

Research Article



Prevalence of Acne form Eruption out of Other Side Effects of Steroids Misuse Among Patient in Age Group 15-50 Years in Dermatological Unit, AL-Diwaniyah Teaching Hospital, Al-Diwaniyah Province, Iraq

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Key Words

Corticosteroids, side effects, acne form eruption, over the counter

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Received: 22nd July 2025

Accepted: 15th August 2025

Published: 29th September 2025

Citation: Jinan Emad Mohammed and Hassan Raji Jallab, 2025. Prevalence of Acne form Eruption out of Other Side Effects of Steroids Misuse Among Patient in Age Group 15-50 Years in Dermatological Unit, AL-Diwaniyah Teaching Hospital, Al-Diwaniyah Province, Iraq. J. Res. Stud. Biosci., 5: 38-45, doi: 10.36478/acejrsb.2025.38.45

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Abstract: Presently, interesting glucocorticoid are widely used in dermatology. Extensive investigation takes stayed conducted to enhance their potency, anti-inflammatory properties, and immune-suppressive effects, while minimizing any potential adverse reactions. However, the development of the "perfect" topical corticosteroid has yet to be achieved. Ideally, these drugs must effectively penetrate the outer layer of the skin, known as the stratum corneum, and achieve adequate concentrations within the skin without significantly increasing serum concentrations. To attain these properties, scientists have explored methods such as esterification to increase the natural lipophilicity of corticosteroids. While various structural modifications have been attempted in the past to improve the effectiveness of topical corticosteroids and increase their potency, these changes have often been related with an elevated risk of hostile properties.. Topical corticosteroids have become available as over the counter drugs and on social media and are widely misused for various conditions . Acneform eruption is the most common side effect as we saw in our study . This study aimed to evaluate prevalence of acne form eruption out of other side effects that results from steroids misuse , which done in dermatological unit in Aldiwaniyah teaching hospital / Aldiwaniyah/ Iraq. In this hospital based study, the study stayed considered to be a cross-sectional once. At the end of the study, we stayed able to comprise 105 participants who answered the questionnaire which is previously prepared which contain 21 questions about drug, skin lesion and demographic data. The study started on the 10th of March 2023 and ended at 10th of July 2023. The study stayed approved out at Al-diwanayah "teaching hospital" / dermatological unit/ "Al-diwanayah / Iraq". The study was included 23 (21.9 %) males and 82 (78.1 %) women and there stayed no important variance in gender frequencies between acne group and other symptoms group ($p = 0.388$). The study included 55 (52.4 %) married and 50 (47.6 %) not married and there was significant difference in marital status between acne group and other symptoms group ($p < 0.001$) in such a way that acne was less reported in married subjects. The study included 28 (26.7 %) of low socioeconomic status, 56 (53.3 %) of moderate socioeconomic status and 21 (20.0 %) of high socioeconomic status and there was significant difference in socioeconomic status between acne group and other symptoms group ($p = 0.001$) in such a way that acne was less reported in low status and more reported in high status. The study included 43 (41.0 %) illiterate subjects, 16 (15.2 %) of primary education level, 15 (14.3 %) of secondary education level and 31 (29.5 %) of tertiary education level and there was significant difference in education level between acne group and other symptoms group ($p < 0.001$) in such a way that acne was less reported in illiterate subject and more tertiary school level. Regarding skin lesion, Whole face involvement was reported in 32 (30.5 %), cheeks involvement was reported in 26 (24.8 %), whole face and shoulder involvement was reported in 10 (9.5 %), forehead and cheeks involvement was reported in 26 (24.8 %) and whole face and upper chest was reported in 11 (10.5 %) and there was significant difference in site of skin lesions between acne group and other symptoms group. Cheeks, forehead and cheeks and whole face and upper chest were more common in acne group in comparison with other symptom group. Acne and redness was reported in 51 (48.6 %). Hyper-pigmentation was reported in 24 (22.9 %). Pruritus and dryness was reported in 21 (20.0 %). Rosacea was reported in 4 (3.8 %). Hirsutism was reported in 3 (2.8 %). Photosensitivity was reported in 2 (1.9 %). Source of steroid drugs was Cosmetic shop was reported in 55 (52.4 %) cases, pharmacy was reported in 12 (11.4 %) cases, online was reported in 16 (15.2 %) cases, shared was the source in 16 (15.2 %) cases and nurse was the source in 6 (5.7 %) cases and there was no significant difference in source of steroid between acne group and other symptoms group ($p = 0.259$). The study showed that availability of steroids drugs in pharmacies (over the counter) and online lead to there misuse, also lake of information in community in general about these drugs increase this problem . This study showed the most common side effect in Al-diwanayah is acneform eruption, there is other common side effect , but acne is the commonest one. In this study both sexes were involved, but we find females more affected who are with low to moderate economic status .

