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TOPICAL CORTICOSTEROID MISUSE AMONG PATIENTS ATTENDING DERMATOLOGY DEPARTMENT IN A TERTIARY CARE CENTRE

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Abstract:

Introduction: Topical Corticosteroids (TC) provide prompt symptom alleviation for a variety of dermatological disorders, its unrestricted availability and use by the general public, physicians, and chemists has led to a high prevalence of irrational use of TC in India. **Aim:** To determine the extent of steroid abuse among patients presenting to the Dermatology Outpatient Department and the repercussions thereof in order to increase public awareness regarding the abuse of topical steroids. **Materials and methods:** Cross-sectional observational questionnaire-based study conducted over a period of 6 months. Patients were questioned and assessed for misuse of TCs in terms of indication, dose, frequency, duration and source of recommendation of TC. **Results:** out of 160 participants, out of which 68 were males and 92 were females. most common steroid molecule used by 97 (60.6%) patients was clobetasol propionate. Patients who were using 1-2 tubes has got less adverse reactions and it is found to be

statistically significant ($\chi^2 = 51.734$, $p < 0.001$). **Conclusion:** Misuse of topical corticosteroids has a huge impact on dermatological practice, leading to a significant proportion of visits to the dermatologist. This hydra-headed problem needs multi-dimensional interventions, involving educational, legal and managerial approaches with cooperation from different sectors of society.

Introduction:

In dermatology, topical corticosteroids (TCS) are among the most often recommended drugs. Since the development of "compound F," or hydrocortisone (cortisol), in 1952, they have been used to treat skin conditions for more than 50 years.¹ TCS mediate good clinical outcomes due to their anti-inflammatory, vasoconstrictive, antiproliferative, and immunosuppressive properties as corticosteroids mediate clinical consequences.¹ The common indications are psoriasis, lichen planus, eczema, lichen simplex chronicus, and other steroid-responsive dermatoses.²

Across time, there has been a growing trend of patients and physicians abusing TC. In addition to common indications, general physicians are also using them for conditions like melasma, urticarial, and even undiagnosed skin rash. This is because of the outcome of TC being used in the first instance, which often results in rapid symptomatic relief of many skin conditions. This can help a patient feel more confident with a general practitioner for a little longer.³ Furthermore, research on patients who present with side effects related to steroids has revealed that a number of non-medical advisors, such as friends, neighbours, beauticians, barbers, advise them to use TCs for fairness/cosmetic creams, anti-acne, anti-fungal therapy, and any skin eruptions.⁴ Numerous studies have demonstrated the substantial risk of topical steroid usage by patients, pharmacists, and medical professionals. Patients who are not given appropriate counselling may not come for a follow-up appointment and may take topical steroids for an extended amount of time. In the long run, such inappropriate use might have disastrous local and systemic effects. Dermatologists bear the burden as these

medications are an effective tool in the battle against many skin conditions. It is imperative that we appropriately educate the general public, including the medical community of non-dermatologists, about the moral and sensible use of topical steroids.⁵

The present study was conducted to determine the extent of steroid misuse among patients presenting to the Dermatology Outpatient Department and the repercussions thereof in order to increase public awareness regarding the abuse of topical steroids.

Aims & objectives:

- 1) To find out the magnitude of steroid misuse among the patients attending Dermatology OPD and to find out the consequences associated with it so as to raise awareness about the misuse of topical steroids
- 2) To study about the prevalence of steroid misuse among patients attending dermatology OPD
- 3) To analyse the side effects of topical steroids prevailing among patients with history of misuse of topical steroid.
- 4) To determine the source recommendations/prescription of topical steroids.
- 5) To create awareness among patients about misuse of topical steroids.

