

Study of Clinical Profile of Patients Presenting with Topical Steroid-Induced Facial Dermatoses to a Tertiary Care Hospital

Abstract

Background: Topical corticosteroids (TCs) are widely used for various indications in dermatology. However, these can cause a plethora of symptoms if overused or abused. Topical steroid damaged face is a relatively new entity which was described in 2008. TC abuse cause a myriad of side effects viz, erythema, telangiectasia, acne, acneiform eruption, hyper/hypopigmentation, rosacea, and photosensitivity when used inappropriately. **Aim:** The aim of the study was to ascertain the prevalence, demographics, and clinical presentations of TC abuse on face among our population. **Materials and Methods:** This was a cross-sectional study performed at dermatology department of a tertiary care teaching hospital located in eastern India for 1 year. All patients with facial dermatoses attending the outpatient department were asked about use of TC in recent past and those with positive history were included. A detailed clinical evaluation was undertaken and various demographic and clinical data were recorded. **Results:** A total of 316 patients (53 males, 263 females) presented with topical steroid-induced facial dermatoses during the entire study period. Majority of them used these agents on suggestion of close friends and relatives, pharmacists, television commercials, and doctors. Mometasone in the form “No-Scar” preparation was the most commonly abused topical steroid in our study. The most common side effects encountered were steroid-induced acne (45.2%) or flare of pre-existing acne followed by erythema and telangiectasia (21.2%), hypertrichosis (6.6%), rosacea (2.2%), and atrophy (1.5%). The most common reason for abusing TC was to get a fairer skin tone. **Conclusion:** Our study reports the clinical patterns of TC abused facial dermatoses. The fantasy to get a fairer skin among the people of our country has led to the abuse of topical corticosteroids. We conducted this study to create awareness among these patients about the dreadful effects of steroid misuse.

Keywords: Steroid misuse, topical corticosteroids, topical steroid damaged face

Introduction

The introduction of topical corticosteroids (TCs) by Sulzberger and Witten in 1952 is considered a landmark in the treatment therapy in dermatology.^[1] TCs are potent anti-inflammatory medications and provide symptomatic relief in many dermatological conditions. Apart from this anti-inflammatory property, they possess additional clinically valuable properties like antipruritic, immunosuppressive, and melanopenic, etc.^[2] These are available in the form of creams, ointments, gels, solutions, and various other vehicles. However, this effective drug has been frequently abused by ignorant users. This irrational use is promoted by the tendency of self-medication and further amplified by promotion of such products by many people notably chemists.

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These topical corticosteroids are frequently used over face by people especially women for the want of a fairer skin. The face bears the brunt of this unscientific and potentially dangerous therapy as the skin is relatively thinner and more sensitive over face. The most common facial dermatoses due to topical corticosteroid abuse include steroid acne, rosacea, acneiform eruptions, hypertrichosis, and demodicosis.^[3] Another peculiar yet significant adverse effect noted on face which has been described by different authors include dermatitis rosaceiformis steroidica,^[4] steroid addiction,^[5] and rosacea-like dermatitis.^[6] The subject of TC misuse has been studied and reported around the world including Asia.^[7-9] However, similar data are lacking from our state and hence we undertook this study to assess the clinical presentations and associated factors with misuse of TC.

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Materials and Methods

This cross-sectional study was conducted at dermatology department of a tertiary health care teaching hospital located in eastern India. The study period was for 1 year, i.e., from 1st January 2018 to 31st December 2018. As per the inclusion criteria for the study, we enrolled all consecutive patients of both sexes presenting with facial dermatoses who had positive history of over the counter topical corticosteroid application. The exclusion criteria included patients unwilling to voluntarily participate in the study, patients not allowing photography for clinical documentation, and patients having any comorbidities which might cause similar changes such as Cushing syndrome/thyroid disorders, etc. The continuous data were summarized as mean \pm standard deviation. Comparison of these data was done by Mann-Whitney U test. The categorical data were expressed as proportion and compared using Chi-square (χ^2) test. A $P < 0.05$ was considered to be statistically significant.

