COMPARING CORTICAL EXCITABILTY IN FOCAL DYSTONIAS USING TMS

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Abstract (Limited to 300 Words):

PURPOSE: The purpose of this study is to investigate the differences in cortical silent periods (CSP) measured with transcranial magnetic stimulation (TMS) between subjects with focal hand dystonia (FHD), laryngeal dystonia (LD), and healthy controls to determine if these disorders share a common central nervous system (CNS) pathology. CSP is a measure of cortical excitability.

SUBJECTS: Data analysis was completed on 11 subjects with FHD (53.4±20.0y) from a prior study, 11 subjects with LD (56.8±7.2y), and 19 healthy controls (41.6±12.9y) from the current study.

METHODS AND MATERIALS: All subjects received single pulse TMS to determine the resting motor threshold (RMT) of their first dorsal interosseus (FDI) muscle. Cortical excitability was measured by the length of the CSP following single pulse TMS delivered at 120% RMT during a submaximal isometric contraction of the FDI muscle.

ANALYSIS: There was a significant age by group interaction determined by 2-way ANOVA. Thus, group differences were assessed with a one-way ANCOVA, with age as the covariate. Post-hoc analysis was performed using 95% confidence intervals (CI).

RESULTS: The one-way ANCOVA showed a significant main effect of group. Post hoc analysis revealed significant difference in CSP duration between the healthy group and LD and FHD (p