International Journal of Research in Dermatology
Nyati A et al. Int J Res Dermatol. 2017 Sep;3(3):433-438
http://www.ijord.com

DOI: http://dx.doi.org/10.18203/issn.2455-4529.IntJResDermatol20173926

Original Research Article

Topical steroid abuse on face: a prospective study from a tertiary care centre of north India

Asha Nyati*, Anil Kumar Singhal, Devendra Yadav, Manoj Kumar Sharma

Department of of Dermatology, Govt. Medical College, Kota, Rajasthan, India

Received: 19 April 2017
Accepted: 25 May 2017

***Correspondence:**
Dr. Asha Nyati,
E-mail: drashanyati@gmail.com

ABSTRACT

Background: Topical corticosteroids (TCS) are widely misused on face which is associated with significant adverse effects and poor awareness of these effects. The aim of this study was to assess the frequency of misuse of topical corticosteroids, the causes behind it and the most common adverse events resulting from it and to make aware the people about it

Methods: This study was conducted at Dermatology Department of Govt. Medical College, Kota during period of one year from July 2015 to June 2016. A total of 670 patients using topical steroids over face were enrolled in the study. Details about the usage of topical corticosteroids and their side effects were recorded.

Results: Majority of the patients were females (72.68%). The most common reason for misuse was melasma (57. 91%) followed by use as a fairness cream (22.38%). Most of the patient used topical steroid cream for duration of 3-6 months (33.13%). Most common age group was 21-30 years (48.20%). Acne form eruption (38.05%) and rebound erythema (28.20%) were the most common adverse effects noted. Patients were ignorant of the ingredients and their side effects.

Conclusions: Steroids have been misused by patients on their own or by pharmacist and non-dermatologist physicians for various reasons. Topical steroid should not be used on the face unless it is under strict dermatological supervision.

Keywords: Topical steroids, Misuse, Adverse effects

INTRODUCTION

Topical corticosteroids (TCS) are perhaps the most commonly prescribed medications in dermatological practice and since its introduction in 1951, they are increasingly used for a wide range of inflammatory skin diseases.[1] The clinical effects are due to their anti-inflammatory, vasoconstrictive, antiproliferative and immunosuppressive properties which result significant side effects locally if are used indiscriminately for a longer period.[2] Use of topical steroids on face for a longer period produce peculiar side effects like Acne form eruption, rebound phenomenon, hypermelanosis, hypertrichosis, telengiectasea, hypopigmentation and sometimes atrophy that take long time to get down, increase sensitivity of the face to the hot and cold environment and patient get addicted to the steroid cream.[3] So many potent and superpotent steroids combination creams are available in Indian market over the counter for topical use on the skin for face.

Aim of this study was to assess the frequency of misuse of topical corticosteroids, the causes behind it and the most common problems resulting from it and to aware the people about it.

METHODS

Patients were recruited for the study from the dermatology out-patient department, Govt. medical college, Kota, during the period from July 2015 to June 2016.

The patients studied were those who had used topical corticosteroids incorrectly (i.e. for conditions in which steroids are not indicated) for certain skin problems and presented with the side-effects of these drugs as chief complaints. These included the appearance of the foll-owing signs: acne form eruption, rebound phenomenon, hypermelanosis, hypertrichosis, telengiectasea and hypopigmentation.

Patients were interviewed directly by the dermatologist using an anonymous questionnaire. Questions covered age, sex, address, education level, regular or intermitent use of combination or plain betamethasone or mometasone cream, frequency of application and reason for using the drug. Patients were also asked who had prescribed/recommended the remedy [patient himself, friends, family members (i.e. over-the counter), pharmacist, paramedical personnel, physician/general practitioner, other specialist or dermatologist].The adverse events of topical steroids which prompted the patients to visit the dermatology clinic were registered and the clinical details recorded. In addition, a full skin examination was performed to detect any condition related to abuse of topical steroids. Most diagnoses were exclusively clinical, and were based on typical, classical features.

Inclusion criteria

Current use was defined as any continuous use of seven or more consecutive days or intermittent use over a period of 15 or more days. This use should have been going on till the day of presentation to the center, or if stopped, not more than 15 days before. Investigators were asked to judge whether the TC use in each case was appropriate and justified. Wrong indication (e.g., acne), undiagnosed dermatosis (in investigator's opinion), inappropriate potency or more than 1 month's use after the last consultation were criteria used to define unjustifiable/inappropriate use.