INTRODUCTION

Corticosteroids have found extensive applications in various medical fields and can be administered through different routes^[1]. These synthetic equivalents of normal steroid hormones, formed in cortex of the adrenal, are classified as glucocorticoids, mineralocorticoids, plus sex steroids. They play crucial roles in the body's physiological processes and have been utilized in therapeutics for a considerable period of time. Ongoing research continues to unveil new therapeutic potentials and applications of corticosteroids in different disease conditions. However, the initial development of corticosteroids faced challenges^[2].

Corticosteroids and their synthetic derivatives exhibit distinct metabolic, anti-inflammatory, immunosuppressive, and vasoconstrictive (glucocorticoid) effects, as well as electrolyte regulation, water balance, and ion transport in renal tubules (mineralocorticoid)^[3]. Physiological doses of these mediators are engaged for auxiliary treatment when endogenous construction is compromised. Furthermore, glucocorticoids possess potent anti-inflammatory properties, making them a commonly prescribed class of drugs for various inflammatory and autoimmune disorders^[4]. Cortico-steroids exert diverse and widespread effects on , protein, carbohydrate and lipid metabolism, liquid and electrolyte equilibrium, as well as the usual functioning of the system cardiovascular, immunity system, skeletal muscles, kidneys, the system endocrine, and nervous .Corticosteroids play a crucial role in helping the body manage stressors, including environmental changes and noxious stimuli. They aid in the body's adaptation to these challenges^[3]. Corticosteroids can be classified into two categories based on their usage and effects on the human body: topical steroids and systemic steroids. Systemic corticosteroids, administered orally or parenterally (e.g., prednisolone, prednisone, dexamethasone ,methylprednisolone), Systemic cortico-steroids own strong immunomodulatory, anti-inflammatory, and anti-neoplastic possessions. They are crucial in the management of various environments such as auto-immune syndromes, asthma exacerbations, allergic responses, long-lasting disruptive pulmonary illness, and convinced malignancies^[5]. However, the use of systemic corticosteroids at great amounts and for prolonged periods carries serious risks^[6].

On the other hand, topical corticosteroids were first described in 1952 by Sulzberger and Witten, although their initial use with cortisone acetate ointment was deemed ineffective for skin diseases. They later worked with hydrocortisone and developed an ointment

containing crystalline hydrocortisone acetate, which showed promise^[7]. Since then, a range of topical corticosteroids with varying potencies, from low to ultrahigh, have been developed. Topical steroids play a crucial role in dermatology and are highly effective in providing rapid symptomatic relief for inflammatory dermatoses, particularly in the short term. However, their misuse, such as in infectious dermatoses, may initially improve symptoms but can lead to adverse effects. Their clinical effects are attributed to their anti-inflammatory, antiproliferative, and immunosuppressive properties^[8]. Misuse and overuse of topical steroids, especially on the face, have increased, leading to various adverse effects. The condition known as "topical steroid-dependent face (TSDF)" has emerged, encompassing symptoms like erythema and burning sensation upon cessation of topical steroid application^[9]. These adverse events, including TSDF, are exacerbated by inappropriate prescriptions and the availability of topical steroids as over-the-counter drugs. Inadequate policies regarding the sale of medications by pharmacists further contribute to this issue. The prevalence of side effects has increased with the introduction of higher-potency topical steroids. Typically, side effects become noticeable after 3-4 weeks of daily application and are usually reversible^[10].

