

## Correlation Between Use of Agomelatine and Bdnf Levels in the Treatment of Depressive Disorders

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**Introduction:** Agomelatine is a novel antidepressant whose role in the treatment of depression is growing. Brain-derived neurotrophic factor (BDNF) is a neurotrophin, acting on synaptic plasticity and maintaining midbrain dopaminergic and cholinergic neurons. Patients with depressive disorders exhibit diminished plasma BDNF levels, usually increased by antidepressant treatment.

**Objectives:** Aim of the study was to investigate the effects produced by chronic agomelatine treatment on BDNF serum levels in depressed patients.

**Methods:** 27 depressed patients and 29 healthy controls (HC) were enrolled in the study. Clinical assessment was performed at T0, T1 (after 2 weeks) and T2 (after 8 weeks). After screening period, patients were administered agomelatine (25 mg/day, per os); in the case of no clinical response, the dosage could be increased to 50 mg/day. At T0 and T2, venous blood samples were collected.

**Results:** Mann-Whitney U-test was performed to compare baseline BDNF levels between patients and HC. Baseline BDNF levels were found to be significantly lower in depressed individuals. During the study period, Friedman's test showed significant changes in BDNF serum levels. Their increase was correlated with depressive symptoms, as measured by reduction in HDRS scores. Also, responders showed a significant difference in BDNF levels after 2-week agomelatine treatment, while non-responders showed no difference.

**Conclusions:** our study demonstrates that patients affected by Depressive Disorders show an increase in BDNF serum concentration after a two-weeks therapy with agomelatine, with the clinical improvement of depression, anhedonia and anxiety significantly correlated with the levels of the neurotrophin.