Exclusion criteria

All patients complaining of facial dermatoses (dermatosis papulosa nigra, melanocytic nevi, adnexal tumors and xanthelasmata), and patients who were on oral steroids for any reason were excluded.

RESULTS

In all, 4572 patients with facial dermatoses were screened at OPD, GMC, KOTA over the study period. Of these, 670 patients or 14.65% were found to be using TC on their face. In our study we observed 670 patients with misuse of topical corticosteroids for face for different indications. We found female patients (72.68%) were more attracted to use it for facial problems compared to Males (27.32%). Mainly affected age group were 21-30 (48.20%) and 31-40 (25.22%) out of 670.

Table 1: No. of male and female patients used topical steroid on face.

Male no. (%)	Female no. (%)
183 (27.32)	487 (72.68)

Table 2: Different age groups used topical steroid on face.

Age groups	No of patients (%)
11-20	94 (14.02)
21-30	323 (48.20)
31-40	169 (25.22)
41-50	84 (12.53)

Table 3: No. of patients to whom topical steroids had been prescribed by different sources.

Prescribed by	No of patients (%)
Pharmacist "O.T.C." "Medical Store"	285 (42.53)
General practitioner	173 (25.85)
Relatives	89 (13.28)
Self-prescription by Aid	66 (9.86)
Dermatologist	57 (8.50)

Table 4: Duration of topical steroids use on the face in the study subjects.

Duration of use	No of patients (%)
One Month	47 (7.01)
1-3 month	222 (33.13)
3-6 month	199 (29.70)
6 month – 1 year (regular or intermittent)	96 (14.32)
More than one year regular or intermittent	106 (15.82)

Patient used TCS mainly suggested by pharmacist (42.53%) "OTC" where drugs can be given without qualified doctor's prescription. General practitioners (25.85%) in rural areas, friend and relatives, by self-reading in newspaper or other communicating aids, lastly by few dermatologists for a short period but due to improvement patient had refilled many times.

The duration of use of topical corticosteroids varied widely from 1 month to years, maximum patients (33.13%) used it for regular 1-3 months than (29.70%) used it for 3-6 months and (15.82%) patient use it for years.

Table 5: No. of patients showing abuse of topical steroids on face.

Indication	Side effect	No of patients (%)
Face (total patients 670)		
Acne (92)		
Males 37 (40.2%)	Acne form eruption	360 (53.73)
Females 55 (59.79%)	Rebound phenomenon	219 (32.68)
Melasma (388)	Hypermelanosis	124 (18.50)
Males 88 (22.68%)	Hypertrichosis	52 (7.76)
Females 300 (77.32%)	Telengiectasea	35 (5.22)
Fairness (150)		
Males 46 (30.66%)	Hypopigmentation	87 (12.98)
Females 104 (69.34)		

Table 6: Brand names and combination of topical steroids used by patients in study subjects.

Brand Name	Composition	No of patients (%)	Class (potency, USA classification)
Betnovate Cream	Betamethasone valerate (0.1%)		
Betnovate-N Cream	Betamethasone valerate 0.1%, neomycin sulphate 0.5%	351 (52.39%)	III
Betnovate-C Cream	Betamethasone valerate 0.1%, clioquinol 3%		
SkinLite Cream	Mometasone Furoate (0.1%), Hydroquinone (2%), Tretinoin (0.25%)	181 (27.01%)	
Noscar Cream	Same as above		
Momate Cream	Mometasone Furoate (0.1%)	15 (2.23%)	IV
Panderm plus Cream	Clobetasole Proprionate (0.05%), Ofloxacin (0.75%), Ornidazole (2%), Terbinafin HCl (1%)	107 (15.97%)	
Cosvate GM Cream	Clobetasole (0.05%), Gentamycin Sulphate (1%), Myconazole (2%) clioquinol 3%		I
Others	-	16(2.27%)	VII
Sofradex Cream	Framycetin (1%) plus dexamethasone (0.1%)		

Table 7: Rural and urban population using different topical steroid.

	Rural	Urban
Potent	285	173
Milder potent	122	90

p=0.0445.

Table 8: Potent and milder topical steroid used by physician and non physician sources.

	Potent	Milder potent
Non physician	308	132
Physician	150	80

p=0.0487.