One common side effect of corticosteroid drugs is the development of acne eruptions, known as steroid-induced acne or acneiform eruptions. This problem is not limited to a specific country and has been observed globally, including in developed and developing countries like the United States and India. Steroid-induced acne can result from the use of systemic or topical steroids, with cosmetics containing steroids being a common culprit, especially when used without medical prescription. Nowadays, cosmetics undergo extensive testing for comedogenicity, making them less frequent causes of acne. Drug-induced acne (DIA), a term introduced in 1972 by Kligman and Mills, refers to acneiform lesions induced by certain medications. DIA exhibits some differences compared to common acne, Steroid-induced acne, also known as acneiform eruptions, can be identified by certain characteristics. These include a patient's times past of medication aperture, abrupt start of symptoms, occurrence at an unusual age, presence on the neck and face, and the presence of injuries elsewhere seborrheic regions. The explosion typically contains of papulopustules, inflammatory papules and comedones. Diagnosis of steroid-induced acne involves a thorough evaluation of the patient's drug intake history, including details about dosage, duration of therapy, and the absence of other factors that could trigger acne.

Establishing a medical association between the initiation of medication therapy and the beginning of acne-like eruptions is also essential for diagnosis^[11]. Discontinuing the drug usually leads to a reduction in acne lesions^[11].

Aim of study: To find prevalence of acneform eruption out of other side effects of corticosteroids misuse among patients in dermatological unit, Aldiwaniyah teaching hospital, Aldiwaniyah province, Iraq.

MATERIALS AND METHODS

In this hospital based study, in order to evaluate the prevalence of acne form eruption out of other side effects of topical corticosteroids in dermatological conseltantant in al-diwanyiah Teaching Hospital, the study was designed to be a cross sectional one. At the end of study we were able to include 105 cases. The study started on March the 10th 2023 and ended at July the 10th 2023. The study was carried out at dermatological unit, department of medicine of Al-Diwaniyah Teaching Hospital, Al-Diwaniyah province. All patients with corticosteroids misuse based on history of drugs used and clinical examination to the skin lesion was included in this study, provided that he / she was in age between 15-50 years. We exclude Any patients younger than 15 years or older than 50 years, Individuals who refused to participate in the study were also excluded from study (patients were refused recognition using topical steroid drugs) and Pregnant females. A questionnaire was prepared included number of questions to evaluate this problem. These Variables was Demographic characteristics, which was age, gender, residency, occupation, socioeconomic status, marital status, history of drugs on chronic use, history of use steroid and use of sunblock. More detailed questions about steroid drugs like if they have information about steroids , if they know about amounts of steroid can be used for each part of body skin, how many times they used steroid (one time / day, two times - three times/week and one time / month) ,causes to use these drugs (hyperpigmentation, acne, dryness , allergy or skin infections), and for how long these drugs was used (days, months, or years). Clinical examination to site of the skin lesion, characters of the lesion, other symptoms like pruritus, hypo / hyperpigmentation, photosensitivity, telangiectasia and redness of skin at site of application of steroid drug. The study was approved by the institutional ethical approval committee and formal agreement was obtained from the directorate of Health in Al-Diwaniyah province, the formal representative of Iraqi Ministry of health. Verbal consent was obtained from each participant after full illustration of the aim and procedures related to the current study. Data were collected and transformed into a spread sheet of

Microsoft Office Excel 2010 and then into an SPSS (statistical package for social sciences) version 23. Numeric quantitative data were expressed as mean, range and standard deviation (SD), whereas, qualitative data were expressed as number and percentage. Comparison of mean between any two groups was done according to independent sample t-test, while chi-square test was used to evaluate association between any two categorical variables. The level of significance was considered at $P = 0.05$.

