



## A Study on Topical Steroid Abuse and Its Consequences in Dermatology

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### Abstract

**Aim:** To assess the abuse and adverse effects of inadvertent use of topical corticosteroids for various common dermatological conditions.

**Materials and Methods:** Fifty patients who attended our skin OPD with different dermatological problems, with history of various topical steroids application were included in our study. The type of topical medications and its contents, indication and duration of use were documented. Details of the prescriber and its effects on skin were observed and analyzed.

**Results:** Majority of our patients were male belonging to age group 15 to 30 years. The common indications were facial pigmentation, dermatophytosis and acne. The source of drug were mostly from pharmacist, friends and family members. Molecule mostly used were betamethasone valerate, clobetasol propionate and mometasone furoate. The common consequences we observed were acneiform eruptions, tinea incognito, erythema with telengectasias, cutaneous atrophy and striae.

**Conclusion:** Topical steroids should be used cautiously and judiciously. Awareness should be given regarding the indications and its consequences. Avoidance of self medication by over the counter purchase should be stressed upon. While treating children extreme care should be given regarding the selection of potency of topical steroids.

### Introduction

The topical steroids are the main stay of treatment in various types of non infectious<sup>1</sup> inflammatory dermatological conditions. They were first used successfully by Sulzberger and Witten in 1952<sup>2</sup>. They have anti inflammatory, vasoconstriction,

anti proliferative and immunosuppressive effects.

They are classified according to their potency. The adverse effect depends on potency, duration, quantity, method and site of application.

Nowadays dermatologists are facing many difficulties in diagnosing and treating the common

infectious skin conditions which are modified by the inadvertent use of topical steroids by the pharmacist, over the counter purchase by the patients, advised by the friends, neighbours, relatives and non dermatologist.

The commonest adverse effects of topical steroids abuse are acneiform eruptions ,secondary infections, cutaneous atrophy, tinea incognito, erythema and telangiectasia, dyspigmentation, purpura and hypertrichosis.

**Objectives**

The study was conducted to find out the incidence of topical steroid abuse and various adverse effects based on their potency.

**Materials and Methods**

A prospective clinical study was conducted in our department of dermatology Coimbatore medical college hospital from January 2017 to June 2017. A total of 50 patients with unusual morphological skin lesions, with history of steroid abuse were included in our study .Detailed clinical history regarding age, sex, economic status, literacy status, duration and frequency of use of topical steroids, type and formulation of the drug (lotion, cream, ointment, etc.), reason for using the drug and the source of the drug (by dermatologist, non dermatologist, over the counter (OTC) were elicited.

**Table 1:** Age distribution

Age of the patients(in yrs)	Number	percentage
1-15	8	16
15-30	25	50
30-45	17	34

**Table 2:** Type of topical drugs,indications and source of medicine

Parameters	Number	Percentage
Drug		
Clobetasol propionate	12	24
Betamethasone valerate	18	36
Beclomethasone dipropionate	8	16
Mometasone furoate	12	24

Indications		
Facial pigmentation	18	36
Acne vulgaris	12	24
Dermatophytosis	10	20
Scabies	4	8
Others	6	12
Source of drug		
Pharmacist	21	42
Friends, relatives,neighbours and beauticians .	16	32
Non dermatologist	11	22
Dermatologist	2	4

**Table 3:** Dermatological consequences seen in 50 patients with topical corticosteroids abuse

Conditions	Number	Percentage
Acneiform eruptions	22	44
Cutaneous atrophy and striae	15	30
Tinea incognito	10	20
Erythema and telangiectasia over the applied site	10	20
Dyspigmentation	7	14
Pustular eruptions hypertrichosis	3	6

**Results**

The age of the patients included in our study ranged from 1 to 45years (Table 1). About half of the patients were in the age group of 15–30 years. Patients in our study had used the topical steroids for a minimum period of 2 weeks to a maximum period of 3 months in the form of creams, ointments and lotions. The number of applications varied from once daily to twice daily. The type of topical corticosteroids used is summarized in (Table 2). The commonest topical steroid used was betamethasone valerate in 18[36%] patients. The next common were clobetasol propionate and mometasone furoate which were used by 12[24%] patients each and the remaining 8[16%] patients used beclomethasone. Most of the drugs used by the patients were in combination with antibiotics,

antifungal and depigmenting agents. Most patients were ignorant and not aware of the dosage, side effects and mode of application of the drug. The most common indications of topical steroids abuse by the patients themselves was for skin lightening (36%). The other indications were acne [12 patients], dermatophytosis [10patients], scabies [4patients]and other [6 patients]. Some used it for multiple reasons. The source of the drug from where they purchased were assessed. Out of 50 patients, 21[42%]patients purchased the drugs over the counter from medical shops, 16[32%] patients got the drugs from the friends, relatives, beauticians and neighbours, 11[22%] patients were prescribed by physicians and 2(4%) patients by dermatologist. The various dermatological consequences observed in 50 patients were acneiform eruptions 22 (44%) (fig-1), skin atrophy 15(30%)(fig-4), tinea incognito 10(20%) (fig-5), erythema and telangiectasia 10(20%) (fig-2), dyspigmentation 7(14%) and others 3(6%)(fig-3)

**Fig 1** Acneiform eruptions



**Fig-2** Erythema over the face



**Fig 3** Perioral dermatitis after steroid use



**Fig 4** Cutaneous atrophy and striae



**Fig 5** Tinea incognito



**Fig 6** Acneiform eruptions and striae



**Fig 7** Cutaneous atrophy

### Discussion

Abuse of steroids is a common problem faced by dermatologist nowadays. It is easily available at low cost as an over the counter [OTC] drug. Topical steroids have emerged in recent years as major skin lighteners in combination with other depigmenting agents [Kligman's formula]<sup>6</sup>. The steroid abuse is commonly seen in teenage and young adults. In a study by Del Giudice P, Pinier and et al<sup>3</sup> the most common products used were hydroquinone and corticosteroids. In a study conducted by Al-Dhalimi MA et al<sup>7</sup> most topical steroid abusers were in the 10-19 years age group,<sup>7</sup> whereas in our study, we found that most patients were in the 15-30 years age group. These group were more vulnerable because they were more concerned about their appearance. Skin lightening was the main reason for use of this drug (65.7%). 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<sup>4</sup>. The term tinea incognito has been used to describe a dermatophyte infection modified by corticosteroid treatment. Delay in diagnosing this common dermatological skin conditions due to misuse of potent topical steroid, in which lesions are often modified morphologically<sup>5</sup>. The common topical corticosteroids used was the mid potent steroid betamethasone valerate which is the cheapest and freely available one in our country.

### Conclusion

The real problem of steroid abuse is that these drugs are used without the awareness of its serious side effects. They are sold without any medical prescription. Topical steroids should be used cautiously and judiciously. Awareness should be given regarding the indications and its consequences. Avoidance of self medication by over the counter purchase should be stressed upon. While treating children extreme care should be given regarding the selection of potency of topical steroids.

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