Results

A total of 316 patients reported using topical corticosteroids on their face during the study period. Females were the overwhelming majority (83.22%) in the study participants. The mean age of female patients was 25.6 ± 2 years, whereas male patients of our cohort had a mean age of 23.8 ± 1.8 years ($P < 0.001$). To study the epidemiological profile of the study subjects, we divided the entire population into different age groups. It was seen that majority of topicalsteroid abusers were in 20-30 years age group followed by <20 years age group. Majority of patients were from rural areas (68.7%) among the entire cohort. To ascertain the source of the information regarding use of topical corticosteroids, we requested each subject regarding how they came to know and use these products. An overwhelming proportion was advised by their relatives/friends (57.9%), followed by pharmacists (17.7%), television and newspaper commercials (16.1%), and doctors (8.3%), respectively. The average duration of use of such agents was around 6 ± 2 months prior to presenting to us. An interesting observation which emerged is that women tended to use these products for a longer duration of time than males prior to presentation ($P < 0.001$). Enquiry regarding the indication for which topical corticosteroids were started revealed that majority used it for getting a "fairer skin tone" (70.6%, $n = 223$). Treatment for "cure of acne" represented the next most common reason for topical corticosteroid abuse (12.9%). The next reason of TC abuse was to treat postacne hyperpigmentation (8.8%) followed by their use as treatment for tinea and other facial dermatitides (7.7%), respectively.

When we analyzed the most common adverse reactions to these agents among study participants, it was found that new onset acne or exacerbation of preexisting acne (45.2%)

represented the single most important adverse event. This was followed by erythema/telangiectasia (21.2%), pigmentation [hyper/hypo] (13.9%), acneiform eruptions (9.1%), hypertrichosis (6.6%), rosacea (2.2%), and atrophic scars (1.5%), respectively. Steroid-induced photosensitivity was seen in 26% of total participants. The clinical manifestations of topical steroid damaged face are summarized in Figures 1a-d.

To ascertain the most common used steroid by patients, we made a detailed enquiry and reviewed all the preparations used by patients. The most common topical corticosteroid abused by our patients included mometasone valerate (40.3%) and betamethasone furoate (21.1%). Less commonly used preparations included clobetasol propionate (10.4%), beclomethasone (9.1%), fluticasone propionate (7.2%), fluocinolone acetonide (6.6%), and certain other forms.

When we compared clinicodemographic parameters among our study participants stratified by sex, we found that women tended to use TC for a longer duration of time prior to presentation as compared to their male counterparts ($P < 0.001$). Similarly, women (63.8%) reported using TC more regularly than males (37.7%). Comparing the reason/indication for starting TC use we found that majority of males predominantly used TC as a modality for treating acne whereas females abused these agents in pursuit of getting a fairer skin. A comparative data analysis between males and females patients is presented in [Table 1]. The



Figure 1: (a). Severe exaggeration of acne with nodular lesions and crusting. (b). Marked erythema and telangiectasia over face. (c). Steroid-induced rosacea. (d). Steroid-induced atrophy

summary of important clinical outcomes of our study as well as of previously reported studies involving TC damaged face patients is summarized in Table 2.

Discussion

The ever-increasing fantasy of getting a fairer skin tone in a dark-skinned country like ours pushes people to use every product which promises to do so without consulting a specialist. The problem is worsened when these products are endorsed by various film and television celebrities who are idolized in a country like ours. Topical steroid damaged/dependent face is a problem faced all over the world.^[5,7-9] In India, the problem is even bigger because all these products are easily available without prescription. A multicenter study was conducted in various parts of India and compiled to form a larger study by Saraswat *et al.*^[10] and has been published earlier.

We found that about 7% of the patients visiting our outpatient department had been misusing/abusing topical steroids over face which is similar to results reported by authors from Iraq^[8] who reported around 7.9% of subjects presenting with similar problems in their region. In contrast to it, Saraswat *et al.* had reported albeit a higher (15%) figure from their study regarding prevalence of TC abused face.^[10] Most of the patients in our study belonged to age group 20--30 years which has been similarly reported in various other studies depicting the vulnerability of this age group.^[10-12,15] In agreement to previous published studies, we also saw that acne and flare of pre-existing acne post topical steroid misuse/abuse was the most common reported adverse event.^[8-14,16]

