Serum Levels of Brain-Derived Neurotrophic Factor in Patients with Acne Vulgaris

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Abstract

Background

Many dermatological diseases have a great impact on the psychological state of patients, like urticaria, psoriasis, atopic dermatitis, and acne vulgaris. Finding a “gold standard” biomarker for chronic stress in acne patients is challenging because of the complex etiology of the chronic stress and its variable manifestations.

Aims

The aim of this study was to evaluate the correlation between serum levels of BDNF and the presence and severity of acne vulgaris and to assess the relationship of this biomarker to both the degree of psychological stress and the quality of patients’ lives (QoL).

Patients and Methods

Sixty patients with acne vulgaris were included, together with twenty apparently healthy, age and sex matched individuals as a control group. Patients filled a Dermatology Life Quality Index (DLQI) questionnaire; both patients and controls filled a Hospital Anxiety and Depression scale (HADS) and perceived stress scale-10 (PSS) questionnaires. Serum levels of BDNF were measured for patients and controls using ELISA technique.

Results

Patients with acne had significantly lower levels of BDNF and significantly higher HADS and PSS-10 questionnaires scores. A significant negative correlation was found between serum levels of BDNF and PSS questionnaire scores.

Conclusion

Patients with acne are at a high risk to develop chronic stress, anxiety, and depression. BDNF is a good predictor for assessment of chronic stress in such patients.
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Patients with acne had significantly lower levels of BDNF and significantly higher HADS and PSS-10 questionnaires scores. A significant negative correlation was found between serum levels of BDNF and psychological stress and the quality of patients’ lives (QoL). Patients with acne are at a high risk to develop chronic stress, anxiety, and depression. BDNF is a good predictor for assessment of chronic stress in such patients.