Female pattern hair loss and negative psychological impact: possible role of brain-derived neurotrophic factor (BDNF)

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ABSTRACT

Background: Female Pattern Hair Loss (FPHL) is considered the most common type of hair loss in females. Women with FPHL may suffer from psychological distress and defective social functioning. Patients with psychiatric and neurodegenerative disorders almost have a deficient brain and blood brain-derived neurotrophic factor levels (BDNF). This serum BDNF level may act as a diagnostic marker for negative psychological impact in FPHL patients.

The aim of this study: was to evaluate the levels of serum BDNF in patients with FPHL and correlate its level to the severity of alopecia and the degree of psychological impact.

Patients and Methods: 46 female patients with FPHL and 41 healthy age-matched female volunteers as a control were included in the study. Patients filled out a Dermatology Life Quality Index (DLQI) questionnaire. Both patients and controls filled Beck Depression Inventory, Beck Anxiety Inventory, and Perceived Stress Scale (PSS) questionnaires. Serum levels of BDNF were measured for all the participants using the ELISA technique.

Results: Patients with FPHL had significantly lower levels of BDNF and significantly higher Beck depression inventory score and Perceived Stress (PSS) questionnaire scores. There is a significant negative correlation between serum levels of BDNF and Beck Depression Inventory, Beck Anxiety Inventory, and PSS questionnaire scores.

Conclusion: Patients with FPHL are at a high risk to develop chronic stress and depression. The serum level of BDNF is a good predictor for the assessment of chronic stress and depression in FPHL patients.