Table 9: Potent and milder topical steroid used by male and female.

	Potent	Milder potent
Female	334	153
Male	124	59

p=0.0078.

Out of 670 patients steroid abuse on face were for various indications and faced adverse events. (13.73%) patient had used it for acne, (57.91%) for melasma, (22.38%) for fairness purpose, (5.97%) were using it for tinea fasciae.

Out of 670 patients most common adverse effect seen were acne form eruption in (53.73%) patient followed by rebound erythema (32.68%), hypermelanosis (18.50%), hypopigmentation (12.98%), hypertrichosis (7.76%) and

telengiectesia (5.22%) as shown in (Table 6) while tinea incognito was seen in all patient who used it for T.fasciae. Combined adverse effects were seen in 180 patients as shown in figures.

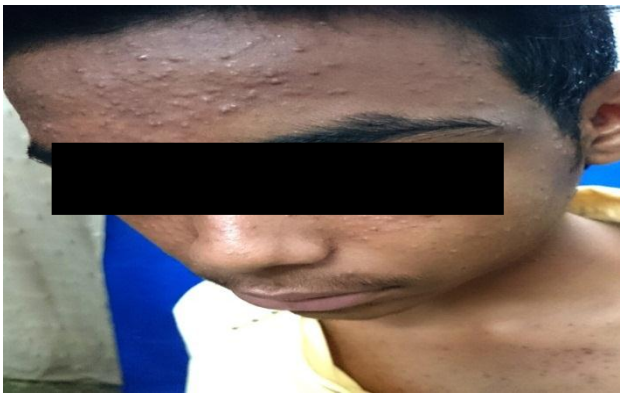

Figure 1: Showing acneform eruptions.

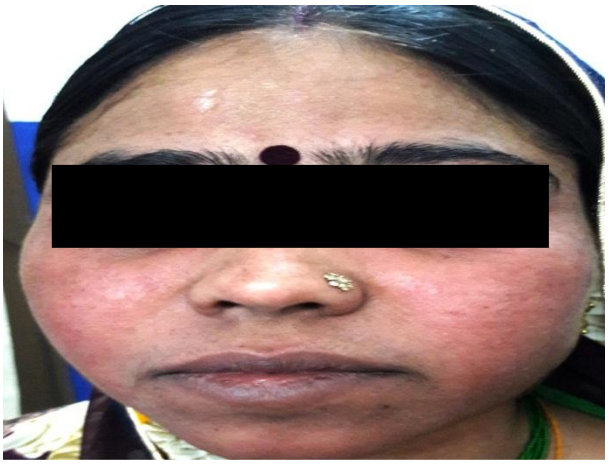

Figure 2: Showing rebound erythema.

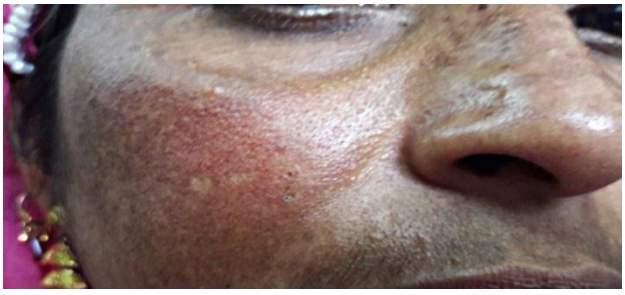

Figure 3: Showing telengiectasia and atrophy.

For further analysis, halobetasol propionate,clobetasol propionate, betamethasone dipropionate, beclomethasone dipropionate and betamethasone valerate were clubbed together in a group called "potent steroids," and all others were clubbed into another group called "milder steroids." When the number of patients using these two groups were compared against their area of residence, it was found that potent steroids were significantly more frequently used in the rural and suburban areas compared with the urban areas (p=0.0445). Patients' educational status did not seem to play a role in determining use of potent vs. milder steroids (p=0.06). In the age group of 21–30 years, twice as many patients were using potent steroids compared with those using milder steroids (p=0.001). In the other age groups, this difference was not significant. The source of the prescription also affected the choice of the TC group. It was seen that 80 of 230 (42%) prescriptions by physician were for products in the milder steroid group, whereas 308 of 440 recommendations by non-physicians were for potent steroids (p<0.004).

