

DOES ONABOTULINUMTOXINA HAVE ANY CENTRAL EFFECTS IN CHRONIC MIGRAINE?

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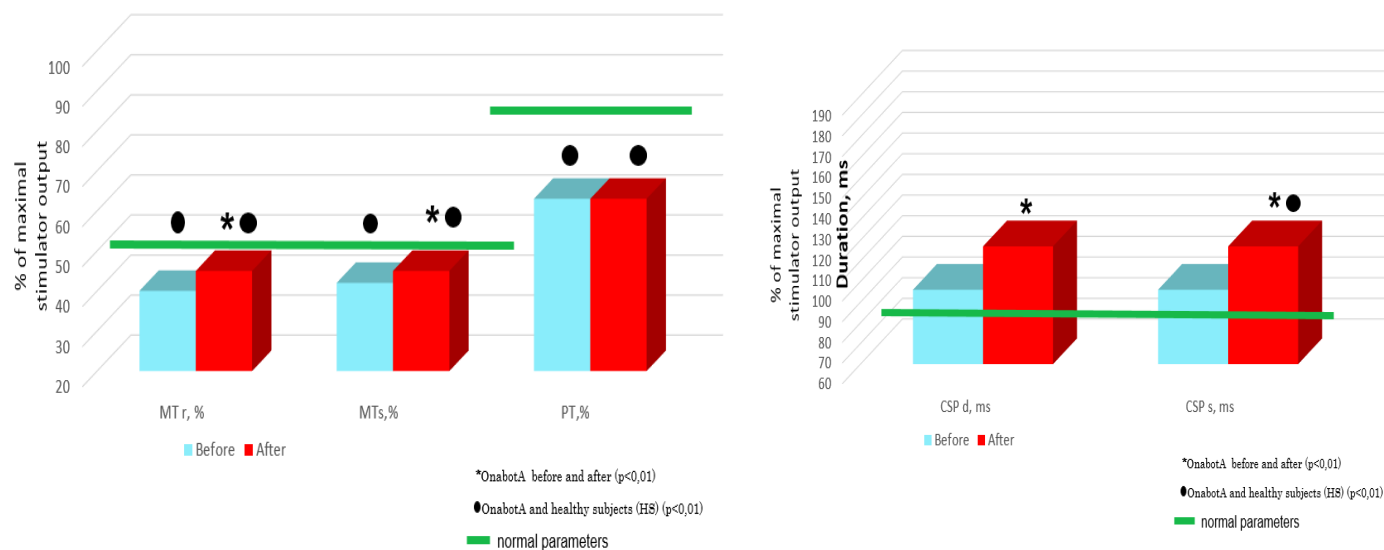
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Introduction: Repeated onabotulinumtoxinA (OnabotA) peripheral injections modify the course of chronic migraine (CM), which has been demonstrated in recent studies. The direct effect of OnabotA on peripheral sensitization and its indirect effect on central sensitization has been identified; however, its central mechanism of action (MOA) is still poorly understood. The **aim** of our study was to identify possible central OnabotA effects on the model of CM as a primary cerebral disorder by measuring changes in cortical excitability parameters using transcranial magnetic stimulation (TMS).

Methods: Forty-three subjects with CM (mean age 44 years; female 98%; diagnosis established according to ICHD-III beta, 2013) and 33 healthy subjects were included in the study. We assessed motor cortex thresholds (MT r/l, % of maximal stimulator output), cortical silent period (CSP r/l, milliseconds [ms]) duration by motor cortex stimulation with recorded responses from abductor digiti minimi muscles r/l and phosphene threshold (PT, % of maximal stimulator output) by visual cortex stimulation. TMS was performed twice for subjects with CM (before and 3 months after OnabotA [Botox[®]] injections, according to the PREEMPT paradigm) and once for healthy subjects.

Results: Subjects with CM had initially lower MT r/l and PT compared with healthy subjects. After 3 months, MT r/l and CSP r/l duration increased in subjects with CM compared to baseline, and the duration of CSP (left) increased in comparison with healthy subjects.

TMS PARAMETERS IN CM AND HEALTHY SUBJECTS BEFORE/AFTER ONABOTA



Conclusion: Study results confirmed initial cortical hyperexcitability in CM (lower MT and PT). While OnabotA changes cortical excitability in subjects with CM (increasing MT and the duration of CSP for both brain hemispheres), these parameters do not achieve those seen in healthy subjects. The results of our study confirmed the central effects of OnabotA; however, further studies are needed to clarify their specific MOA.