

Original Research Article

Topical steroids - fairness fervour to fallout

Ashok S. Hogade, Ismat Fatima*

Department of Dermatology, MRMC Gulbarga, Karnataka, India

Received: 24 January 2017

Revised: 21 February 2017

Accepted: 03 March 2017

*Correspondence:

Dr. Ismat Fatima,

E-mail: drfatima.hafsa@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Topical Steroids (TS) are one of the most widely used therapeutic formulations in practice. Treatment was revolutionized with the advent of these anti-inflammatory corticosteroids. They provide rapid symptomatic relief in almost all inflammatory dermatoses, in short term. In India topical steroids are marketed by many pharmaceutical companies and few of these formulations are available at every medical store even without a prescription.

Methods: Patients with relevant facial dermatoses (clinical features suggestive of TS abuse) with history of current TS inappropriate use were included. Diagnosis was established on clinical basis and consent was sought. Proper skin examination was performed to detect the condition related to abuse of TS.

Results: Out of 100 patients studied 54 were females and 46 males. Majority were of 15-35 years age group and unmarried. 72% patients belonged to lower and 25% to middle socioeconomic class. Majority of the patients were students (42%) followed by household workers (38%).

Conclusions: Unnecessary cosmetic use of TCs with or without fairness creams is quite common in facial dermatoses resulting in steroidal dermatitis resembling rosacea. Topical steroid misuse is increasing because of easy availability, Lack of awareness, Obsession for fair skin.

Keywords: Topical corticosteroids, Fairness creams, Steroidal dermatitis, Adverse effects, Misuse

INTRODUCTION

In 1952 when topical corticosteroids (TC) were first introduced as marketable commodities.¹ They were hailed as a remedy for all ills by physicians and patients and gained rapid popularity. This euphoria was overtaken up by the pharmaceutical companies. A large number of modifications of the original compound F (hydrocortisone) were discovered in rapid succession. The availability of such a wide variety of corticosteroids proved to be annoying to dermatologists, but after the initial jolly period the side-effects of the drugs gradually became noticeable.² The problem of side-effects became gradually more acute with rampant and unlimited misuse of the drug particularly by non-dermatologists.³ What was once considered to be a magic drug for most diseases in dermatology turned itself into a cause of many illness.

TCs creams offer rapid symptomatic relief in many inflammatory dermatoses, especially in short-term and even its improper use, for instance in infectious dermatoses, produces an initial clinical improvement. In addition to their anti-inflammatory effects, TCs also have potent antipruritic, atrophogenic, melanopenic, sexhormone-like and immunosuppressive effects on the skin and can lead to significant local adverse effects if used indiscriminately.⁴ Not only the abuse, even the excessive regular use of topical fluorinated steroids on the face is associated with eruption that is clinically indistinguishable from rosacea and is known by various names by different authors like, light sensitive seborrheid, perioral dermatitis, rosacea-like dermatitis, steroid rosacea, steroid dermatitis resembling rosacea, and steroid-induced rosacea-like dermatitis.⁴⁻⁷ The main clinical presentation of this dermatosis is diffuse facial

redness with or without papulopustular lesions in addition to the development of rebound phenomenon after withdrawal of TCs.⁸ This dermatosis is routinely seen in the daily clinical practice.

In addition to steroid rosacea, prolonged use of TCs cause acneiform eruption, hypertrichosis, steroid addiction, and red face syndrome associated with severe rebound erythema, burning and scaling on the face on any attempted cessation of the application.⁹ Another dimension of TCs misuse is its cosmetic application particularly in combination with bleaching creams to make the skin fair among dark complexioned people.

The abuse of TCs is intertwined with fairness creams in our colour conscious society where people are obsessed with fair colour due to various social and historical reasons. Like fairness creams, TCs are readily available over the counter and in most instances, these are used as a depigmenting agent in combination with hydroquinone or mercury based bleaching creams in conditions such as acne, melasma, freckles, and many a times just to improve the dark complexion. Thus the combination of factors like easy availability, lack of awareness regarding side effects, obsession for fair skin and poor access to Dermatologists makes the situation in India ripe for their misuse in the community.

