



FACIAL ABUSE OF TOPICAL CORTICOSTEROIDS: A CLINICAL STUDY

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ABSTRACT

Background: Misuse of topical corticosteroids over the face is very common and is associated with many adverse effects. Objective: The aim of this study was to ascertain the prevalence, clinical features, cause of misuse and demographics of unjustified use of topical corticosteroids for facial skin.

Methods: This was a prospective study conducted on 200 patients presenting with misuse of TCs daily over face in dermatology O.P.D. of SNMC, Agra. A detailed clinical history regarding age, gender, duration of use of, TCs formulation, cause for using and the source of the drug were noted.

Results: Maximum patients used TCs for 3-6 months, most commonly as fairness cream. Side effects noticed were acneiform eruptions followed by erythema, dyspigmentation, hypertrichosis, etc. Betamethasone Valerate was the most abused topical corticosteroid.

Conclusion: Topical steroids are commonly abused drugs and should be used cautiously and judiciously. Awareness should be given regarding its side effects.

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INTRODUCTION

Topical corticosteroids are one of the oldest and most commonly used medication in Dermatology because of its profound efficacy. Topical Corticosteroids have an important role in wide spectrum of dermatological conditions especially those characterized by hyper proliferation, inflammation and immunological responses (1,2). Misuse of topical corticosteroids is widespread, especially over the face, because of its easy availability as over the counter drugs and provide quick relief of symptoms, which develops confidence in patients to use them a little longer than prescribed. Use of topical steroids on face for a longer period produce side effects like Acne form eruption, dyspigmentation, hypertrichosis, telangiectasea, hypopigmentation and sometimes even atrophy. The aim of this study was to ascertain the prevalence, clinical features, cause of misuse and demographics of unjustified use of topical corticosteroids for facial skin and to aware the general population about it.

MATERIAL AND METHOD

A prospective clinical study was conducted in Outpatient Department of Dermatology, S.N. Medical College, Agra over a period of 6 months (August 2019 - January 2020). In total 200 patients with history of topical use of steroids on face incorrectly for a period >/= 1 month were enrolled in this study after taking an informed consent. A detailed clinical history regarding age, gender, duration of application, type and

potency of the drug ,cause for using the drug and the source of the prescription and reason of continued use were noted.The study was approved by the Institutional Ethical Committee.

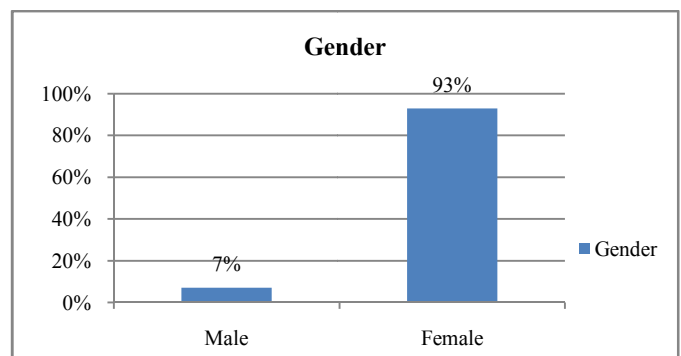
Inclusion criteria : All patients with history of application of topical corticosteroids over face for a period of >/= 1 month for any reason.

Exclusion criteria: Patients not giving Consent or willing to participate in the study, with preexisting morbidity like PCOD, Cushing syndrome, thyroid disorders , preexisting atopic dermatitis, seborrheic dermatitis and contact dermatitis prior to the initiation of steroids and Patients on oral corticosteroids for any reason.

Statistical analysis

Table 1 No. of male and female patients used topical steroid on face.

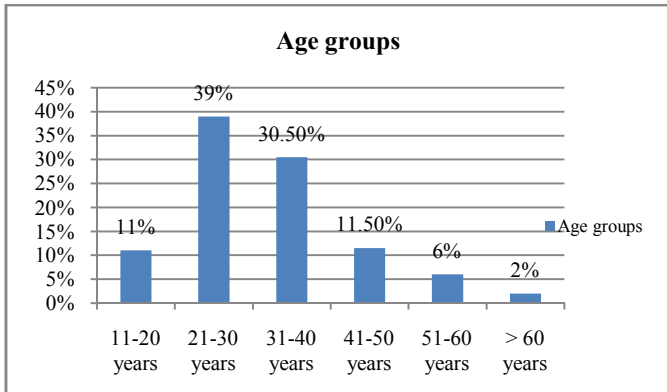
Table with 2 columns: Gender, No of patients (%). Rows: Male 14(7%), Female 186(93%)



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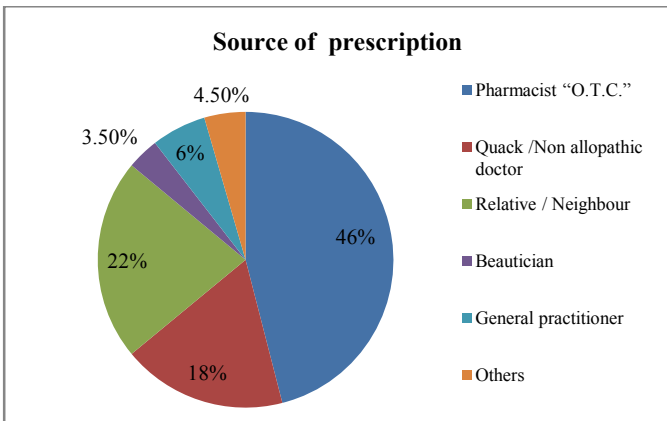
**Table 2** Different age groups used topical steroid on face.

