

OnabotulinumtoxinA Injection for Glabellar Frown Lines as an Adjunctive Treatment for Depression

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Abstract : Negative emotions that are common in depression are coupled with the activation of the corrugator supercilli and procerus muscles in the glabellar region of the face. This research investigated the impact of OnabotulinumtoxinA (BOTOX) in the improvement of emotional states in depressed subjects by relaxing the mentioned muscles. The aim of the study was to investigate the effectiveness of BOTOX treatment for glabellar frown lines as an adjunctive therapy for Major Depressive Disorder (MDD) and to improve the quality of life and self-esteem of the subjects. It is hypothesized that BOTOX treatment for glabellar frown lines reduces depressive symptoms significantly and therefore augment conventional antidepressant medication. Forty-five (45) subjects diagnosed with MDD were assigned to a treatment (n = 15), placebo (n = 15), and control (n = 15) group. The treatment group received BOTOX injection, while the placebo group received saline injection into the Procerus and Corrugator supercilli muscles with follow-up visits every 3 weeks (weeks 3, 6 and 12 respectively). The control group received neither BOTOX nor saline injections and were only interviewed again on the 12th week. To evaluate the effect of BOTOX treatment in the glabellar region on depressive symptoms, the Montgomery-Asberg Depression Rating (MADRS) scale and the Beck Depression Inventory (BDI) were used. The Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF) and Rosenberg Self-Esteem Scale (RSES) were used in the assessment of self-esteem and quality of life. Participants were followed up for a 12 week period. The expected primary outcome measure is the response to treatment, and it is defined as a $\geq 50\%$ reduction in MADRS score from baseline. Other outcome measures include a clinically significant decrease in BDI scores and the increase in quality of life and self-esteem respectively. Initial results show a clear trend towards such differences. Results showed trends towards expected differences. Patients in the Botox group had a mean MADRS score of 14.0 at 3 weeks compared to 20.3 of the placebo group. This trend was still visible at 6 weeks with the Botox and placebo group scoring an average of 10 vs. 18 respectively. The mean difference in MADRS scores from baseline to 3 weeks were 9.3 and 2.0 for the Botox and placebo group respectively. Similarly, the BDI scores were lower in the Botox group (17.25) compared to the placebo group (19.43). The two self-esteem questionnaires showed expected results at this stage with the RSES 19.1 in the Botox group compared to 18.6 in the placebo group. Similarly, the Botox patients had a higher score for the Q-LES-Q-SF of 49.2 compared to 46.1 for the placebo group. Conclusions: Initial results clearly demonstrated that the use of Botox had positive effects on both scores of depressions and that of self-esteem when compared to a placebo group.

Keywords : adjunctive therapy, depression, glabellar area, OnabotulinumtoxinA

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