
Khedr EM, Ahmed MA, Darwish ES, Ali AM.

Abstract:

Abstract INTRODUCTION: In Alzheimer's disease (AD), transcranial magnetic stimulation (TMS) studies have been limited to test motor cortical excitability. The aim of this study was to investigate the inhibitory circuits of the motor cortex and to relate these to measures of cognitive function in AD patients. Results were compared with those of a control group of healthy subjects matched for age, sex and education. PATIENTS AND METHODS: Forty-five AD patients and 37 healthy volunteers were included in the study. Each participant received a neurological evaluation, Mini-Mental State Examination (MMSE), and Clinical Dementia Rating (CDR). Neurophysiological evaluations included resting and active motor threshold (rMT and aMT), motor evoked potential (MEP), cortical silent period (CSP), and transcallosal inhibition (TI). RESULTS: AD patients showed significantly reduced rMT, aMT and shorter MEP onset latency; in addition there was a prolongation of both CSP and TI. There was a significant positive correlation between the MMSE and CDR, on the one hand, and aMT and rMT, on the other hand, whereas the correlation was negative with CSP and TI durations. CONCLUSION: AD is associated with hyperexcitability of the motor cortex, which supports the hypothesis that changes in GABAb and glutamate function are important factors in cognitive impairment.

Keywords:

Cortical excitability, Alzheimer

Published In: