



IRRATIONAL USE OF TOPICAL STEROIDS FOR FACIAL DERMATOSES- A PROSPECTIVE STUDY.

Dermatology

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ABSTRACT

Background: Topical corticosteroids (TCs) are potent anti-inflammatory medications that provide rapid symptomatic relief. Over-the-counter (OTC) availability of TCs and their unsupervised usage are responsible for various cutaneous adverse effects like rosacea, acneiform eruptions, demodicosis, etc. These are more pronounced over the face as the skin is relatively thin and sensitive. They are more difficult to treat and cause much more distress to patients than the primary conditions for which TCs were used. **Aim:** To ascertain the demographics, frequency, duration, underlying conditions, and the cutaneous adverse effects of misuse of TCs over face in a tertiary care center in Krishna district. **Materials & Methods:** This was a prospective, observational, cross-sectional study done in a tertiary care center over a span of three months. Data was obtained from a self-constructed questionnaire, entered using MS Excel, and analyzed. **Results:** A total of 72 patients with cutaneous adverse effects following TCs abuse over the face were included in a span of three months. Most of them were females (80.56%) and the common age group was 19-28 years (47.22%). The commonest source of recommendation for TCs was- OTC without prescription (70.83%) and the average duration of usage was 1-6 months. The common underlying condition for which TCs were misused was complexion improvement (38.89%), followed by infection, and acne. The commonest adverse effects were pruritus (90.28%) and acneiform eruption (63.89%). The other adverse effects include irritation, spread of infection, topical steroid-dependent face (TSDF), altered morphology of existing lesions, etc. **Conclusion:** TCs misuse over face is being increasingly recognized as the cause for difficult-to-treat facial dermatoses. It can be addressed by increasing awareness about their adverse effects and by giving specific treatment based on the underlying condition.

KEYWORDS

Topical corticosteroids misuse, acneiform eruption, TSDF.

INTRODUCTION:

In 1952, Sulzberger and Witten introduced topical corticosteroids (TCs), which are considered a turning point in dermatology.¹ They are potent anti-inflammatory agents that provide quick relief of symptoms in nearly all inflammatory dermatoses. They additionally have other clinically important properties like antipruritic, immunosuppressive, melanopenic, etc.² Hence, it is one of the most commonly prescribed topical drugs, which has been in use since many decades till date.³ Topical steroids are often mistakenly thought of as skin-lightening agents, and the obsession to have fairer skin has led to their misuse. This unscientific and potentially dangerous therapy is responsible for various adverse effects as the skin is relatively thinner and more sensitive over the face. Because all these products are readily available without a prescription in India, the issue is significantly worse.²

The most common facial dermatoses due to TCs abuse include steroid acne, rosacea, acneiform eruptions, hypertrichosis, and demodicosis. Another different yet important adverse effect noted on the face includes rosacea-like dermatitis which has been described by various authors.² "Topical steroid damaged/dependent face (TSDF)", which is also called "Red face syndrome", is a condition where any attempted cessation of the application of TC on the face after prolonged use, leads to rebound erythema, burning, and scaling on the face.³ These conditions are not only more difficult to diagnose and treat, but also cause much more distress to the patients than the primary conditions for which TCs were misused.⁴

Different corticosteroid molecules, ranging in potency from low to high, are available for topical application in the Indian market. TCs of higher potency are more commonly misused and mainly on the softer areas of the body like the face.³ The situation is further complicated by the indiscriminate dispensing of medicines OTC without any prescription. The abuse of TCs is well recognized and has been the focus of investigations primarily in African⁵ and Asian⁶ nations. Developed countries like the USA are also facing a similar problem.⁷ A few case series from India have recently been published on this issue.^{8,9,10}

In this study, we tried to find out the demographic pattern, frequency, duration, and type of TCs used, underlying conditions for which TCs were misused, source of recommendation, and the common side effects of TC misuse over the face.

METHODS:

This was a prospective, observational, single-center, cross-sectional study conducted over a period of 3 months in the Department of Dermatology, Venereology, and Leprosy in a tertiary care center in Krishna district. The Institutional Ethics Committee clearance was obtained before starting the study and written informed consent was obtained from the participants or their guardians before enrolment. Over a 3-month period from June 2022 to September 2022, all the patients attending the dermatology outpatient department with complaints pertaining to face; with a history of application of topical steroids over the face for unwarranted indication, undiagnosed dermatoses, improper potency, and usage beyond the prescribed duration, and with age more than or equal to 16 years, were included in this study. Patients who could not recall the topical agent used, those not giving consent, and those who were using topical steroids for appropriate indications under the supervision of a dermatologist were excluded from this study. Data was collected using a self-constructed questionnaire which included a socio-demographic profile, detailed history regarding the underlying problems, potency/type, frequency, duration, and adverse effects of topical steroid application. Data collected was entered using MS Excel and analyzed using IBM SPSS and descriptive statistics will be used in evaluating the data.

