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ORIGINAL RESEARCH

TOPICAL CORTICOSTEROIDS MISUSE IN DERMATOLOGY OUTPATIENTS: A CROSS SECTIONAL STUDY IN TERTIARY HOSPITAL IN CENTRAL INDIA

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Abstract

Background: In modern dermatologic therapy, Topical Corticosteroids (TCS) are commonly used therapeutic agents. Misuse and prolonged use of TCS without medical supervision results in adverse effects such as acneiform eruption, hypertrichosis, pigmentation, and steroid addiction.

Objective: To determine the awareness among OPD patients about commonly available TCS preparations and their side-effects and the source of recommendation of TCS.

Materials and methods: The study was conducted for a period of six months in a tertiary care centre of Madhya Pradesh. A pre-designed questionnaire was filled according to the information given by patients about their current use of topical formulations and confirmed TSDF cases were included in the study.

Results: A total of 3100 patients with facial dermatoses were screened of which TCS were used by 1740 (56.12 %). In terms of TCS usage, females outnumbered males.Melasma was the most common adverse effect in 483 (27.8 %) of patients, followed by comedonal acne in 457 (26.3 %). Betamethasone valerate 0.1 % was the most commonly misused compound by 520 patients (33.20%).

Conclusion: Corticosteroids are among the commonly prescribed topical medications. Every health-care personnel along with pharmacist should take some responsibility to educate the people about side effects of unsupervised and prolonged use of TCS.

Keywords: Topical Corticosteroids, Topical steroid dependent faciei, misuse of topical corticosteroid, over the counter drug.

Introduction

In modern dermatologic therapy, topical corticosteroids (TC) are the most commonly used therapeutic agents. Sulzberger and Witten introduced the first topical corticosteroid, compound F (HYDROCORTISONE), in 1952, ushering in a new era in therapeutic dermatology.[1] Since then, a variety of steroid molecules with varying potencies, from

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super-potent to those with the least potency, have been developed, making the treatment of many inflammatory dermatoses possible.[2]

Corticosteroids have anti-inflammatory, immunosuppressive, antipruritic, and melania protective properties. TCS, while extremely beneficial, have proven to be two-edged swords. They have been abused to varying degrees by pharmacies and pharmaceutical companies, prescribers (who are not always doctors or dermatologists), and the general public. [3] The face is the most common site of such misuse, with the resulting steroid addiction. [4]. Red face syndrome is a condition in which any attempt to discontinue the use of TC on the face after a long period of use results in rebound erythema, burning, and scaling on the face. This condition is also referred to as "Topical steroid damaged/dependent face" (TSDF). TCS is applied to the face as if it were a miracle compound, with the expectation that it will correct any flaw or imperfection. In the Indian market, various corticosteroid molecules ranging in potency and activity from mild to super-potent are available for topical use on the skin. These molecules are marketed by thousands of pharmaceutical companies under a variety of brand names. Misuse and prolonged use of the medicine without medical supervision results in steroid rosacea, acneiform eruption, hypertrichosis, demodicidosis, steroid addiction, and red-face syndrome[5].

Materials and methods

This cross-sectional study was conducted from June 2021 to November 2021, at the Outpatient Department of Dermatology of a tertiary care hospital in Bhopal, Madhya Pradesh. The patients with relevant facial dermatoses such as facial erythema, papular eruption, acneiform eruption, unwanted facial hair, and complaint of facial burning sensation were studied. Patients were asked about the topical formulations they were currently using. We classified a patient as a TSDF if we discovered that used creams/ointments contained any form of TC and also asked the patient about his or her knowledge of TC used. We attempted to determine the contents of the cream/ointment by asking or inspecting the prescription or used tube. We divided the patients into 8 different age groups. They were questioned using a pre-designed questionnaire, which helped determine demographic factors, the underlying cause of taking TC, prescription source, and TC side effects.

Inclusion criteria

- Participants or their guardians who signed an informed consent.
- Patients of both sexes who were at least 2 years old.

Exclusion criteria

- Patients who refused to give consent.
- Patients on oral steroids, and who had comorbidities such as polycystic ovarian syndrome/thyroid disorder/Cushing's disease
- Pregnant or breastfeeding females.
- Infants under the age of two.

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Supplementary image 1: Diffuse erythema over face after applying TCS for 8 months.

Supplementary image 2: Comedonal acne after applying TCS for 1 year.

Supplementary image 3: Erythema, melasma and hypertrichosis after applying TCS for 9 months.

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Supplementary image 4: Red face syndrome– diffuse erythema, telengectasia, acneiform eruption after applying TCS for 2 years.

Result

A total of 3100 patients with facial dermatoses were screened, with the TCS being used by 1740 (56.12 %). In our study, the duration of continuous usage of these creams ranged from two weeks to two years. In terms of topical steroid use, females outnumbered males. TCS was used by the majority (30.17 percent) of young adult females aged 30 to 39, with TCS users aged 20 to 29 coming in second (25.80 percent) [Table 4].