Materials and methods:

A facility-based cross - sectional study was conducted from Dec 2022 to May 2023 for the period of six months among out patients coming to Dermatology department in the tertiary care centre. The study was approved by the Institutional Ethical Committee. This study includes patients with any age and sex with a history of topical use of steroids without a dermatologist's prescription for a particular skin condition. Patients with Cushing's syndrome, polycystic

ovarian disease, thyroid disorders and other patients who have co morbidities which resemble adverse effects from topical steroid usage were excluded from the study. The written informed consent was obtained from all the study participants before the data collection. A pilot study was conducted to know if there is confusion about any items, and whether respondents have suggestions for possible improvements of the items. The questionnaire items were revised upon reviewing the results of the preliminary pilot testing. A total of 160 patients were involved in the study. The questionnaire consists of personal information, socio demographic information, a detailed history regarding the duration of application, the type of steroid used, the source of recommendation and the indication for their use followed by a detailed clinical examination with special regard to the adverse effects resulting from topical steroid usage were recorded using a self-designed questionnaire. Past history of topical steroid usage was assessed on the basis of any records available with the patient or with the patient is carrying the medicine with them. Drug misuse is a broad term used to describe different types of substance use. Specifically, it describes someone who uses a legal or prescribed medication in a way that was not directed. Signs of drug misuse include taking a dose at the wrong time, missing a dose, stopping medication sooner than recommended (and without doctor approval), using medication not prescribed to you, using a drug for a reason other than its intended purpose.⁶

Data collected was coded and entered in MS Excel sheet and then analysed using SPSS software and expressed in percentages.

RESULTS

A total of 160 participants were interviewed and analysed for the study. Out of which 68 were males and 92 were females. 48 (30%) of the participants were graduates, and 37 (23.1%) were professionals, 56 (35%) of them were aged between 21 to 30 years.

TABLE 1: SOCIO DEMOGRAPHIC CHARACTERS OF STUDY PARTICIPANTS

SOCIO DEMOGRAPHIC VARIABLES	FREQUENCY NO (%)
AGE (in Years)	
<20	20 (12.5%)
21-30	56 (35%)
31-40	37 (23.1%)
41-50	26 (16.3%)
51-60	16 (10%)
>60	5 (3.1%)
GENDER	
Male	68(42.5%)
Female	92 (57.5%)
EDUCATION	
Illiterate	16 (10%)

Primary school	25 (15.6%)
Secondary school	46 (28.8%)
Graduate	48 (30%)
Post graduate	25 (15.6%)
OCCUPATION	
Daily wage labourer	18 (11.3%)
Clerical work	24 (15%)
Professional	37 (23.1%)
Farmer	5 (3.1%)
Self employed	23 (14.4%)
Student	26 (16.3%)
Home maker	27 (16.9%)
MARITAL STATUS	
Married	93 (58.1%)

Unmarried	62 (38.8%)
Separated/Divorced	5 (3.1%)

The most common steroid molecule used by 97 (60.6%) patients was clobetasol propionate [Fig 2]. The number of corticosteroid applications varied from less than a month to more than a year [Table 3]. 33.8% patients were using topical steroid creams recommended by pharmacist followed 29.4% by family friends and neighbour respectively [Fig 1]. 92 (57.5%) of the patients were using steroids for the condition of tinea followed by acne 33 (20.6%). The most common adverse effect seen in the study was exaggeration of existing lesion followed by combination of more than three reactions like altered pigmentation, photosensitivity, erythema.

TABLE 2: INDICATION FOR WHICH STEROID WAS USED

Indication	Frequency	Percent
Acne	33	20.6
Acne, pigmentation	2	1.3
Tinea	92	57.5
Scabies	5	3.1
Scabies, pigmentation	3	1.9
Scar	23	14.4
Other conditions	2	1.3
Total	160	100.0