Most common TC abused as reported in the previous studies were superpotent formulations,^[8-14] while mid potent

Table 1: A comparative data analysis of various parameters between male and female patients

Serial no.	Parameters	Males n=53	Females n=263	P
1.	Age (years)	23.8±1.8	25.6±2	<0.001
2.	Duration of steroid use (months)	6±2	8±1.5	<0.001
3.	Percentage of subjects using regularly	37.7% (20)	63.8% (168)	<0.001
4.	Percentage of subjects using intermittently	62.3% (33)	36.2%(95)	<0.001
5.	Indication for use			
a.	Fairer skin	30.2% (16)	92.8% (207)	<0.001
b.	Pigmentation (hyper/hypo)	4.9% (2)	10.1% (26)	<0.19
c.	Treatment for acne	33.8% (18)	8.9% (23)	<0.001
6.	Most common adverse effects			
a.	Acne	52.8% (28)	43.7% (115)	0.23
b.	Erythema/telangiectasia	54.7% (29)	14.4% (38)	<0.001
c.	Hypertrichosis	5.6% (3)	6.8% (18)	1
d.	Photosensitivity	54.7% (29)	20.1% (53)	<0.001

Table 2: Comparison of important findings of various published studies with current study

Parameters	Present study	AI-Dhalimi and Aljawahiri ^[8]	Saraswat <i>et al.</i> ^[10]	Nyati <i>et al.</i> ^[11]	Ambika <i>et al.</i> ^[12]	Dey <i>et al.</i> ^[13]	Inakanti <i>et al.</i> ^[14]	Pal <i>et al.</i> ^[15]
Duration	1 year	1 year	4 months	1 year	1 year	1 year	2 years	6 months
Total patients	316	140	433	670	200	379	130	271
Gender distribution (F:M)	263:53	95:45	321:112	487:183	142:58	299:80	90:40	197:74
Most common age group	20-30 year	10-19 year	-	21-30 year	15-30 year	10-29 year	21-30 year	20-29 year
Most common indication	Skin lightening	Skin lightening	Face cream/fairness cream/after shave cream	Acne	Acne	Skin lightening	Fairness creams	Acne
Most common source of use	Friends/relatives	Paramedical personnel	Friend/peer/relative	Pharmacist (OTC)	Friend/peer/relative	Pharmacist/Paramedical personnel	Registered medical practitioners	Pharmacist
Most common side effect	Acne	Acne	Acne	Acneiform eruption	Acneiform eruption	Acne	Acneiform eruptions	Rosacea/photosensitivity
Most common steroid abused	Mometasone	Clobetasol	Betamethasone	Betamethasone	Betamethasone	Mixed (potent and very potent)	Betamethasone	Mid potent

formulation (mometasone) was the most common abused TC in our study, which is similar to Pal *et al.*^[15] The reason could be attributed to ever-increasing popularity of triple combination (mometasone, hydroquinone, and tretinoin) for fairness creams leading to a plethora of products with this formulation in the Indian market. The most common stimulus for the patients in our study to use these products was suggestions from close friends and relative sin congruent to previous reports.^[10] An important point which our study highlights is that 16.1% of subjects used topical steroids after seeing television/newspaper commercials. This helps us understand the amount of effect which such unscrupulous advertisement by various pharmaceutical companies has on life, health, and mind of people. The ignorant patients go on using the products even after getting the side-effects with hope of improvement in skin color but instead it worsens the scenario. The only and most effective treatment in such patients is the complete stoppage of these topical applications along with the symptomatic treatment.^[3] The various medications used are tetracycline, isotretinoin, antihistaminics, and moisturizers with strict photoprotection.

Conclusion

The unchecked use of topical steroids is an ever-increasing problem in our country. The reasons are many as are found in our study. Our study highlights the magnitude and demographics of TC abuse facial dermatoses in our community and cover the various clinical phenotypes associated with it. To solve the problem of TC abuse, stringent laws are required to put a check on various pharmaceutical companies promoting honey-coated television commercials which blinds the user about the various side-effects of such formulations. The problem is perpetuated by the unrealistic craze and want of fairer skin by our people coupled with easy access to such products as cheap over the counter products.

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Conflicts of interest

There are no conflicts of interest.

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