Factors Influencing the Occurrence of Steroid acne

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Abstract

Background: Steroid acne is an acneoform eruption induced by steroids use. Steroid acne is relatively common dermatological problem, causing great cosmetic disfigurement.

Objective: The study is aimed to evaluate several influencing factors on the occurrence of steroid acne. The factors to be assessed are age, sex, marital status, route of steroid administration, past history of acne, self-steroid prescription and type of occupation (outdoor/indoor).

Patients & Methods: A case control study is performed. The study subjects were collected from Al-Yarmouk Teaching Hospital and private clinic. They were allocated into 2 groups in a ratio of 1:1. The cases group includes patients with steroid acne and controls group include patients with any steroid responsive dermatoses. The study period was from January 2002 until July 2002. Logistic regression analysis is used to examine the effect of the above-mentioned factors; their effect is expressed as odds ratios.

Results: Seventy five steroid acne patients with a mean age of 20.8±4.5 years were collected and compared with a similar number of patients with any steroid responsive dermatosis as controls with a mean age of 30±10 years. Data analysis showed that the following factors contribute significantly to the increased incidence of steroid acne: sex (odds ratio: 3.95, P value: 0.009), route of steroid administration (odds ratio: 3.2, P value: 0.0319) and self drug prescription (odds ratio: 9.8, P value: 0.0002).

Conclusion: The problem of injudicious use of topical and systemic steroids for cosmetic purposes is increasing in Iraqi society. This improper use of steroids reflects the increased incidence of steroid acne in Iraqi dermatology practice.

Key words: Steroid acne, Acneoform eruption, influencing factors.

Introduction

Acne is a chronic inflammatory disease of the pilosebaceous unit, characterized by the formation of comedones, erythematous papules and pustules, less frequently nodules or cysts, and in some cases scarring.[1]

Steroid acne is an acneoform eruption characterized by sudden onset of follicular papules and pustules occur shortly after starting oral corticosteroids. [2] Identical lesions can be produced by application of topical corticosteroids. [3]

The precise mechanism of corticosteroids to provoke an acneoform reaction is uncertain. [3, 4] Corticosteroids do not affect the number of surface bacteria, but do induce cornification in the upper part of the pilosebaceous duct. [5, 6] So hypercornification is responsible for steroid acne similar to acne vulgaris. [7]

Steroid acne has become a common place in hospital practice owing to extensive use of corticosteroids to treat various disorders, [8] therefore the study is aimed to find out the factors that influence the development of steroid acne.

Patients & Methods

A case-control study is conducted to evaluate several factors that may contribute to the development of steroid acne. The factors are age, sex, marital status, route of steroid administration, past history of acne, self-steroid prescription and occupation.

The study subjects were chosen from the outpatient clinic at Al-Yarmouk Teaching Hospital And private clinic. They were divided into 2 groups in a ratio of 1:1 that is group of patients diagnosed clinically as having steroid acne and other group of patients attending the clinics for any steroid responsive dermatosis other than steroid acne (controls group). The study period extended from January 2002 until July 2002.

Statistical analysis is performed utilizing logistic regression analysis to see the effect of the above mentioned factors (independent variables) on the presence or absence of steroid acne (dependent variable). An estimate of odds ratio is obtained for each independent variable to tell us how much that those patients with this factor are more likely to develop steroid acne than those patients without this factor. If the value is greater than 1, the odds are increased; if the value is less than 1, the odds are decreased. A value of 1 leaves the odds unchanged.

Results

A total of 150 study subjects (75 subjects in each group) were enrolled into the study. The table below shows collectively the demographic characteristics of the patients, the factors of interest, their odds ratio, their confidence intervals and their significance.

The age factor is highly significant but the younger age group has limited susceptibility to steroid acne confined to 75%. The sex factor is also highly significant and the female sex is nearly 4 times prone to steroid acne than male sex. Marital status found to be not a significant factor that influences the occurrence of steroid acne. The route of steroid

administration is significantly affect the occurrence of steroid acne in which those who used topical steroid are 3 times more prone to steroid acne than those who used systemic steroid. The presence of past history of acne vulgaris found to be not a significant factor that influences the occurrence of steroid acne. The self-steroid prescription found to be the most significant factor and those who prescribed steroid by themselves is nearly 10 times prone to steroid acne than those who used steroid by doctor's prescription. The factor of occupation although significant but found to have banal effect limited to 7%.

Table summarizes the results of influencing factors analysis.

Factors	Cases	Controls	Odds ratio (95% Confidence interval)	P value
Age Mean (years) (SD)	20.85 (4.69)	30.43 (10)	0.75 (0.6531-0.8568)	0.00005
Sex (no.)				
Males	22	44	3.95	0.009
Females	53	31	(1.4092-11.0453)	
Marital status (no.)				
Married	15	35	0.24	0.1381
Unmarried	60	40	(0.0357-1.5870)	
Route of steroid administration				
Topical	56	41	3.2	0.0319
Systemic	19	34	(1.1068-9.3673)	
Past history of acne vulgaris				
Present	48	31	2.3	0.1121
Absent	27	44	(0.8217-6.5313)	
Self steroid prescription (no.)				
Present	67	31	9.8	0.0002
Absent	08	44	(2.9204-32.9208)	
Occupation (no.)				
Outdoor	15	09	0.07	0.0048
Indoor	60	66	(0.0108-0.4424)	

Discussion

Age is the factor that markedly influence the capacity to manifest acneoform pattern in which it is difficult to induce steroid acne in persons passed age 50, at the same time steroid acne rarely does occur in prepubertal children below the age of 10,[6] our study although found that age significantly influence the occurrence of steroid acne but this factor alone is not enough and the combined effect with other factors makes younger age group is important in the susceptibility to get steroid acne.

According to our observations, unfortunately, many women apply potent steroids to their face under the mistaken belief that this wonder drug will

Improve the complexion. They may have minor skin changes, perhaps a few papulopustules, dryness or wrinkles and will obtain steroids illicitly to correct these cosmetic deficiencies. This behavior of the continuous efforts of female to get better look render female sex more prone to steroid acne than males.

An old statement of persons with past history of acne are more reactive to acneogenic chemicals

including steroids, [6, 9] is not proved statistically in our study (concerning steroid use only) because we examined this factor in combined effect with the other factors and we observed that its odds, although has double effect, is a matter of coincidence as the value is not significant.

Topical steroids were incriminated more than systemic steroids in our study in the causation of steroid acne, a finding regarded new at least to Iraqi community. According to our best knowledge we did not come across any study comparing the effects of topical and systemic steroids together on the development of steroid acne.

A fundamental and strange finding in our study is that most of the patients used steroids as recommended by their friends or relatives to gain weight (Dexamethasone tablets) or to improve their complexion (topical steroids). The problem of self steroid prescription also present in the developed countries [10] but on small scale where most of the steroids are used for medical reasons or in a controlled trails. [11] Only athletes in developed countries were found to prescribe to themselves anabolic-androgenic steroids largely. [12, 13] So this behavior of our community explains the great effect of the factor of self steroid prescription.

House wives and students (indoors) constituted major fraction of the group with steroid acne but nearly the same finding was found in the control group, this observation makes the indoor occupations have a very minor effect in the development of steroid acne.

In conclusion, female sex, topical steroids availability as over the counter drugs and self prescription of steroids are fundamental factors in the increased problem of injudicious use of topical and systemic steroids. The drugs mostly used for cosmetic purposes in Iraqi society. So this improper use of steroids reflects the increased incidence of steroid acne in Iraqi dermatology practice.

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