

# Injudicious Use of Topical Steroids, A Misconcept in Treatment of Patients with Acne Vulgaris

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## ABSTRACT

**Objectives:** To determine the frequency of use of topical steroids by acne patients and to observe various cutaneous side effects in these patients.

**Study Design:** Descriptive study

**Materials and Methods:** This study was conducted in Dermatology out patient department, Pakistan Railway Hospital, Rawalpindi from February 15 to April 15, 2012. Total 110 patients were enrolled in the study. All the patients were having clinical diagnosis of acne vulgaris. Patients of both genders with age range of 13- 35 years were included in the study. Frequency of patients using topical steroids to treat acne was calculated and cutaneous side effects of topical steroids were noted.

**Results:** Out of 110 patients of acne, 76 were females (69%) & 34 were males (31%). Age range of patients was from 13 to 35 years. Topical steroids were used by 68 patients (62%) with acne vulgaris. Mean duration of application of topical steroids ranged from 2weeks to 5months. Most commonly used steroid was betamethasone valerate(62%), followed by clobetasol propionate(29%) and flucinolone acetonide(8%). Out of 68 patients using topical steroids cutaneous side effects were seen in 50 patients in the form of aggravation of existing lesions in 18 patients(36%), perioral dermatitis 12 patients(24%), telangiectasias 8 patients(16%), increased facial hair growth 7 patients(14%), tinea incognito in 3 patients(6%) and acne rosacea in 2 patients(4%).

**Conclusion:** This study shows that a large number of patients are using topical steroids to treat acne lesions. Use of topical steroids is a misconception in treating the lesions of acne vulgaris and their use is associated with various cutaneous side effects including aggravation of acne lesions, skin atrophy, telangiectasias, perioral dermatitis, hirsutism, acne rosacea and tinea incognito.

**Key Words:** *Topical corticosteroid, Retinoids, Lasers*

## Introduction

Acne is a chronic inflammatory disease of pilosebaceous Unit. Most commonly it affects the face (99% of cases), less frequently it also affects the back and chest. It is characterized by increased sebum production, formation of open and Closed comedones, papules and pustules.<sup>1,2</sup>

The condition usually starts in adolescence and frequently resolves by mid-twenties. Various treatment modalities are available to treat acne ranging from antibiotics, retinoids and lasers.<sup>2,3</sup> As in more than 90% of cases it involves face it has an important impact on appearance of an individual and psychosocial effects.<sup>4,5</sup>

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Topical corticosteroids constitute one of the largest groups of drugs being used in dermatology. Topical corticosteroids were first synthesized in 1930's in the form of cortisone. Hydrocortisone was first described in 1951 for topical use and, subsequently, the super-potent steroids were introduced in 1974.<sup>6,7</sup>

Clinical effectiveness of glucocorticoids is related to its four basic properties; **antiproliferative effects**, immunosuppressive, vasoconstrictive, and anti-inflammatory effects.<sup>8,9</sup>

Topical corticosteroids used in various dermatological diseases can lead to an increased risk of side effects that have become more prevalent since the introduction of higher potency steroids.<sup>9,10</sup>

Local side effects such as epidermal thinning, dermal striae, atrophy,

telangiectasia, tinea incognito, purpura, can occur and long term use can lead to steroid rosacea.<sup>10,11,12</sup> These local adverse effects of topical steroids are known, but are poorly characterized with respect to their true incidence.

Abuse of topical steroid as cosmetic cream is quite common now a days including their use to treat acne. Some patients might have good response initially, but on continuation of application of topical steroids acne worsens and other cutaneous side effects begin to appear that is the time when patients come to seek medical advice.<sup>13,14</sup> In this study we find out frequency of patients using topical steroids to treat acne before visiting dermatologist. We also observed various cutaneous side effects that were appearing due to the use of topical steroids.

### Materials and Methods

The study was conducted in Dermatology out patient department, Pakistan Railway Hospital, Rawalpindi. Duration of study was two months from 15th February 2012 to 15th April 2012. A total of 110 patients with acne vulgaris were enrolled in the study. Sampling was done by non-probability convenient sampling. All the patients were having clinical diagnosis of acne vulgaris based on the presence of papules, pustules, comedones and post acne scars. An informed verbal consent was ensured from every study subject.

All the patients were having involvement of face and in some patients there was also involvement of upper trunk. Patients of both genders with age range of 13-35 years were included in the study. Patients with drug induced (systemic) acne were excluded as were the patients who used topical steroids for some other reason and later on

developed acne form eruption on face. Patients qualification/ occupation was also noted and they were asked about person prescribing steroid whether friend, colleague, or pharmacist. Duration and potency of steroid used was also noted. Duration of use of topical steroids was from 2 weeks to 5 months. Percentage of patients using topical steroids to treat acne was calculated. Cutaneous side effects of topical steroid were also noted. SPSS 13 was used to analyze the data.

### Results

Out of 110 patients, 76 were females (69%) & 34 were males (31%). Patients were between 13 to 35 years of age. Out of 110 patients topical steroids were used by 68 patients (62%). Mean duration of application of topical steroid ranged from 2 weeks to 5 months. Most commonly used steroid was betamethasone valerate(62%), followed by clobetasol propionate(29%) and flucinolone acetonide(8%). Reason for early withdrawal or short duration of use was aggravation of acne lesions and other cutaneous side effects. Most common side effect observed was aggravation of existing lesions with appearance of new lesions. (Figure1) Other side effects included perioral dermatitis (Figure2), increased hair growth on face (Figure3) telangiectasias and acne rosacea(Figure4) involving facial skin (Table I).