RESULTS:

A total of 72 out of 194 cases with facial dermatoses with topical steroid abuse were included in this study which was done in a span of 3 months, after satisfying the inclusion and exclusion criteria.

Table 1 shows the demographic distribution of the study population, where the commonest age group was 19-28 years (47.22%), followed by 29-38 years (26.39%). Most of the study subjects were female (80.56%), and most of the subjects belonged to the married group (83.33%). In this study, most of the subjects were household

workers/maids (26.39%), followed by housewives (22.22%), and students (16.67%). Almost 54.17% of subjects belonged to urban areas in this study. The study subjects were divided into 3 groups as uneducated, grade 1-12, and highly educated, of which most of them belonged to studied till grade 1-12 group (45.83%), followed by uneducated group (30.56%).

Table 1: Demographic Data of this study.

Name of the Variable	Classification	Frequency	Percentage (%)
Age	19-28	34	47.22%
	29-38	19	26.39%
	39-48	13	18.06%
	49-58	6	8.33%
Sex	Male	14	19.44%
	Female	58	80.56%
Occupation	Student	12	16.67%
	Farmer	4	5.56%
	Housewife	16	22.22%
	Maid/household worker	19	26.39%
	Nurse	5	6.94%
	Receptionist	4	5.56%
	Software	6	8.33%
	Teacher	6	8.33%
Residency	Rural	33	45.83%
	Urban	39	54.17%
Educational Status	Uneducated	22	30.56%
	Grade 1-12	33	45.83%
	Highly Educated	17	23.61%
Marital Status	Married	60	83.33%
	Unmarried	12	16.67%

The common underlying problems for which topical steroids were misused were complexion improvement (38.89%), infection (26.39%), and acne (19.44%) [Table 2].

Table 2: Distribution of subjects based on the underlying problem.

Study Variables	Classification	Frequency	Percentage (%)
Underlying Problem	Acne	14	19.44%
	Complexion improvement	28	38.89%
	Infection	19	26.39%
	Melasma	5	6.94%
	Other facial hyperpigmentation disorders	1	1.39%
	Tan	5	6.94%

Most (55.56%) of the patients were using high potent steroids. Nearly 55.56% of subjects had a history of twice daily application. The percentage of patients using combination cream (combination of steroids, antifungals & antibiotics) (65.28%) was more than those using steroid-only cream (34.72%).

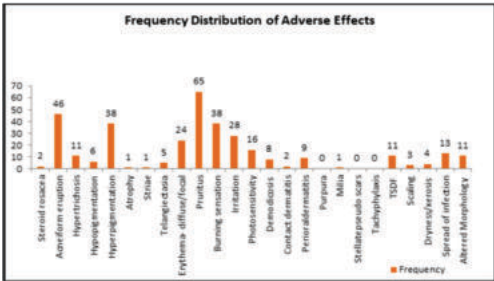
We divided the subjects based on the duration of application into 3 groups as one month, 1-6 months, and >6 months. Most of them (58.33%) belonged to the 1-6 months duration of application group.

The most common adverse effect in the study patients was pruritus (90.28%), followed by acneiform eruption (63.89%), hyperpigmentation (52.78%), and burning sensation (52.78%). The other adverse effects seen were irritation, erythema, photosensitivity, spread of infection, TSDF, hypertrichosis, altered morphology of existing lesions, perioral dermatitis, demodicosis, hypopigmentation, telangiectasias, xerosis, scaling, steroid rosacea, contact dermatitis, milia, striae, and atrophy [Table 3] [Graph 1].

Table 3: Distribution of adverse effects in the study subjects.

Study Variables	Classification	Frequency	Percentage (%)
Adverse Effects	Steroid rosacea	2	2.78%
	Acneiform eruption	46	63.89%
	Hypertrichosis	11	15.28%
	Hypopigmentation	6	8.33%
	Hyperpigmentation	38	52.78%
	Atrophy	1	1.39%

Striae	1	1.39%
Telangiectasia	5	6.94%
Erythema- diffuse/focal	24	33.33%
Pruritus	65	90.28%
Burning sensation	38	52.78%
Irritation	28	38.89%
Photosensitivity	16	22.22%
Demodicosis	8	11.11%
Contact dermatitis	2	2.78%
Perioral dermatitis	9	12.5%
Purpura	0	0%
Milia	1	1.39%
Stellate pseudo scars	0	0%
Tachyphylaxis	0	0%
TSDF	11	15.28%
Scaling	3	4.17%
Dryness/xerosis	4	5.56%
Spread of infection	13	18.06%
Altered morphology	11	15.28



Graph 1: Frequency distribution of adverse effects in the study subjects.

