

conference abstract

observational

people

Skin lightening products linked to altered steroid hormone levels

Women who misuse corticosteroid creams for cosmetic skin lightening may be at risk of developing adrenal insufficiency, according to research presented at e-ECE 2020. Women that frequently used high strength steroid creams had significantly lower baseline cortisol levels, a sign of impaired cortisol function. Low cortisol and adrenal insufficiency is a serious condition that causes extreme fatigue and can even lead to death. These findings suggest that better education on the side effects of steroid creams is needed to prevent these women from seriously damaging their health.

The misuse of topical corticosteroids to cosmetically lighten the skin is common among some populations, including Egyptian women. The practice is associated with significant adverse effects such as acne, skin thinning and other skin damage. Yet the practice continues and there is a lack of awareness of these side effects and other potential health risks from prolonged usage. It has been suggested that prolonged usage, particularly at higher doses, could also affect the body's own regulation of the hormone cortisol. Cortisol is released from the adrenal glands and has an important role in the regulation of stress, metabolism and immune function. It is unknown to what extent these topical corticosteroids could be dysregulating normal cortisol function. Low levels of cortisol leads to a condition known as adrenal insufficiency, which is characterised by extreme fatigue, muscle weakness, depression, and if left untreated can cause coma or even death.

In this study, Dr Hany Khairy Mansour and colleagues at Ain Shams University in Cairo, measured the baseline cortisol levels (at 8am), BMI and blood pressure of 45 women who had been using topical corticosteroid creams for at least three months, and compared with women who had not used these creams. The team found that cortisol levels were lower in women using more potent corticosteroid creams, as well as in frequent users who applied it to larger areas of the body. Those using lower strength creams (e.g. 1% hydrocortisone) did not have significantly different cortisol levels. Additionally, there were no significant differences reported for BMI or blood pressure.

Dr Hany Khairy Mansour says, "The use of topical corticosteroids to lighten the skin is common in Egypt, particularly among younger women with lower socioeconomic status, but few are aware of the side effects and potentially serious health problems they can cause."

Dr Mansour advises, "We need to raise awareness of the serious complications associated with the misuse of topical corticosteroids to young Egyptian women. Over-the-counter sale of these high strength steroid creams should be restricted and prescription only. I would like to see government policymakers devising measures for appropriate health education on the health hazards associated with persistent cosmetic use of topical steroids."

Although these results point towards a risk of adrenal insufficiency in persistent users of high strength steroid creams for cosmetic purposes, this was a small study and more investigation is required to confirm these findings. Dr Mansour hopes to extend these findings by looking at cortisol levels in urine, over a 24 hour period, which is a much more sensitive measure of abnormal adrenal gland activity and possible adrenal insufficiency.

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Study of Effect of Whitening Creams on Serum Basal Cortisol level In Egyptian Females

Yara Muhammed Eid, MD; Iman Zaky Ahmed, MD; Merhan Samy Nasr, MD; Hany Khairy Mansour, MD; Mohammed Omar Awadh Baqraf, M.B.B.Ch.*; Samya Al Tohamy Ismail**.*

**Division of Internal Medicine and Endocrinology, Faculty of Medicine_Ain Shams University, Egypt;*

***Consultant doctors of biochemistry, Ain shams teaching hospital, Egypt.*

Background: Topical corticosteroids (TCs) are widely used as depigmenting agents alone or in combination with other fairness creams. However, its use may cause secondary adrenocortical insufficiency.

Objective: The aim of the present study is to evaluate the relationship between practice of whitening creams (Topical Corticosteroids) and serum cortisol level in a sample of healthy females at Ain- shams University hospital.

Methods: We recruited 45 subjects practice whitening creams (TCs) for three months or more; matched with a healthy control group consists of 45 participants. Blood pressure BMI and early morning basal serum cortisol level (8:00 am). Blood glucose, serum Na, and serum K were measured.

Results: Early morning serum cortisol level was statistically insignificant among subjects practice whitening creams with TCs vs. healthy controls (p value 0.307). However, there were 7 out of 45 participants in the study group (15.6%) while none (0%) of the control group had low serum cortisol level (<5ug/dl) with highly statistically significant difference (p value <0.001). In comparison and data analysis between subjects of the study group regarding practice duration, used quantity, application frequency, and method of exposure, there was high statistically significant difference between subjects with normal cortisol level vs. subjects with low cortisol level (p value <0.001). There were, no significant difference found regarding BMI, and arterial blood pressure between study group and controls.

Conclusion: Whitening creams abuse especially high potency TCs among Egyptian females may induce adrenal gland insufficiency.

Keywords: Serum cortisol level, Whitening creams, TCs

Notes for Editors

1. The poster "[*Study of Effect of Whitening Creams on Serum Basal Cortisol level In Egyptian Females*](#)" was presented on Wednesday 9 September 2020, online during e-ECE 2020.
2. e-ECE 2020 was held online on the 5-9 September. Catch up on [ESE On-Demand](#).
3. The [European Society of Endocrinology](#) was created to promote research, education and clinical practice in endocrinology by the organisation of conferences, training courses and publications, by raising public awareness, liaison with national and international legislators, and by any other appropriate means.