The most common concern of five hundred and eleven patients was hyperpigmentation on the cheeks, nose, or forehead (29.4%), for which they used TCS. Four hundred seventy-one patients used TCS (27.1%) for cosmetic purposes, three hundred ninety-six patients(22.8%) for facial itching treatment, and two hundred fifty-one (14.4%) for acne treatment[Graph 2].

Six hundred forty-seven (37.2%) patients purchased over the counter medications on the recommendation of a pharmacist and Quacks (23.9%) prescribed the TCS. TCS was prescribed by doctors (other than dermatologists) for a variety of facial dermatoses (20.8 percent). About 18.1% of patients were using TCS as suggested by some friends or relatives who were also using the same [Table 1].

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Melasma was the most common adverse effect found in 483 (27.8 %) of patients, followed by comedonal acne in 457 (26.3 percent).

Patients experienced overlapping side effects such as photosensitivity (13.1%) and hypertrichosis (5.5%) in addition to allergic contact dermatitis (10.3 %).

Melasma aggravation was reported by 73 patients (4.2 percent) and tinea faciei by 83 patients (4.8 %) [Graph 1]. Betamethasone 0.1 % was the most commonly misused medication by 520 patients (33.20%), followed by Clobetasol 0.05 % (26.40 %), a triple combination by 394 patients (25.10 %), and a combination of clobetasol 0.05 %. Clioquinol 1%, Ketoconazole 1%, and Gentamicin 0.1 % were used by 15.30% of patients [Table 2].

36.40 percent of patients misused TCS for two weeks to one month, followed by 24.9 percent for three months to six months, 18.40 percent for one month to three months, 15.60 percent for six months to one year, and 4.70 percent for more than one year [Table 3].

Table 1: Source of recommendation of Topical corticosteroids

Source of recommendation		
Source	**Number of patients**	**Percentage**
Doctors Other Than Dermatologist	362	20.8%
Pharmacist	647	37.2%
Quack	416	23.9%
Friends/ Relatives	315	18.1%

Table 2: Different Topical Coritosteroids

Topical Coritosteroids	No	Percentage
Betamethasone 0.1%	520	33.20%
Triple Combination-(Hydroquinone 4%, Tretinoin 0.05%, Momatasone Furoate 1%)	394	25.10%
Clobetasol 0.05%	414	26.40%
Combination Of Clobetasol 0.05% Clioquinol 1% Ketoconazole 1% Gentamicin 0.1%	239	15.30%

Table 3: Duration of Topical corticosteroid use

Duration Of Topical Corticosteroid Use	Percentage
2 Weeks - 1 Month	36.40%
1 Month - 3 Months	18.40%
3 Months - 6 Months	24.90%
6 Months - 1year	15.60%
> 1 Year	4.70%

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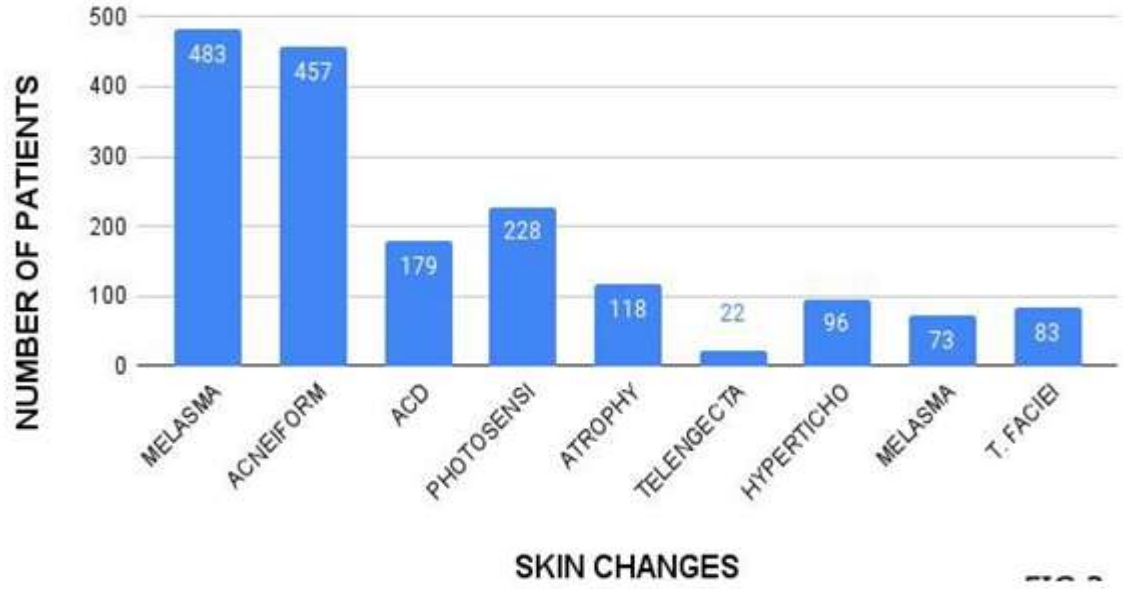
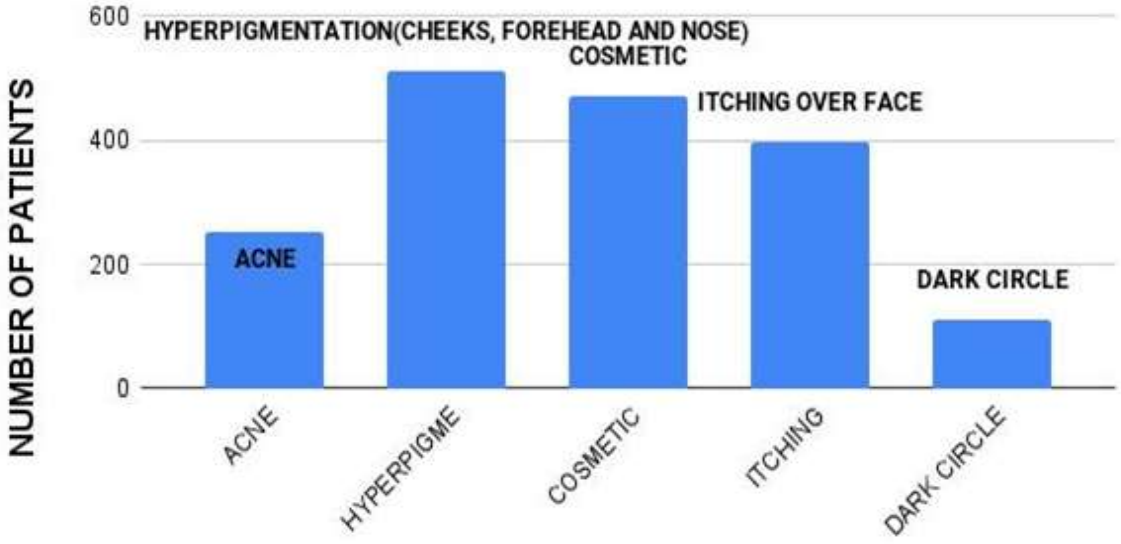
Table 4: Gender wise Distribution among Different a age groups