FIGURE 1: SOURCE OF PRESCRIPTION OF STEROIDS

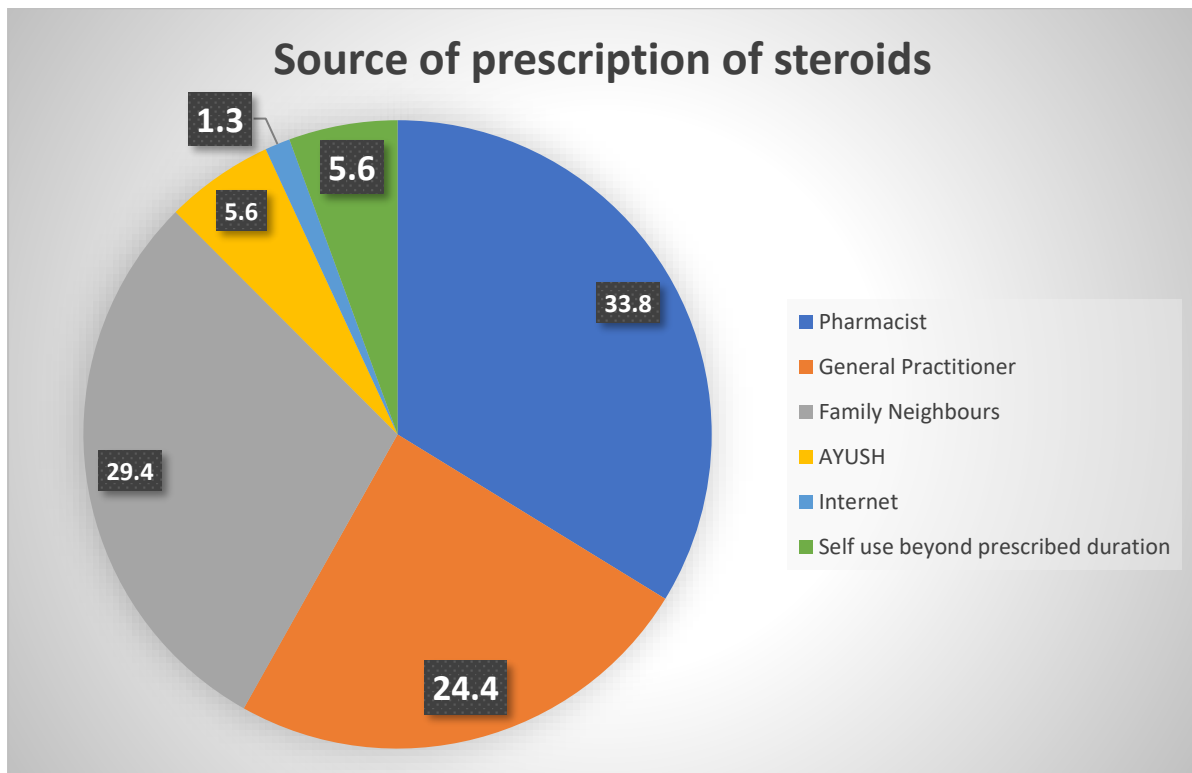


Fig 2: TYPES OF STEROIDS WAS USED

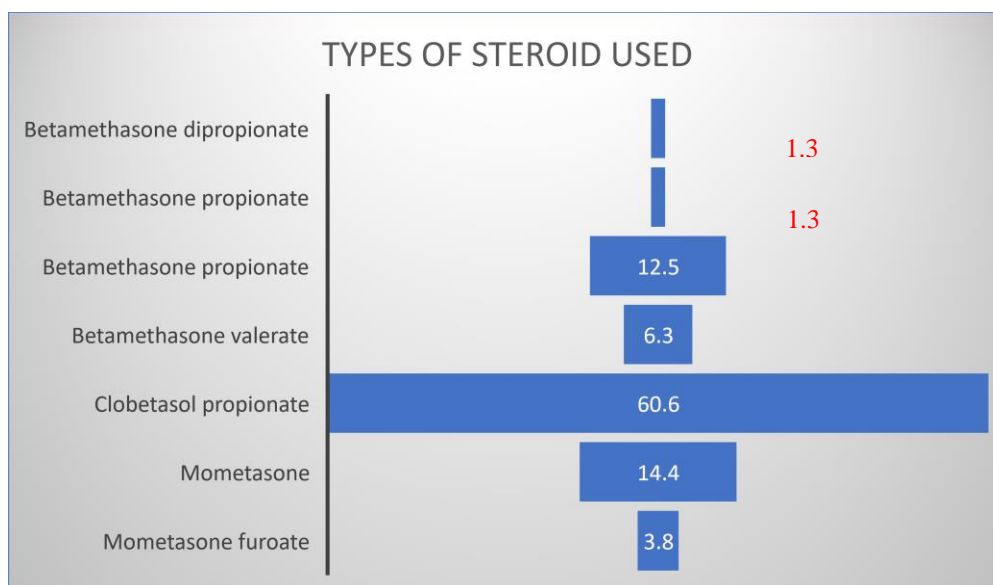


Fig 3: Severe seborrheic dermatitis and melanosis Fig 4: Tinea corporis after steroid abuse



