CORTICAL INHIBITION IN SCHIZOPHRENIA: A RETROSPECTIVE POOLED CROSS-SECTIONAL ANALYSIS

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Introduction: Transcranial magnetic stimulation (TMS) has been established as a method to probe inhibitory and facilitatory networks in the motor cortex. Reduced motor-cortical inhibition is a common, finding in patients with schizophrenia. Based on neuropathological findings, the reduced cortical inhibition in schizophrenia has been linked to alterations in GABAergic networks.

Objectives: The aim of the present study was to investigate the impact of disease state and antipsychotic medications on cortical inhibition.

Materials & Methods: Cortical inhibition was investigated in a pooled cross-sectional sample of first-episode (FE-SZ) and chronically ill (CH-SZ) schizophrenia patients and healthy controls (HC) using TMS to the left primary motor cortex. Analyses were focused on resting-motor threshold (RMT), short-interval intracortical inhibition (SICI at 3 ms), intracortical facilitation (ICF at 12 and 15 ms) and cortical silent period (CSP at 120% RMT).

Results: There was a significant difference concerning the mean CSP durations between HC and FE-SZ (MW-U: p=0.001). An overall comparison between HC and all patients further showed significant differences in SICI, presenting in a shorter mean SICI of HC than of SZ patients (MW-U: p=0.031).

Conclusion: This is the largest homogenous sample presenting various parameters of cortical excitability in schizophrenia patients. Thus, the findings allow to reduce the variance of different smaller samples and confirm the complex pattern of impaired cortical inhibition and excitability in patients with schizophrenia. The findings further indicate an impact of an early disease state on GABAB network performance.