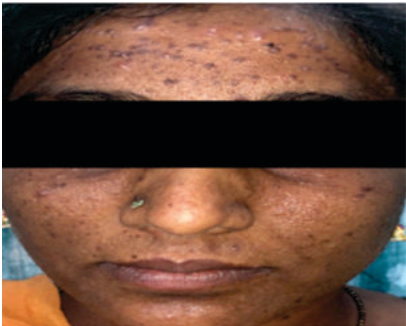


Figure 1: Acneiform eruption after prolonged usage of topical steroids.



Figure 2: Hyperpigmentation after prolonged usage of topical steroids.



Figure 3: Steroid-modified Tinea faciei.



Figure 4: TSDF (Topical Steroid-Dependent Face) with diffuse erythema after prolonged usage of topical steroids.

DISCUSSION:

The increasing urge of getting a fairer complexion in a dark-skinned country like ours, pushes people to try every product which promises to do so without consulting a dermatologist. In India, the problem is even more common because all these products are easily available without prescription and also people here rely more on non-experts' (like relatives and pharmacists) advice.

Steroid-containing combination creams are used as an all-in-one treatment for all skin conditions for instant relief of symptoms, without paying heed to their adverse effects. Despite the widely perceived enormity of the problem, to our knowledge, only a few studies have been done on this problem in India, and no such studies were done in the Krishna district previously.

In this study most (80.56%) of the patients misusing steroids were female, and the male-to-female ratio was 1:4.14, while according to a study done by Meena et al.¹¹, males (62.70%) outnumbered females (37.30%), and the male to female ratio was 1.68:1. In the studies done by Pal et al.³, and Manchanda et al.¹², females outnumbered males (similar to our study).

The most common age group of this study is 19-28 years (47.22%), similar to the study done by Pal et al.³, where the common age group was 20-29 years (37.10%). According to Hameed¹³, Bhat et al.¹⁴, and Saraswat et al.¹⁵, a maximum number of subjects were in the age group of 21-30 years.

A majority of the subjects in this study belonged to urban areas, similar to the study done by Manchanda et al.¹².

In this study, most of the subjects belonged to the married group (83.33%). Most of the study subjects belonged to the studied till grade 1-12 group (45.83%), followed by the uneducated group (30.56%).

A majority (70.83%) of the subjects were procuring the TCs from over-the-counter (OTC) in this study while according to Pal et al.³ study, 39.85% of patients bought medicine from OTC at the recommendation of a pharmacist.

In this study, most of the subjects were misusing TCs of high potency type, for a duration of 1-6 months, and at a frequency of twice daily application.

The common underlying problems for which TCs were misused in the present study were improvement of complexion (38.89%), followed by infection (26.39%), acne (19.44%), etc. In a study done by Manchanda et al.¹², most of the patients were using TCs for acne.

The most common adverse effect in the study patients was pruritus (90.28%), followed by acneiform eruption (63.89%), hyperpigmentation (52.78%), and burning sensation (52.78%). The other common adverse effects seen in this study were irritation, erythema, photosensitivity, spread of infection, TSDF, hypertrichosis, altered morphology of existing lesions, perioral dermatitis, etc. Pruritus was the most common side effect encountered in the study done by Manchanda et al.¹², followed by other side effects such as acneiform eruptions, rosacea, and telangiectasia.

Limitation of the study:

The duration of the study was less which led to a smaller number of reported cases.

CONCLUSION

Topical corticosteroids misuse over the face is being increasingly recognized as the cause of difficult-to-treat facial dermatosis. The misconception of topical steroids as skin-lightening agents, considering TC as an all-in-one treatment option for any facial dermatoses irrespective of the cause, and relying on non-experts and unqualified persons led to the misuse of TCs. This misuse of TCs can be addressed by increasing awareness about their adverse effects among the general population and doctors, and by giving specific treatment based on the underlying condition.

Declaration of patient consent:

Consent was taken through appropriate patient consent forms, which included consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their initials and names won't be published, and that every attempt will be made to keep their identities hidden, but anonymity cannot be guaranteed.

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Conflicts of interest: Nil

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