METHODS

This observational descriptive study was conducted at Department of Dermatology, Mahadev Rampure Medical College, Gulbarga, Karnataka from 01-01-2015 to 31-12-2015. 100 patients were taken into study as convenient sample. The patients were enrolled after taking informed consent. Patients attending the OPD with relevant facial dermatosis were enquired about use of any TCs and over the counter topical formulation. Complete history was taken regarding the use of TCs duration, trade name. Patient was enquired about the prescribing authority, indication of use, reason for OPD consult with present signs and symptoms. The age, sex, educational status was properly noted in the proforma. Cutaneous examination was done to note the type of skin, any erythema, scaling, telangiectasia, atrophy, wrinkles, hirsutism, papules, and pustules. The systemic examination was done to rule out any other comorbidity. Photographic documentation of patients was done with proper informed consent. The study was approved by the ethical committee and inclusion criteria for patients to be enrolled were selective only for those, with clinical features suggestive of facial dermatoses and who had history of TCs and/or fairness creams use on the face continuously for more than 1 month or intermittently (for more than 3 months) due to any purpose other than classical rosacea.

Inclusion criteria were patients with relevant facial dermatoses (clinical features suggestive of TS abuse) with history of current TS use on face and their inappropriate use.

Exclusion criteria were patients not consenting to answer the questionnaire and patients with comorbidities that resemble/ could cause changes similar to TS side effects (e.g. polycystic ovaries/ cushings syndrome/ thyroid disorders).

RESULTS

Table 1: Age distribution of patients and marital status.

Age group	Percentage (%)
<15 years	10
15-35	63
36-60	25
>60	02
Gender	
Male	46
Female	54
Marital status	
Married	34
Unmarried	66

Table 2: Socioeconomic status and occupation.

Socioeconomic status	Percentage (%)
Low	72
Middle	25
High	03
Occupation	
Students	42
Household workers	38
Others	20

Table 3: Prescription source and side-effects awareness.

Advised by	Percentage (%)
GPs, Non-Dermatologist	60
Over the counter	34
Others	06
Awareness	
Not aware	87
Aware	13

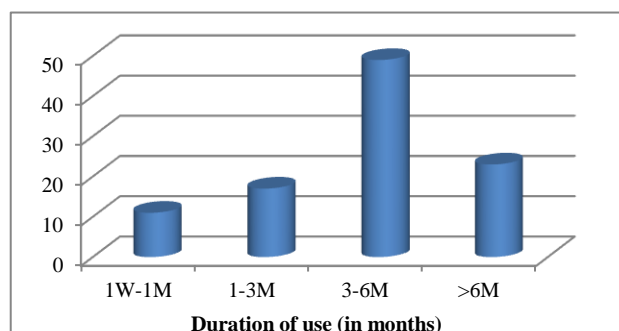


Figure 1: Duration of TCs misuse.

Table 4: Indications for TCs use.

Indications	Percentage
Post inflammatory hyperpigmentation and Fairness	40
Acne	28
Melasma	20
Melasma with freckles	04
Tinea fascie	08
Nonspecific dermatoses	08

Table 5: Trade names and classes of various TC formulations abused by the study patients.

Ingredients	Class (potency, USA classification)	% of pts using drug
Betamethasone valerate cream	II	46
Clobetasol propionate cream	IV	25
Betamethasone/ Beclomethasone dipropionate cream	I/II	06
Mometasone furoate cream	IV	19
Others (fluticasone propionate, fluocinolone acetonide)	V/IV	04

Table 6: Cutaneous adverse effects seen in patients using TCs.