RESULTS AND DISCUSSIONS

Proportions of side effects of steroid use among study sample are shown in figure 1. Acne and redness was reported in 51 (48.6%). Hyper-pigmentation was reported in 24 (22.9%). Pruritus and dryness was reported in 21 (20.0%). Rosacea was reported in 4 (3.8%). Hirsutism was reported in 3 (2.8 %). Photosensitivity was reported in 2 (1.9 %). The study included 23 (21.9 %) males and 82 (78.1%) females and there stayed no important variance in gender frequencies between acne group and other symptoms group ($p = 0.388$). The study included 55 (52.4 %) married and 50 (47.6 %) not married and there was significant difference in marital status between acne group and other symptoms group ($p < 0.001$) in such a way that acne was less reported in married subjects as seen in table 1.

The study included 28 (26.7%) of low socioeconomic status, 56 (53.3 %) of moderate socioeconomic status and 21 (20.0 %) of high socioeconomic status and there was significant difference in socioeconomic status between acne group and other symptoms group ($p = 0.001$) in such a way that acne was less reported in low status and more reported in high status. The study included 43 (41.0 %) illiterate subjects, 16 (15.2 %) of primary education level, 15 (14.3 %) of secondary education level and 31 (29.5 %) of tertiary education level and there was significant difference in education level between acne group and other symptoms group ($p < 0.001$) in such a way that acne was less reported in illiterate subject and more tertiary school level. Characteristic of skin lesions are shown in table 2. Whole face involvement was reported in 32 (30.5 %), cheeks involvement was reported in 26 (24.8 %), whole face and shoulder involvement was reported in 10 (9.5 %), forehead and cheeks involvement was reported in 26 (24.8 %) and whole face and upper chest was reported in 11 (10.5 %) and there was significant difference in site of skin lesions between acne group and other group of symptoms. Cheeks, forehead and cheeks and whole face and upper chest were more common in acne group in comparison with other symptom group.

Source of steroids are shown in table 3. Cosmetic shop was reported in 55 (52.4 %) cases, pharmacy was

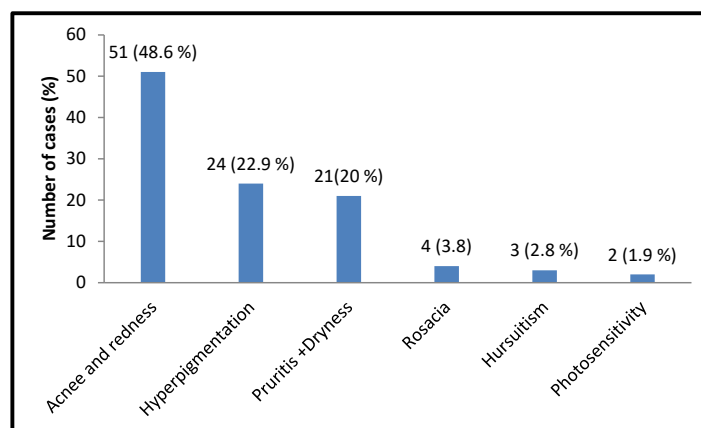


Fig. 1: Bar chart showing the frequency distribution of enrolled subjects according to side effects of steroid use

