

Serum prolactin concentration in patients suffering from severe atopic eczema/dermatitis syndrome

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Abstract

Prolactin itself exerts multiple immunomodulatory effects and prolactin circulating level changes in the course of some immune-inflammatory diseases. Since little has been known about the relationship between the neuroimmunoendocrine system and atopic allergy, the present study focused on the behaviour of basal prolactin concentration in the peripheral blood of patients with atopic eczema/dermatitis syndrome (AEDS). Serum concentration of prolactin was measured by the electrochemiluminescence immunoassay (ECLIA) method in 13 female patients with severe intensity of AEDS and compared next with 14 healthy subjects. Blood was taken at 8 a.m. for measurement of basal prolactin concentration. Prolactin concentration values did not differ significantly among the two groups. It seems that increased secretion of prolactin does not accompany the immune-inflammatory processes associated with AEDS.

Key words: atopic eczema/dermatitis syndrome, prolactin.

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Introduction

Atopic eczema/dermatitis syndrome (AEDS) is a chronic inflammatory skin disease, pathogenesis of which is characterised by the immunoregulatory and neuroendocrine abnormalities as well as the phenomenon of autoimmunity [for review 1, 2]. Prolactin is a common mediator of the neuro-endocrine-immune system [3]. Structurally similar to the members of cytokine/hemopoietic family, it plays an important role in regulation of immune response in physiological and pathological states, including the autoimmune diseases [3, 4]. It has been hypothesised that, forming a 'prolactin-circuit' between the central nervous system and the skin, prolactin performs as a neuroendocrine modulator of skin epithelial cell proliferation and of the skin immune system [5]. Only some scarce information is available on the hormonal milieu in AEDS patients. Therefore, the present study aimed at evaluation of serum concentration of prolactin in female patients suffering from severe AEDS as compared with the healthy subjects.

Materials and Methods

Patients

Thirteen non-smoking AEDS female patients suffering from severe AEDS (the median age was 24 years; range: 18-32), as determined by Rajka and Lageland's severity score [6] were enrolled for the study [7].

The control group consisted of fourteen non-atopic healthy women (the median age was 25 years; range: 18-31).

All the subjects submitted respective written consent and the study was approved by the University Committee of Ethics.

Blood sampling

Blood samples were taken at 8 a.m. for measurement of the basal concentrations of prolactin.

Hormone assay

Serum prolactin concentration was measured by automated electrochemiluminescence immunoassay (ECLIA) (Roche Diagnostics, Mannheim, Germany).

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Statistical analysis

Data were delivered as medians and ranges, and comparisons between groups were performed by Mann-Whitney's *U*-test. *P* values lower than 0.05 were considered significant.

Results

Table 1 shows serum prolactin concentrations in AEDS and the control group. The basal serum concentration of prolactin remained within the normal lab range, showing no significant differences among the groups.

Discussion

Raised serum concentration of prolactin, as compared with the healthy subjects and atopic dermatitis patients, has been recorded in patients with psoriasis [8], suggesting that this hormone plays some role in pathogenesis of this very disease [8, 9]. We did not find any significant differences in serum concentration of prolactin between patients with severe AEDS and the healthy controls. Thus, we cannot conclude that elevated prolactin concentration in serum plays a role in pathogenesis of the disease. However, it is possible that changes in local prolactin activity in the skin might be associated with AEDS pathogenesis. Neurohormones, such as prolactin, are also expressed in the skin. During the course of skin disorders, especially upon inflammatory response, the neuroimmunocutaneous system tends to get destabilized [10].

In conclusion, the study failed to detect any significant differences in serum basal concentration of prolactin among severe AEDS patients and the healthy subjects. It seems that increased secretion of prolactin does not accompany the immune-inflammatory processes associated with AEDS. However, the range of the study was too narrow to draw any ultimate conclusions.

Table 1. Serum prolactin concentration in severe AEDS patients and in healthy controls

Analysed parameters (unit)	Healthy controls (n=14)	AEDS patients (n=13)
	median range	median range
prolactin (ng/ml)	15.8 3.3-24.7	18.2 2.8-26.5

AEDS – atopic eczema dermatitis syndrome.

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