In most of the patients, use of topical corticosteroid was suggested by their friends and chemists followed by beauticians, relatives and in some cases on general practitioner's advice (Table II).

### Discussion

Acne is a polymorphic, inflammatory skin disease. It is one of the most frequent skin



Figure 1: Aggravation of existing acne lesions



Figure 2: Perioral dermatitis



Figure 3: Increased hair growth on face



Figure 4: Acne rosacea

Table I: Frequency of side effects of topical steroids in study population (n= 62)

S. No	Side Effects	Percentage
1	Aggravation of existing lesions	18 (36%)
2	Perioral dermatitis	12 (24%)
3	Telangiectasias	8 (16%)
4	Increased facial hair growth	7 (14%)
5	Tinea incognito	3 (6%)
6	Acne rosacea	2 (4%)

Table II: Frequency of Prescriber of topical steroids in study population (n=62)

S.No	Prescriber	Number (%age)
1	Friends/colleagues	55.5%
2	Pharmacist/Chemist	25.4%
3	Beauticians	13.6%
4	Relatives	4.6%
5	General Practitioners	0.9%

diseases.<sup>15,16</sup> Even in Western countries the prevalence of acne in adolescents is between 50% and 95%. Acne is a disease primarily of adolescence. It is triggered by initiation of androgen production by the adrenal glands and gonads, and it usually subsides after the end of growth.<sup>17, 18</sup>

Corticosteroids have been in use for over 50 years. Topical corticosteroids were first synthesized in 1930's in the form of cortisone. Later on fluorinated and other potent topical steroids were

introduced.<sup>19,20,21</sup> Topical steroids belongs to a class of compounds with a broad effect on immune regulatory functions. They have both anti-inflammatory and immune modulating effects. Varied clinical presentations are seen with prolonged and continuous use of topical steroids.<sup>22,23</sup>

Topical corticosteroids are one of the most widely used therapeutic agents in dermatology.<sup>10,11,12</sup> They provide rapid symptomatic relief in almost all inflammatory dermatosis, especially in the short term. Even incorrect use, for instance in infectious dermatosis, produces an initial improvement in the symptoms.<sup>24,25</sup> In our study patients were misusing topical steroids to treat acne to get their acne lesions resolve soon.

A study was done in India regarding use of topical steroids to treat various dermatoses. A total of 2926 patients with facial dermatoses were screened, of which 433 (14.8%) were using topical steroids and out of them 104 (24%) of patients were using them for acne.<sup>13</sup> A study done in Iraq reported that 7.9% of the dermatology clinic attendees are misusing topical steroids.<sup>21</sup> In a study on facial topical steroid misuse from China, the proportion of patients applying topical steroids to the face was 28.5%.<sup>20</sup>

Almost 15% of the dermatology outpatients with facial dermatosis are already using topical steroids when they contact a specialist. Alarming, in more than 93% of these cases, the topical steroids is either not needed at all, used for much longer than needed, of the wrong potency or is instituted without a diagnosis of the underlying condition.<sup>6,7,19</sup>

We have seen in our study that the suggestions to use them were given by

friends, relatives, pharmacy, beauty parlors and even doctors. Basic purpose of starting the steroid cream in all of them was to treat acne lesions and also to look fairer and beautiful .It was found in this study that Betamethasone valerate was the most commonly used topical corticosteroid, may be due to this being the most cost-effective and easily available amongst all.

In our study use of topical steroids was most common in teenage group and mostly in females. Patients were also asked about their qualification. Misuse of topical steroids was also seen in patients who have done their graduation or were above graduates.

In Pakistan different corticosteroid molecules, ranging in potency from mild to super-potent, are available for topical use on the skin. These molecules are marketed under a variety of brand names by multiple pharmaceutical companies. Most of these formulations are available at every medical store with or without a prescription. Because of inadequate policing of medicine shops by the authorities these topical steroids are sold without any prescription. So the patients have free access to them.

Cutaneous side effects of topical steroids have been studied in various studies in western world mainly in context of their use in atopic dermatitis.<sup>11,12</sup> In our region, due to free availability of topical steroids as over the counter drugs, side effects are also seen in context of treating acne .Besides that their use as wonder drug to become fairer is increasing.

As indicated by the data in this study, the problem of topical corticosteroid misuse is significant, and unless urgent steps are taken on all possible fronts we will continue to face these side effects of topical steroids.

Awareness programmes regarding Indications and contraindications of topical steroids need to be conducted to general community and general practitioners to avoid misuse of topical steroids.

### Conclusion

This study shows that use of topical steroids to treat acne lesion in our population is quite common. This misconception in patients with acne vulgaris is associated with cutaneous misconception in patients with acne side effects including aggravation of population is quite common. This acne lesion, skin atrophy telangiectasias, perioral dermatitis, lesions in our, hirsutism, acne rosacea and various other side effects. Awareness programs should be conducted to make people aware of these side effects. This study highlight the need for provision of better information and education to patients and possibly general practitioners regarding the safety, potency and appropriate use of topical corticosteroids.

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