reported in 12 (11.4 %) cases, online was reported in 16 (15.2 %) cases, shared was the source in 16 (15.2 %) cases and nurse was the source in 6 (5.7 %) cases and there stayed no important variance in source of steroid amongst acne group and other group of symptoms ($p = 0.259$). Indications to use steroids are shown in table 4. Hyperpigmentation was seen in 21 (20.0 %), acne was seen in 22 (21.0 %), dryness was seen in 24 (22.9 %), infections were seen in 4 (3.8 %), lightening of skin was seen in 30 (28.6 %), and allergy was seen in 4 (3.8 %). The significant variation ($p = 0.011$) indicated that acne, infections and lightening of skin were more common in acne group contrasted to other group of symptoms. Types of steroid used are shown in table 5. Labeled type was reported in 10 (9.5 %) and off labeled type was reported in 95 (90.5 %) cases. There stayed no important alteration in type of steroid among acne group and other group of symptom ($p = 0.447$). Duration of use of steroid was as following: Days and weeks were seen in 16 (15.2 %), months were seen in 47 (44.8 %) and years were seen in 42 (40.0 %) and there was significant difference (0.012) so that months' duration of use was associated with acne group. Times of taking steroids are shown in table 6. Once per day was reported in 71 (67.6 %), Three times per week was reported in 12 (11.4 %), Irregular was reported in 17 (16.2 %) and Once per month was seen in 5 (4.8 %) and there stayed no important alteration in this time among acne group and other group of symptoms ($p = 0.960$).

In this study, a comparison of characteristics of subjects with acne with those of subjects with other side effects was made aiming at identifying risk factors associated with development of this side effect. It has been shown that subjects with acne were significantly younger than those subjects with other side effects. Therefore, age of subject should be taken into consideration when treating them using topical steroids. In this study, most of subjects were females accounting for 78.1 % and the smaller proportion was represented

by males (21.9 %) indicating that misuse of topical steroids is more frequently encountered in females than in males in our community. According to a study conducted among 6723 new patients, 379 individuals (5.63%) were identified as presenting with abuse and contrary properties of relevant corticosteroids^[12]. Interestingly, 78.89% of these cases stayed women. Furthermore, further than 65% of the affected sick fell within group of age of 10-29 years. In addition, there was no significant difference in gender frequency with respect to kind of adverse outcome, acne versus others. No previous study has compared the rate of acne to other adverse effects with respect to gender following misuse of topical steroid. Comparable ratio of married and unmarried individuals was observed in this study; however, acne was less reported in married subjects and this can be explained by that fact that acne was more frequently seen in younger subjects who were mostly not married. Based on the Dey (2014) study, married using steroids were less frequent than not married. In this study we observed that, illiterate women and women who accomplished primary school were mostly housewives and their major complaint was hyperpigmentation and to a lesser extent the development of acne form rash and this is probably due to older age than the adolescent or young adulthood period that is more liable for such side effect. The low level of education in our opinion plays a major role in the development of hyperpigmentation in that subset of population because they used to share unlabeled already prepared mixtures of topical agents that have been proved to contain high doses of potent steroid. Most of cases enrolled in the present research were of moderate and low socioeconomic class^[13]. Performed a study on the use of topical steroid and used a different method for assessment of socioeconomic status other than that used in the present work and in the contrary to our results they reported use of steroid in various socioeconomic states. The most acceptable

Table 1: Sociodemographic characteristics of subjects enrolled in this study

Characteristic	Total n = 105	Acne and redness n = 51	Other symptoms n = 54	p
Age (years)				
Mean $\pm$ SD	29.36 $\pm$ 10.08	23.00 $\pm$ 6.58	35.37 $\pm$ 9.10	<0.001 ***
Range	15 -50	15 -39	17 -50	
Gender				
Male, n (%)	23 (21.9 %)	13 (25.5 %)	10 (18.5 %)	0.388 C NS
Female, n (%)	82 (78.1 %)	38 (74.5 %)	44 (81.5 %)	
Marital status				
Married, n (%)	55 (52.4 %)	14 (27.5 %)	41 (75.9 %)	<0.001 C ***
Not married, n (%)	50 (47.6 %)	37 (72.5 %)	13 (24.1 %)	
Socioeconomic status				
Low, n (%)	28 (26.7 %)	7 (13.7 %)	21 (38.9 %)	0.001 C ***
Moderate, n (%)	56 (53.3 %)	27 (52.9 %)	29 (53.7 %)	
High, n (%)	21 (20.0 %)	17 (33.3 %)	4 (7.4 %)	
Educational level				
Illiterate, n (%)	43 (41.0 %)	9 (17.6 %)	34 (63.0 %)	<0.001 C ***
Primary, n (%)	16 (15.2 %)	10 (19.6 %)	6 (11.1 %)	
Secondary, n (%)	15 (14.3 %)	11 (21.6 %)	4 (7.4 %)	
Tertiary, n (%)	31 (29.5 %)	21 (41.2 %)	10 (18.5 %)	

