SHORT-INTERVAL INTRACORTICAL INHIBITION IS DECREASED IN PATIENTS WITH RESTLESS LEGS SYNDROME

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Introduction

GABAergic dysfunction in the motor cortex may be involved in the pathogenesis of Restless Legs syndrome. Decrease in short-interval intracortical inhibition (SICI) to transcranial magnetic stimulation (TMS) is considered a marker of GABAergic dysfunction, and has been described in patients with RLS. It is unknown if there is a correlation between abnormal SICI and severity of symptoms.

Objectives:

To compare SICI in patients with primary RLS and healthy subjects, and to evaluate a correlation between SICI and severity of RLS symptoms.

Methods:

Patients (n=33) and controls (n=24) underwent clinical evaluation and TMS testing. EMG was recorded from the dominant *abductor digitus minimi* (ADM). Severity of symptoms was assessed by the International RLS Severity Scale (IRLSS). RLS patients were grouped by IRLSS scores (mild/moderate [IRLSS20] or severe/very severe [IRLSS≥20). SICI was compared in subjects with RLS and controls with Mann-Whiteny tests. The correlation between IRLSS and SICI in patients was investigated with Spearman´s rho.

Results:

There were no significant differences in age, gender, handedness, resting or active motor thresholds between patients with RLS and control subjects. Mean SICI (average ± standard deviation) was significantly deeper in controls (19.3±57.8%) than in patients (50.1±14.6%; p-value 0.001). The correlation between depth of SICI and IRLSS was not statistically significant.

Discussion

Our work included the largest sample of patients with RLS reported until now. The results support the presence of a dysfunction in GABAa interneurons in the motor cortex in RLS.