Motor cortical excitability in obsessive-compulsive disorder: Transcranial magnetic stimulation study.


Abstract:

Abstract OBJECTIVES: Transcranial magnetic stimulation is a non-invasive method of stimulating the brain that is increasingly being used in neuropsychiatric research. Previous work has suggested that the pathophysiology of obsessive-compulsive disorder (OCD) may involve dysfunction of excitatory and/or inhibitory brain function. This study aimed to extend those findings. METHODS: The study included 45 OCD patients and 15 age- and sex-matched healthy volunteers. Clinical evaluation was conducted using the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Hamilton Anxiety Rating Scale (HAM-A), and Clinical Global Impression rating scale (CGI). Physiological measures were resting and active motor thresholds (RMT and AMT), motor evoked potential (MEP) amplitude, cortical silent period (CSP) and transcallosal inhibition (TCI) durations, short-interval intracortical inhibition (SICI), and intracortical facilitation. RESULTS: RMT and AMT were significantly lower in patients than in the control group. The mean duration of the CSP and TCI were also significantly shorter. Obsessive trait was associated with significant reduction of TCI duration compared to compulsive trait. There was significant reduction in SICI in OCD patients compared to controls. There were no significant correlations between the Y-BOCS, HAM-A and CGI scores and the cortical excitability parameters. CONCLUSION: These results provide further evidence for inhibitory deficits or increased facilitation in cortical circuits of patients with OCD.

Keywords:

Cortical excitability; Cortical silent period; Excitabilité corticale; Facilitation intracorticale; Inhibition intracorticale; Inhibition transcalleuse; Intracortical facilitation; Intracortical inhibition; Période de silence corticale; Transcallosal inhibition

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