Table 2: Site of skin lesions

Characteristic	Total n = 105	Acne and redness n = 51	Other symptoms n = 54	p
Site of skin lesion				
Whole face, n (%)	32 (30.5 %)	7 (13.7 %)	25 (46.3 %)	0.006 C **
Cheeks, n (%)	26 (24.8 %)	15 (29.4 %)	11 (20.4 %)	
Whole face and shoulder, n (%)	10 (9.5 %)	5 (9.8 %)	5 (9.3 %)	
Forehead and Cheeks, n (%)	26 (24.8 %)	16 (31.4 %)	10 (18.5 %)	
Whole face and upper chest, n (%)	11 (10.5 %)	8 (15.7 %)	3 (5.6 %)	
Duration of lesion				
Days and weeks, n (%)	15 (14.3 %)	9 (17.6 %)	6 (11.1 %)	<0.001 C ***
Months, n (%)	58 (55.2 %)	37 (72.5 %)	21 (38.9 %)	
Years, n (%)	32 (30.5 %)	5 (9.8 %)	27 (50.0 %)	

Table 3: Source of steroids

Characteristic	Total n = 105	Acne and redness n = 51	Other symptoms n = 54	p
Source of steroid				
Cosmetic shop, n (%)	55 (52.4 %)	22 (43.1 %)	33 (61.1 %)	0.259 C NS
Pharmacy, n (%)	12 (11.4 %)	6 (11.8 %)	6 (11.1 %)	
Online, n (%)	16 (15.2 %)	9 (17.6 %)	7 (13.0 %)	
Shared, n (%)	16 (15.2 %)	9 (17.6 %)	7 (13.0 %)	
Nurse, n (%)	6 (5.7 %)	5 (9.8 %)	1 (1.9 %)	

Table 4: Indications to use steroids

Characteristic	Total n = 105	Acne and redness n = 51	Other symptoms n = 54	p
Indications of steroids				
Hyperpigmentation, n (%)	21 (20.0 %)	4 (7.8 %)	17 (31.5 %)	0.011 C *
Acne, n (%)	22 (21.0 %)	15 (29.4 %)	7 (13.0 %)	
Dryness, n (%)	24 (22.9 %)	10 (19.6 %)	14 (25.9 %)	
Infections, n (%)	4 (3.8 %)	3 (5.9 %)	1 (1.9 %)	
Lightening of skin, n (%)	30 (28.6 %)	18 (35.3 %)	12 (22.2 %)	
Allergy, n (%)	4 (3.8 %)	1 (2.0 %)	3 (5.6 %)	

Table 5: Types of steroid used and duration of use

Characteristic	Total n = 105	Acne and redness n = 51	Other symptoms n = 54	p
Type of steroids				
Labeled, n (%)	10 (9.5 %)	6 (11.8 %)	4 (7.4 %)	0.447 C NS
Off labeled, n (%)	95 (90.5 %)	45 (88.2 %)	50 (92.6 %)	
Duration of use				
Days and weeks, n (%)	16 (15.2 %)	9 (17.6 %)	7 (13.0 %)	0.012 C *
Months, n (%)	47 (44.8 %)	29 (56.9 %)	18 (33.3 %)	
Years, n (%)	42 (40.0 %)	13 (25.5 %)	29 (53.7 %)	

explanation for our findings is that poor subjects will face a difficulty in reaching medical advice and using labeled topical steroid because of the cost of these agents; however, subjects with moderate and low income will easily obtain these already available off-label agents, on the other hand, people of high socioeconomic

class may be well educated people and presumably have enough knowledge about hazards of using topical steroids. With respect to level of education, current study included a significant proportion of illiterate subjects (41.0 %) who were mostly housewives and relatively smaller fractions of educated subjects