Cutaneous adverse effects	Percentage (%)
Facial erythema	42
Aggravation of existing lesions/ Acne	51
Steroid addiction/topical steroid dependent face	40
Acneiform eruptions	28
Hypertrichosis	18
Rosacea	7
Perioral dermatitis	5
Telangiectasia	10
T.incognito	4
Atrophy	1
Hypopigmentation	4
Others	5

Out of the 100 patients studied, there were 54% females and 46% males. The most frequently involved age group was between 15-35 years and unmarried group. The youngest patient was ten years old and oldest was 65 years old as shown in (Table 1). Patients of various educational status ranging from illiterate to postgraduate students were seen (42%), followed by household

workers (38%) (Table 2). 72 % patients belonged to lower and 25% to middle socioeconomic class prescribed by general practitioners and non-dermatologists in 60%. The duration of steroid application on face was 3-6 months in 49% patients, followed by 6-12 months in 23% and 1-3 months in 17% in. The maximum duration of use was 12 years on an intermittent basis for fairness by an illiterate, rural woman (Figure 1). 87% of the patients were not aware of the side-effects (Table 3). In terms of Frequency of application majority of them used it once a day (57%) followed by twice (31%) or more times a day (12%). In terms of time duration in hours of application was >6 hours in almost 82% of them followed by <6 hours in the rest. With respect to area of face exposed to TS (66%) were using them all over the face and rest- over the affected areas. The source of recommendation regarding the misuse of these creams were prescribed by general practitioners and non-dermatologists in 60% of the cases, over the counter purchase from pharmacies and general stores were in 34% of the cases. And others which includes friends, relatives, beauticians, peers etc in 6% of the cases. The underlying condition for which the patient started TCs was post-inflammatory hyperpigmentation, fairness-40% followed by acne and melasma in 28% and 20% respectively. In the spectrum of adverse effects, the top most was Acne (Denovo or exacerbation of pre-existing lesion) in 51% followed by facial erythema and steroid addiction in 42 and 40%. More than one adverse effect -seen in few. Potent topical steroid- which was misused the most was betamethasone valerate followed by clobetasol propionate and mometasone furoate misused leading brands were betamethasone as betnovate and diprovate, clobetasol as panderm plus, clop-G and dermovate. Mometasone as skinlite, melalite and momate.



Figure 2: Perioral dermatitis.



Figure 3: Acneiform eruptions.



Figure 4: Steroid induced erythema.

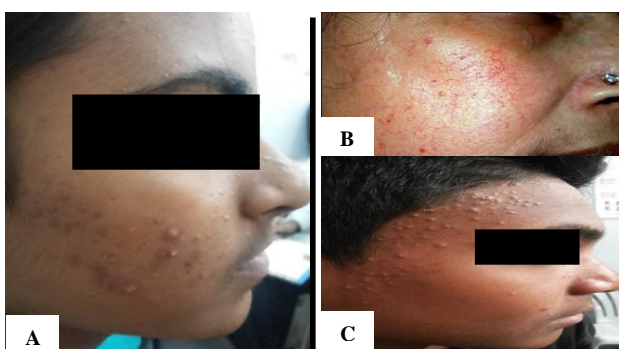


Figure 5: A: Hypertrichosis and acne, B: Telangiectasia, C: Acneiform eruptions.

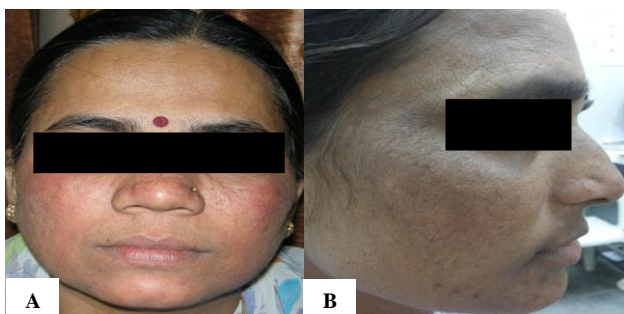


Figure 6: A: Steroid induced rosacea, B: Telangiectasia.

