lower limbs, parallel to the increasing length of the examined corticobulbar and corticospinal tracts. The sensitivity further increases when the interhemispheric inhibition between the motor cortices (transcallosal inhibition) is taken into account or when a triple stimulation paradigm is applied.

The authors of the present study summarize their experience of investigating 30 patients with clinically definite MS and 30 healthy controls using TMS. They found abnormalities in at least one of several TMS parameters in 86.7% of the patients, confirming the results of previous studies. They also demonstrated a significant correlation between CMCT and the degree of pyramidal signs. On follow up, mean CMCT improved significantly in MS patients who improved clinically. Thus, the authors conclude correctly that TMS is a highly sensitive technique to evaluate corticospinal conduction abnormalities in MS that may have no clinical correlate and may monitor pyramidal function during the course of the disease. In future studies, it would be of interest to monitor short-term and long-term treatment effects (steroids and immunomodulating drugs) by TMS.

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