Table 6: Times of taking steroids

Characteristic	Total n = 105	Acne and redness n = 51	Other symptoms n = 54	p
Times to take steroid				
Once per day, n (%)	71 (67.6 %)	34 (66.7 %)	37 (68.5 %)	0.960 C NS
Three times per week, n (%)	12 (11.4 %)	6 (11.8 %)	6 (11.1 %)	
Irregular, n (%)	17 (16.2 %)	9 (17.6 %)	8 (14.8 %)	
Once per month, n (%)	5 (4.8 %)	2 (3.9 %)	3 (5.6 %)	

distributed as primary, secondary and tertiary level of education. The finding of misuse of topic steroids in illiterate subjects is accepted because of lack of knowledge and less awareness about side effects of these agents, but, the misuse of these agents by subjects who accomplished tertiary level of education raise the issue of the need of health campaigns by health institutes to fight such behavior in the community making use of available social media targeting these bad habits may help reducing such bad health practices. In this study, it was observed that most patients were complaining of acne and redness that was reported in 51 (48.6 %); however, other side effects were reported such as hyper-pigmentation, pruritus, dryness, rosacea was reported, hirsutism and photosensitivity Local adverse outcome tend to occur with prolonged treatment and depend on potency of TS, its vehicle and site of application. It has been shown in other countries that; the most common include atrophy, striae, rosacea, perioral dermatitis, acne and purpura. Hypertrichosis, pigment alteration, delayed wound healing and exacerbation of skin infections are less frequent^[14]. Topical steroid-induced rosacea commonly affects middle-aged women, characterized by the presence of papules and pustules on the skin. Initially, these symptoms may be controlled with the use of low-potency topical steroids.

It is important to note that hyperpigmentation following the use of steroids^[15]. These side effects occur more with TS of higher potency and on particular areas of the body like face and genitalia^[16]. In the current study we observed that, whole face involvement was reported in 32 (30.5%), cheeks involvement was reported in 26 (24.8%), whole face and shoulder involvement was reported in 10 (9.5%), forehead and Cheeks involvement was reported in 26 (24.8%) and whole face and upper chest was reported in 11 (10.5%) and there was significant difference in site of skin lesions between acne group and other symptoms group. Cheeks, Forehead and Cheeks and Whole face and upper chest were more common in acne group in comparison with other symptom group. Indeed, these sites, face, cheeks and upper chest are the usual sites to apply these topical agents, thus it is very obvious that adverse outcomes will be encountered in these sites. In this study an observation was made that moderate duration of use for months was more common in our sample and both

extremes, shorter duration for weeks or longer duration for years are less frequent and that moderate duration of months was more associated with acne than other durations. Actually, for the first instance one may ask why moderate duration is more often associated with side effects than longer duration; however, longer duration was seen in individuals who were using these topical agents infrequently and irregularly; while those using these agents for months used to apply them frequently and regularly so their adverse effects will be more likely. In this study, it is worth to mention that the major fraction of participants who complains of hyperpigmentation where those who used to apply the topical agents irregularly and less frequently than others and who used the agents for relatively longer duration of years. In recent times, there has been a growing concern regarding the indiscriminate usage of strong fluorinated relevant steroids between the universal populace in Iraq. This misuse has been linked to an escalating occurrence of side effects associated with these medications. According to our findings, the following sources were identified: Cosmetic shop was reported in 55 (52.4 %) cases, pharmacy was reported in 12 (11.4 %) cases, online was reported in 16 (15.2 %) cases, shared was the source in 16 (15.2 %) cases and nurse was the source in 6 (5.7 %) cases and there was no significant difference in source of steroid between acne group and other symptoms^[17].