DISCUSSION

The excessive facial use of TCs for inflammatory dermatoses and its abuse for cosmetic purposes is a common problem, often associated with eruption resembling rosacea. The rapid symptomatic relief in many dermatoses prompts the patients to abuse the medication resulting in the array of the adverse effects, dependence to TCs and this dilemma is confronted by dermatologists not only in India but also reported from many countries across the globe.¹⁰⁻¹³ In India the problem is complex as patients are under influence of disinformation, where TCs have acquired reputation of being anti-acne and anti-blemish cream among dark complexioned people.¹¹ The adverse effects in patients

using TCs with or without fairness creams observed in our study as depicted in Table 6, were facial erythema associated with irritation in (42%), aggravation of preexisting dermatosis like acne (51%), steroid addiction in (40%), hypertrichosis in (18%), telangiectasia (10%), acneiform eruption (28%), papular rosacea like rash (7%), hypopigmentation (4%), tinea incognito (4%) and atrophy in (1%) patients. Similar findings with some variations were observed in other studies.¹⁴⁻¹⁶ It has been suggested that multiple pathways including rebound vasodilatation and pro-inflammatory cytokine release by chronic steroid use induce erythema and rosacea-like eruption.¹⁷ Most of the patients in our study (68%) used potent to very potent TCs, which is in concordance with aforementioned studies from other studies.^{11-13,16}

Similar to the results seen in other studies done on TCs misuse on face, our study also observed 15-35 years old as the most common age group and were unmarried.^{18,19} In rural areas, the major problem was the cluster of village doctors who were prescribing authority of cases in our study. Majority of these village doctors don't even possess the minimal educational qualification needed to practice medicine. In our study, chemists were involved in 34% cases, mainly because of lack of government regulations on dispensing of drugs and secondly because a layman in India considers the sales persons at chemist counter equal to Doctors. Friends and relatives are undoubtedly a very common source of prescription by sharing and copying as seen in various studies. Most of the patients used more than one brand of fairness creams and none of the patients was familiar with the ingredients and adverse effects of these creams. The most common TC used in our study was betnovate valerate 0.1% in 46% cases. Inakanti et al reported betnovate (containing betnovate valerate 0.1%) use in 79.2% cases and Saraswati et al in 50% cases.^{18,19} The reason for rampant use of this molecule is its low cost, over the counter availability and decades of presence in Indian market. Another fast emerging molecule abused was clobetasol propionate, mainly used in combination with antifungal or antibiotic. It was used by 25% patients in our study. Both of these molecules belong to the high potency group of topical corticosteroids and are known to produce adverse effects when used inappropriately and for long duration.

Another study revealed the presence of lead, cadmium, copper and other heavy metals in Fair and Lovely® cream In Indian market.²⁰ Analytical report revealed the high concentration of mercury in Fair and Lovely ayurvedic® (4004 ppm) and Fair and Lovely max fairness® cream (4174 ppm). Fair and Lovely® cream was also the popular brand in our study and its market share is whopping 76% reflecting the magnitude of fairness obsession, brand consciousness on the part of consumers in India.²⁰ In our study as depicted in Table 4 main indications for using most of these creams were acne, dark complexion and melasma, comparable to that of other studies.^{11,12,16}

We also found that the advice regarding the prescription of these creams and found that in majority of the patients, these were recommended by general practitioners and non-dermatologist doctors, beauticians and self, chemists, and others.

