

A SINGLE-DOSE ONABOTULINUMTOXIN A REDUCES SERUM CGRP LEVELS AND IMPROVES MOOD AND COGNITIVE FUNCTION IN CHRONIC MIGRAINE PATIENTS

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Background and Objectives: To assess the effectiveness of a single-dose Onabotulinumtoxin A (OnabotA) on clinical, cognitive and psychiatric symptoms and its effects on serum α -calcitonin gene related peptide (CGRP) levels in chronic migraine (CM).

Methods: In this longitudinal study, 23 CM patients were evaluated during the interictal state. Patients were naïve to OnabotA or had not received toxin in ≥ 6 months. All participants underwent a clinical and neuropsychiatric examination, a comprehensive neuropsychological test-battery and serum CGRP testing. All measurements were collected before treatment and during the mean reported time to peak effect (4-6 weeks) after OnabotA administration. Related group t-test and correlation analysis were performed in order to determine differences in cognitive performance and CGRP blood levels pre and post-treatment.

Results: Single administration of OnabotA significantly improve headache impact (HIT-6) and depressive (BDI-II) symptoms in CM patients. Considering cognitive functioning, after treatment CM patients significantly exhibited over 30% of improvement in those tests that assessed executive functions and visuospatial memory, and over 20-15% of improvement for semantic verbal fluency and information processing speed. Remarkably, compared to the baseline, OnabotA administration significantly reduced over half (52.8%) serum CGRP levels, which was moreover significantly negatively correlated to improvement of information processing speed scores.

Conclusions: These findings suggest that, during the interictal phase and peak effect 4 to 6 weeks following the injection, OnabotA may have cognitive-and mood-enhancing effects in CM patients, which could be mediated by a major reduction of serum CGRP levels.

