



Endocrinal Misbalance in Acne Patients with Postacne Signs

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Abstract

Objectives: Endocrine factors influence acne and it can also influence postacne signs formation. Therefore study of hormonal levels in acne patients with postacne signs formation is very important. The aim was to study levels of hormones and estimate changes of each studied hormone.

Methods: 102 female out-patients from Kyiv city dermatovenereologic hospital and other bases of the department of dermatovenereology with different clinical forms of acne were examined. Clinical and hormonal tests were done.

Results: 52.94% acne patients had different hormonal misbalances. The most typical changes were increased levels of prolactin and decreased levels of progesterone. The most typical changes in subgroup of acne patients with comorbidities were increased levels of 17α -hydroxyprogesterone and prolactin.

Conclusions: Hormonal misbalance can lead to late acne and more severe acne manifestations including postacne signs. Additional endocrinologic conditions can increase such an influence. Correction and control of endocrinologic disbalance can improve efficacy of acne treatment and prevent formation of postacne signs.

Keywords: Postacne; Hypertrichosis; Prolactin; Endocrinologic disbalance

Introduction

According to Ukrainian and foreign literature the interest to the problem of acne and postacne signs is growing. Because of wide spread of acne and postacne it is important for modern dermatology and esthetic medicine to study mechanisms of its development [1-4].

There are several methods of medical correction of postacne signs (topical treatment, injections and surgery) but none of them satisfy patients or doctors and guarantee good cosmetic effect [2,5-12]. Development of new methods of postacne treatment is actual. It is important to study different aspects of pathogenesis of postacne for that. Nevertheless, there are several modern explanations of acne and postacne formation but it is multifactorial problem and all these factors have to be investigated. Typically acne disappears without any signs but in about 40% of acne patients postacne is present. It happens because of evolution of acne rash elements. Scars, post inflammatory erythema and dishromia

belong to postacne signs. Duration of acne correlated with postacne signs formation. Global alliance acne treatment informed that duration of acne, deep inflammatory skin rash elements, and traumatization by patients and inadequate treatment are main reasons of postacne signs development [13]. Erythema and pigmentations are results of epidermal changes and scars are results of dermal traumatization. Hypertrophic or celoid scars are formed in case of excessive synthesis of connective tissue. It is most typical on the breast, between scapula and more rear on lower parts of jaws. But other types of scars are more frequent on the face. Atrophic scars are more typical for face than for extrafacial regions.

Endocrine factors influence acne and it can also influence postacne signs formation. Therefore study of hormonal levels in acne patients with postacne signs formation is very important.

The aim was to study levels of hormones and estimate changes of each studied hormone.

Methods

Patients with acne and postacne signs from Kyiv city dermatovenereologic hospital and other bases of the department of dermatovenereology were involved. In total 102 female out-patients with different clinical forms of acne were examined. All patients had clinical and laboratory examinations. Age of patients was 18-44 years old. Majority of patients were 20-30 years old.

The following laboratory tests were done for all patients:

- Luteinizing hormone
- Follicle-stimulating hormone
- Prolactin
- Thyroid-stimulating hormone
- 17 α -Hydroxyprogesterone (17OH)
- Dihydrotestosterone
- Testosterone
- Sex hormone binding globulin
- Dehydroepiandrosterone sulfate
- Free testosterone index
- Estradiol (E2)
- Progesterone

Statistic programs STATISTICA 10.0 En and Medstat were used. For statistical significance the value of $p < 0.05$

was used.

Results and Discussion

From 102 studied women with acne about 90% had level 2 of acne severity. 17 patients also had hypertrichosis and 4 patients had diffuse alopecia. One patient had autoimmune thyroiditis and another one myasthenia.

52.94% patients had different hormonal misbalances (Table 1). The most typical changes were increased levels of prolactin (n=21) and decreased levels of progesterone (n=23).

Only one patient with acne and hypertrichosis had all normal tests results. It showed that coexistence of hypertrichosis can increase hormonal misbalance and probably influence the course of acne and postacne signs. The most typical changes in this subgroup of acne patients were increased levels of 17 α -hydroxyprogesterone and prolactin. In patients without comorbidities the most frequent change was decrease of progesterone (Table 1).

Hormonal misbalance can lead to late acne and more severe acne manifestations including postacne signs. Additional endocrinologic conditions can increase such an influence.

Correction and control of endocrinologic disbalance can improve efficacy of acne treatment and prevent formation of postacne signs.

Age	Hormonal changes	Acne severity grade	Comorbidities
18	Prolactin, 17OH, Dihydrotestosteron	1	
24	Prolactin, 17OH	2	Hypertrichosis
25	Progesterone	2	
18	Progesterone	2	
23	Progesterone	3	
28	17OH, Prolactin,	2	Myasthenia
	Testosterone		
29	Progesteron	1	Hypertrichosis
23	Progesterone	2	Hypertrichosis
30	Prolactin, Testosterone, 17 OH	1	
33	Dehydroepiandrosterone sulfate, Progesterone	2	
30	17OH, Sex hormone binding globulin	3	
30	Prolactin	2	
20	Dehydroepiandrosterone sulfate, Progesterone	2	Hypertrichosis
27	Estradiol	1	

30	Sex hormone binding globulin	1	Diffuse alopecia
22	Progesterone	2	
25	Prolactin, 17OH, Progesterone	2	
22	Prolactin	2	
	Progesterone		
28	Prolactin	2	Hypertrichosis
28	17 OH	2	
18	Progesterone	2	
31	Prolactin	2	
26	Prolactin, Testosterone, 17 OH, Sex hormone binding globulin	2	
18	17 OH, Testosterone	2	
32	Prolactin	2	Diffuse alopecia
34	Sex hormone binding globulin	2	
22	Prolactin, Estradiol	2	
36	Sex hormone binding globulin, Dihydrotestosterone,	1	Diffuse alopecia
	Progesterone		
18	17 OH, Testosterone	2	
41	Estradiol, Progesteron	2	
21	Dehydroepiandrosterone sulfate, Progesterone	2	
25	Prolactin	2	
21	Prolactin	2	
	Progesterone		
26	Progesterone	2	
29	Prolactin	2	
23	Progesterone	1	
20	Prolactin	2	Hypertrichosis
	Progesterone		
29	17 OH	2	
23	17 OH, Sex hormone binding globulin, Dehydroepiandrosterone sulfate	2	Hypertrichosis
25	Prolactin, Progesterone, Testosterone, Dehydroepiandrosterone sulfate	2	Hypertrichosis
18	Testosterone, Progesterone	2	Diffuse alopecia
20	Dehydroepiandrosterone sulfate	2	Hypertrichosis
18	Testosterone	2	
18	Testosterone, Dehydroepiandrosterone sulfate, Thyroid-stimulating hormone, Progesterone	2	Hypertrichosis
38	17 OH	2	Hypertrichosis
35	Prolactin, Testosterone	2	
20	Prolactin	2	

18	Dehydroepiandrosterone sulfate, Progesterone	2	
20	Progesterone	2	Hypertrichosis
25	17 OH	2	
41	Thyroid-stimulating hormone, 17OH	2	Autoimmune thyroiditis
28	Prolactin	2	
25	Testosterone	2	
25	Prolactin, 17OH, Dehydroepiandrosterone sulfate, Sex hormone binding globulin	2	Hypertrichosis

Table 1: Hormonal changes in acne patients.

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