CONCLUSION

We conclude from our study that topical steroid misuse is increasing because of easy availability and the situation is likely to get worse until remedial measures are taken on multitude of fronts and we recommend educational approach, media and public education with involvement of general practitioners, nurses, pharmacists. The legal approach includes the enforcement of the existing legislation related to the control of medicines. In managerial approach primary health care providers to be sensitized regarding the adverse effects of TS abuse and to recommend them suitable and safe alternative.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

REFERENCES

1. Sulzberger MB, Witten VH. The effect of topically applied compound F in selected dermatoses. *J Invest Dermatol.* 1952;19:101-2.
2. Epstein NM, Epstein WL, Epstein JH. Atrophic striae in patients with inguinal intertrigo. *Arch Dermatol.* 1963;87:450-7.
3. Hengge UR, Ruzicka T, Schwartz RA, Cork MJ. Adverse effects of topical glucocorticosteroids. *J Am Acad Dermatol.* 2006;54:1-18.
4. Rathi S. Abuse of topical steroid as cosmetic cream: A social background of steroid dermatitis. *Indian J Dermatol.* 2006;51:154-5.
5. Chen AYY, Zirwas MJ. Steroid-induced rosacea like dermatitis: case report and review of the literature. *Cutis.* 2009;83:198-204.
6. Leyden J, Thew M, Kligman AM. Steroid rosacea. *Arch Dermatol.* 1974;110:619-22.
7. Del Rosso JQ. Management of papulopustular rosacea and perioral dermatitis with emphasis on iatrogenic causation or exacerbation of inflammatory facial dermatoses. *J Clin Aesth Dermatol.* 2011;4:20-30.
8. Frumess GM, Lewis HM. Light sensitive seborrheid. *Arch Dermatol.* 1957;75:245-8.
9. Rapaport AMJ, Rapaport V. Eyelid dermatitis to red face syndrome to cure: clinical experience in 100 cases. *J Am Acad Dermatol.* 1999;41:435-42.
10. Agarwal A, Singhvi IJ, Bele D, Sharma K, Gupta SK, Karwani G, et al. Evaluation of steroids in face creams of different marketed brands. *Int J Pharm Technol.* 2011;3:2480-6.
11. Mahe A, Ly F, Aymard G, Dangou JM. Skin diseases associated with the cosmetic use of bleaching products in women from Dakar, Senegal. *Br J Dermatol.* 2003;148:493-500.
12. Al-Dhalimi MA, Aljawahiri N. Misuse of topical corticosteroids: A clinical study from an Iraqi hospital. *East Mediterr Health J.* 2006;12:847-52.
13. Semiz S, Balci YI, Ergin S, Candemir M, Polat A. Two cases of Cushing's syndrome due to overuse of topical steroid in the diaper area. *Pediatr Dermatol.* 2008;25:544-7.
14. Bhat YJ, Manzoor S, Qayoom S. Steroid induced rosacea: A clinical study of 200 patients. *Indian J Dermatol.* 2011;56:30-2.
15. Hameed AF. Steroid dermatitis resembling rosacea: A clinical evaluation of 75 patients. *ISRN Dermatol.* 2013;2013:491376.
16. Abir S, Koushik L, Manas C et al. Topical corticosteroid abuse on face: A Prospective multicenter study of dermatology outpatients. *Indian J Dermatol Venereol Leprol.* 2011;77:160-6.
17. Goldman D. Tacrolimus ointment for the treatment of steroid-induced rosacea. A preliminary report. *J Am Acad Dermatol.* 2001;44:995.
18. Saraswat A, Lahiri K, Chatterjee M, Barua S, Coondoo A, Mittal A et al. Topical corticosteroid abuse on the face: a prospective, multicenter study of dermatology outpatients. *Indian J Dermatol Venereol Leprol.* 2011;77(2):160-6.
19. Inakanti Y, Thimmasarathi VN, Anupama, Kumar S, Nagaraj A, Peddireddy S, Rayapati A. Topical corticosteroids: abuse and misuse. *Our Dermatol Online.* 2015;6(2):130-4.
20. Sangeeta M. Fair war. A case study on fairness cream. *Int J Contemporary Business Studies.* 2012;3:46-54.

Cite this article as: Hogade AS, Fatima I. Topical steroids - fairness fervour to fallout. *Int J Res Dermatol* 2017;3:234-8.