Indications to use steroids were as following: Hyperpigmentation was seen in 21 (20.0 %), acne was seen in 22 (21.0 %), dryness was seen in 24 (22.9 %), infections were seen in 4 (3.8 %), lightening of skin was seen in 30 (28.6 %), and allergy was seen in 4 (3.8 %). The significant variation ($p = 0.011$) indicated that acne, infections and lightening of skin were more common in acne group contrasted to other symptoms group. The sources of steroids in the study included paramedical personnel (27.1%), self, friend, or family member (20.7%), pharmacist (18.6%), street vendor (17.9%), physician (non-dermatologist) (11.4%), and dermatologist (4.3%). Topical steroids have emerged in recent years as major skin lighteners owing to their potent bleaching power, and perhaps also their anti-inflammatory activity, which can reduce the risk for dermatitis^[18]. The misuse of topical corticosteroids was driven by various indications, with skin lightening being the primary reason (65.7%), followed by mild acne, facial dryness,

napkin dermatitis, pediculosis pubis, scabies, and tinea corporis^[18]. It is important to note that the actual problem of topical corticosteroid misuse in Iraq might be even more significant, as many affected individuals may not have sought medical attention or experienced side effects at the time of the study. The availability of these drugs without a prescription, particularly from street vendors and non-pharmaceutical shops, contributes to the widespread misuse. The prevalence of topical corticosteroid misuse in Iraq underscores the urgent need for awareness campaigns, regulations, and improved access to appropriate healthcare. Addressing this issue requires a multifaceted approach involving healthcare professionals, regulatory bodies, and public education to ensure the appropriate and responsible use of topical corticosteroids. In the present study, types of steroid used were as following: Labeled type was reported in 10 (9.5 %) and off labeled type was reported in 95 (90.5 %) cases. There was no significant difference in type of steroid between acne group and other symptom group ($p = 0.447$). Regarding duration of use, we already discuss the difference between moderate duration and longer duration and we stated that longer duration was confined to those using the drugs irregularly and less frequently than others so that side effects will be delayed for years. In the current study, times of taking steroids were as following: Once per day was reported in 71 (67.6 %), Three times per week was reported in 12 (11.4 %), Irregular was reported in 17 (16.2 %) and Once per month was seen in 5 (4.8 %) and there was no significant difference in these times between acne group and other symptoms group. So frequent use within short duration was seen in great proportion of individuals and this is the reason why side effects are common following misuse of these topical steroids because of relatively high dose associated with frequent application.

CONCLUSION

Steroid induced acne is a common problem. Cosmetic concerns, over the counter availability of topical corticosteroids and media advertisement of facial creams in our country, in addition to lack of knowledge about side effect and doses of steroids for each part of the body, are major causes for steroid abuse which affecting mainly younger and middle ages females. In this study both sexes were involved, but we find females more affected who are with low to moderate economic status. The most common side effect of steroids was acne form eruption; the cause of this problem is using steroids as fairness and lightening creams even in middle aged females, because they thought that light skin is more beauty, also uses it for treatment of acne without medical prescription. Use of social media and famous

people for promotion on about mixtures containing steroids, with absence of censorship on these social media increase this problem.

Acknowledgements: First of all I would like to express my deep thanks to God for giving me strength and passion to finish this work. I would like to express my great appreciation and thanks to the staff in dermatological unit/ Al-Diwaniyah teaching hospital. It is of great interest to express a special kind of thanks and appreciation to Professor Dr. Hassan Raji Jallab for his supervision, knowledge, brilliant ideas, great support and help to accomplish the theoretical and the practical aspects concerning the present study. Deep appreciation and thanks are to be expressed to all employees in Governmental health institutes in Al-Diwaniyah Province, especially those who participate in this study. Never to forget all who participate by their encouragement, support, assistance and advice in order to accomplish the current work in its final appearance

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