Age group (years)	No. of patients	Percentage %
11-20	22	11
21-30	78	39
31-40	61	30.5
41-50	23	11.5
51-60	12	6
>60	4	2



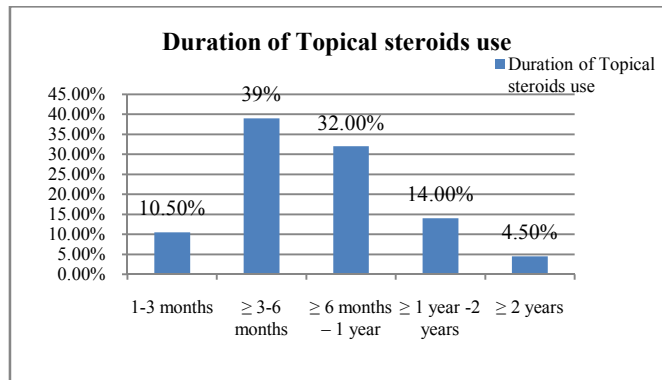
**Table 3** Source of drug prescription/advice

Prescribed by	No of patients (%)
Pharmacist	92 (46%)
Quack /Non allopathic doctor	36 (18%)
Relative / Neighbour	44 (22%)
Beautician	7 (3.5%)
General practitioner	12(6%)
Others	9(4.5%)



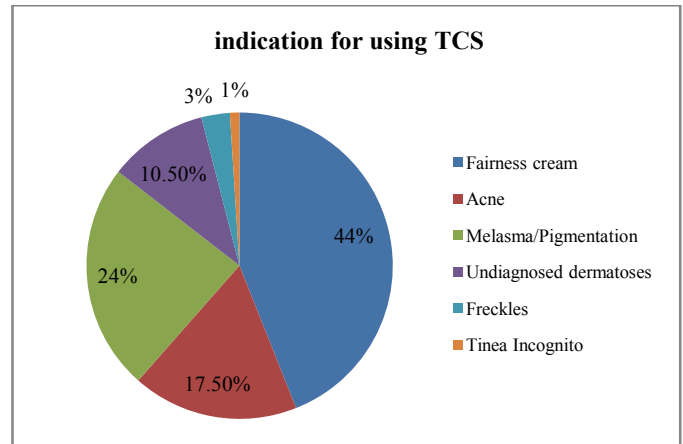
**Table 4** Duration of topical steroids use

Duration of use	No of patients (%)
1-3 months	21(10.5%)
≥ 3-6 Months	78(39%)
≥ 6 months – 1 year	64(32%)
≥ 1 year -2 years	28 (14%)
≥ 2 years	9 (4.5%)



**Table 5** Distribution of patients and indication for its use.

Fairness cream	88(44%)
Acne	35(17.5%)
Melasma/Pigmentation	48(24%)
Undiagnosed dermatoses	21(10.5%)
Freckles	6(3%)
Tinea Incognito	2(1%)



**Table 6** Showing no. of patients with various side effects

Adverse effects after using corticosteroids over face	No. of patients (%)
Acneiform lesions	44(22%)
Erythema	36(18%)
Dyspigmentation	21(10.5%)
Hypertrichosis	30(15%)
Aggravation of existing lesions	22(11%)
Telangiectasias	17(8.5%)
Photosensitivity and burning sensation	12(6%)
Rosacea-like dermatitis	5(2.5%)
Hypopigmentation	7(3.5%)
Perioral dermatitis	4(2%)
Tinea incognito	2(1%)