Age Group	Male	Female
2- 9	9	14
10 - 19	95	82
20 - 29	128	321
30 - 39	105	420
40 - 49	69	251
50 - 59	23	72
60 – 69	105	23
70 - 100	-	23

Graph 1: Local Side Effect of Prolong Use



Graph 2: Underlying causes for Topical Corticosteroid



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Discussion

Topical corticosteroids are among the commonly prescribed medications. Years of widespread overuse and abuse in the face have led to several symptoms and signs such as dryness, burning, itching, and rebound erythema, known as a topical steroid-damaged/dependent face (TSDF). [6][7]. TSDF is a stumbling block for both the patient and the treating dermatologist. [8].

In our study, a total of 3100 patients with facial dermatoses were screened, with the TCS being used by 1740 (56.12 %) and the duration of continuous usage of these creams ranged from two weeks to two years.In a similar study by Jha AK et al, pharmacists or their staff had recommended use of topical steroids to 176 patients (42.9%), which raises serious concern. In India there should be a regulation of dispensing TCs and should only be given based on doctor's prescription. Strict regulation regarding only prescription-based dispensing of TCs must be put into practice[9].

One of the new emerging concerns is its use as a fairness cream as in our study the most common concern of five hundred and eleven patients was hyperpigmentation on the cheeks, nose, or forehead (29.4%), for which they used TCS. Similarly, in a study by Dey VK, the main reason for using the topical corticosteroids was to lighten skin color and treat melasma and suntan [10]. Another study by Meena S et al, revealed that the abuse of TC, particularly the superpotent and potent, is rampant among general population, irrespective of the literacy status. People use TC for various wrong indications such as infection, infestation, acne, and also as fairness creams [11].Moreover, another study by Mahar S et al reported that topical steroid misuse is rampant in Indian society and fault lies at all levels-patient, doctors, pharmaceutical companies, chemists and the regulatory authorities which further leads to significant morbidity and psychological distress as usually the face is affected which is the prime site of aesthetics and thus a major cosmetic concern. Sensitization at all the levels and a coordinated approach is the need of the hour[12].

When a patient can readily receive a refill of a single prescription from a local chemist, even without a prescription, the problem is amplified, eventually leading to undesirable consequences, dependency, or addiction to TCS. In our study, nearly every patient who took these combinations did so on the advice of someone other than a doctor.Continuous education of clinicians about potentially harmful effects of TC and reporting these adverse effects to regulatory health agencies, along with ensuring strict regulation of TCs sale OTC, mass awareness, and warning people not to fall prey to tall and spurious claims by advertising agencies are some of the important strategies to overcome the epidemic of steroid abuse [11].

Conclusion

TCS misuse in patients with facial dermatoses is still quite common after extensive efforts to increase awareness among the population. A reason may be the awareness program is not reaching the ground level, and it needs government participation along with dermatologists. Every health-care personnel along with chemists should take some responsibility to reduce the use of unsupervised and prolonged use of TCS.

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