Fig 5: Comedones after steroid abuse



Fig 6: Tinea concentricum



TABLE 3: DURATION OF STEROIDS WAS USED

Duration	Frequency	Percent
< 1 Month	37	23.1
1 Month – 6 Month	79	49.4
6 months – 1 year	29	18.1
> 1 year	15	9.4
Total	160	100.0

TABLE 4: CHI SQUARE ASSOCIATION BETWEEN DURATION OF USE OF TC AND NUMBER OF ADVERSE REACTION

Duration of use	Adverse reaction in number			Chi square value	P Value (Fishers exact)
	1-2	3-4	>4		
< 1 month	31	6	0	124.328	<0.001***
1 month – 6 months	46	33	0		
6 month – 1 year	9	19	1		
>1 year	0	4	11		

TABLE 4: CHI SQUARE ASSOCIATION BETWEEN NUMBER OF CS TUBES USED AND NUMBER OF ADVERSE REACTION

No of tubes used	Adverse reaction			Chi square	p-value (Fishers exact)
	1-2	3-4	>4		
1	31	10	0	51.734	<0.001***
2	33	31	0		
3	16	17	6		
4	4	2	6		
5	2	2	0		

In the present study, chi square association has been done with duration of steroid creams used with number of adverse reactions and also with number of tubes used and number of observations. patients who had been using steroids creams for more than one year has more than four adverse reactions like exaggerated existing lesions, altered pigmentation, photosensitivity, erythema and it is found to be statistically significant ($\chi^2 = 124.328$, $p < 0.001$). Patients who were using 1-2 tubes has got less adverse reactions and it is found to be statistically significant ($\chi^2 = 51.734$, $p < 0.001$).

DISCUSSION

The chief seduction of TC lies in the rapidity of symptomatic relief in almost many dermatological conditions. This often makes the physician to reverse the

natural order of diagnosis followed by treatment. The problem is worsened when a patient is able to easily get an indefinite number of topical corticosteroids from a single prescription by local pharmacist, leading to the production of adverse effects and, sometimes, dependence or addiction to TCs. This is a situation faced by dermatologists in many countries, In India, the problem is even more complex, wherein anyone can easily get a high degree corticosteroid without the need to get it prescribed by a physician. Moreover, TCs have acquired a reputation as antiacne, antiblemish and fairness creams in the general population, especially in countries with darker-pigmented races.⁷

The adverse effects are directly related to the potency of topical corticosteroids and have become more prevalent with the introduction of high potency topical corticosteroids. These include effects on the epidermis and the dermis in addition to those resulting from their systemic absorption.⁸

Hameed AF reported maximum number of patients in the age group of 21–30 years, which was similar to our present study, next to tinea, acne was the most common indication of steroid application, hence, the predominance of younger age group in our study.⁹

Chronic use of TC often produces numerous side effects including steroid dermatitis, erythema which at times become difficult to distinguish from rosacea. Adverse effects are usually seen after 6 months or more of continuous use of steroids but it can vary with potency.¹⁰

TC is used primarily for their anti-inflammatory properties¹¹. However, their inappropriate use can lead to multiple local side effects including atrophy, striae, telangiectasis, purpura, hypo-pigmentation, acneiform eruptions, rosacea-like perioral and periorbital dermatitis, and hypertrichosis¹², if used in inappropriate indications, they may modify the clinical picture of the disease, altering the normal presentation thus, masking diagnosis and make further treatment more difficult, as is seen in case of tinea incognito, the study done by Mahar S, Mahajan K, et al. tinea was the most common adverse effect found, which was similar to

our present study, but the proportion of patient using steroid in that study was 26% which was lesser when compared with our present study 57.5% Emergence of facial acne was another major effect of misuse of TC 25.6%, which was slightly higher than our present study 20.6%.

Cross sectional study was conducted in tertiary care centres among 300 patients, their common source of information about topical corticosteroids among were physicians 38.9%, followed by pharmacists 30.3%, friends 11.1%¹³, but in our present study source of prescription were pharmacist 33.3%, family and neighbours 29%, general physician 24.4%, hence the availability of corticosteroids were easy and misuse can happen very frequently.

CONCLUSION

The results showed that this topical drug is most often used in conditions where it should be avoided, thus leading to various untoward effects. Lastly, general practitioners or physicians are still the first point of contact for most of the patients in India; hence, training and sensitizing them would definitely help to control the abuse of topical corticosteroids by health care professionals.

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