**Fig 1** Showing acneiform eruptions.



**Fig 2** Showing erythema & telangiectasia



Figure 3 Showing Tinea Incognito



Figure 4 Showing Perioral Dermatitis



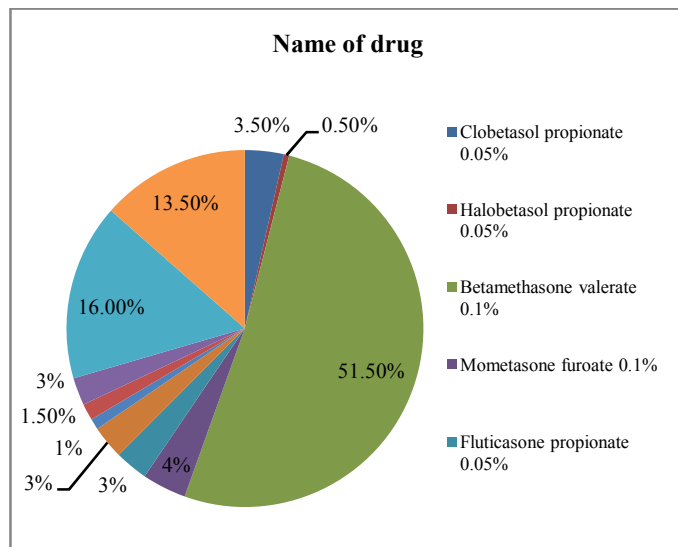
Figure 5 Showing Hirsutism



Figure 6 Showing Dyspigmentation

Table 7 Potencies of various topical steroids used by patients

Potency of steroid preparation	Name of drug	Number of Patients
Very potent steroids	Clobetasol propionate 0.05%	7(3.5%)
	Halobetasol propionate 0.05%	1(0.5%)
Potent steroids	Betamethasone valerate 0.1%	103(51.5%)
	Mometasone furoate 0.1%	8(4%)
	Fluticasone propionate 0.05%	6(3%)
Moderately potent steroids	Clobetasone	6(3%)
	Fluocinolone acetonide	2(1%)
Mildly potent steroids	Hydrocortisone	3(1.5%)
	Desonide 0.05%	5(2.5%)
Mixed Combination	Steroid with hydroquinone, antibacterial and antifungal	32(16%)
	Clobetasole propionate, anti-fungal and anti-biotics	27(13.5%)



RESULTS

Out of total 200 patients, 186 were females and 14 were Males (Table 1). Maximum patients were in the age group of 21-30 years (78 patients) followed by 61 patients in 31-40 years (Table 2). The detailed history about the source from where it was purchased was taken. 92 (46%) patients purchased from pharmacist, 44 (22%) patients from relatives/Neighbour, 36 (18 %) patients had prescription from quack / Non allopathic doctors, 12 (6 %) patients had prescription from general practitioner, in 7 (3.5%) patients prescribed by beauticians and others 9(4.5%) (Table 3).The duration of use of TCs varied widely from 1 month to years, maximum patients (39%) used it for regular 3-6 months than (32%) used it for 6 months – 1 year ( Table 4 ). A total of 88 patients (44%) used TCs as a fairness cream. 35 patients(17.5%) for acne and TC's were used for melasma or pigmentation in 48 patients (24 %); 21 patients (10.5%) for undiagnosed dermatoses, 6 patients (3%) for freckles and 2 patients (1%) for tinea (Table 5). The side effects that was noticed after the use of steroid were acneiform eruptions in 22 % patients, erythema (18%), dyspigmentation (10.50%), hypertrichosis (15%), Aggravation of existing lesions (11%), telangiectesia (8.5%),photosensitivity and burning sensation (6%), Rosasea like dermatitis(2.5%), hypopigmentation(3.5%), perioral dermatitis (2%) and tinea incognito in 1% of the patients (Table 6).TCS of various potencies, either alone or in combination with other agents, were used in all the patients. Steroids of varying potency were used by the patients commonest being Betamethasone Valerate (103 patients - 51.5%) followed by use of topical combination

of Hydroquinone, anti-biotics and anti-fungals (32 patients - 16%) (Table 7).

## DISCUSSION

The discovery of glucocorticosteroids opened new doors for discovery of similar molecules and revolutionised the treatment of various dermatosis. Since then their misuse and abuse has been rampant adding to the burden of steroid related adverse effects [3,4]. In our study females outnumbered males, which was in accordance with other studies [5,6,7-10]. Hameed, Bhat *et al.*, and Saraswat *et al.* reported maximum number of patients in the age group of 21–30 years, our study also shows same [5,8,10]. Skin lightening was the main reason for the use of topical corticosteroids in our study probably due to their potent bleaching action, similar trend was seen in earlier studies [11,12,13]. Acneiform eruptions were the most common side effect encountered in our study, whereas Bhat *et al.* observed steroid-induced rosacea to be the most common [10]. Other side-effects observed in our study included erythema, dyspigmentation, hypertrichosis, Aggravation of existing lesions, telangiectasia, photosensitivity and burning sensation, Rosacea like dermatitis, hypopigmentation, perioral dermatitis and tinea incognito. Most of the subjects were using potent to superpotent TCS in our study, which is going similar with prior studies [14-20]. An alarming trend seen by us was that the maximum number of our patients (58.5%) were using potent steroids and few number of patients (4%) were using very potent steroids. In our study betamethasone valerate was the most commonly abused topical corticosteroid. The main responsibility for the misuse of topical corticosteroids could be attributed mainly to pharmacists (46%) and quacks (18%). We have also noted that Friends and relatives also copy their same prescription and try to self-treat.

## CONCLUSION

Topical steroids are commonly abused drugs and should be used cautiously and judiciously. Awareness should be given regarding its side effects. Over the counter availability of these drugs is a major cause of their abuse. Avoiding self-medication should be stressed upon.

**Limitations:** This was an OPD-based study, therefore, it may or may not accurately reflect the community data.

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