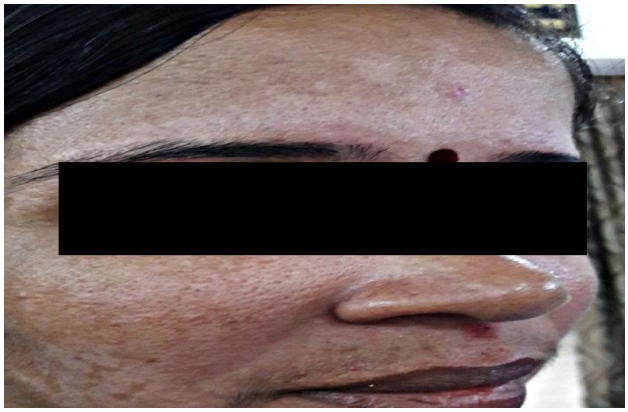

Figure 4: Showing hypopigmentation.

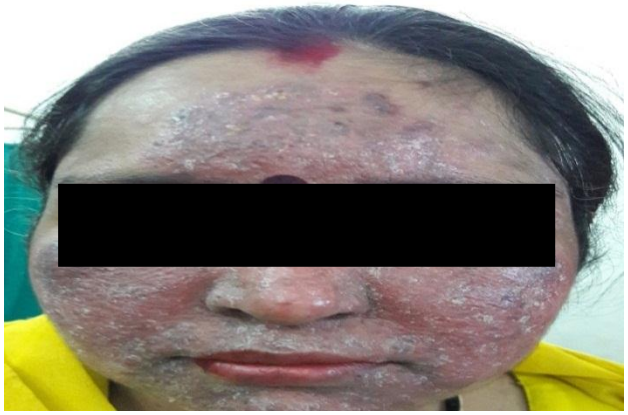

Figure 5: Showing rosaswaform dermatis.

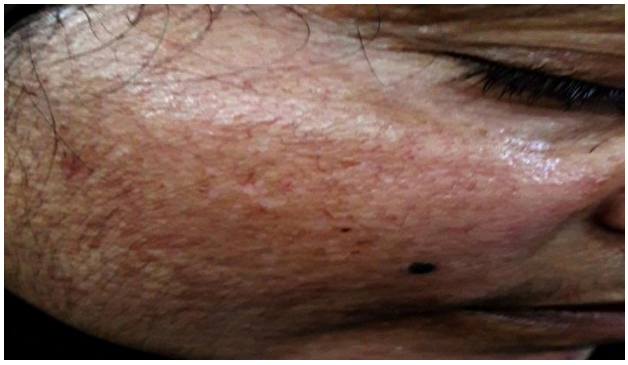

Figure 6: Showing thining of skin, telangiectasia and atropy at few places.

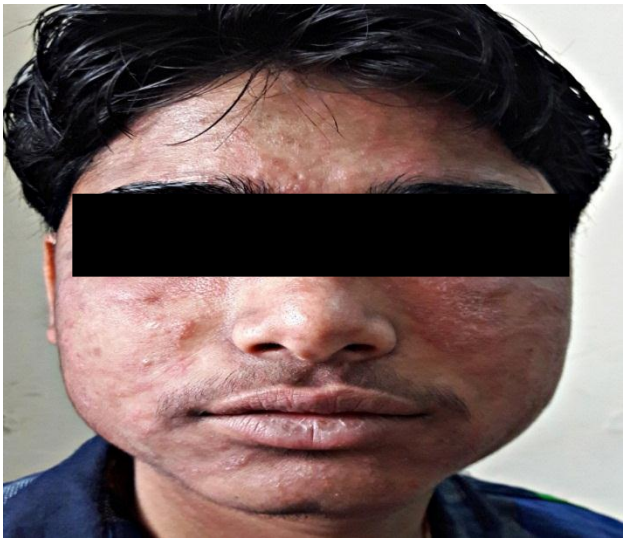

Figure 7: Showing tinea incognito.

DISCUSSION

As the easy availability and accessibility of TCS with various combination give the rapid symptomatic relief and prompt its overuse and misuse for face in India. This is the situation faced by many dermatologist in many countries which was described more than 30 years ago as "serious" in a classic paper by Kligman and Frosch.[3-7]

Many studies have been done in India and other countries for the topical steroid abuse on face.

The picture of typical TCS uses on the face that emerges from this data is that of young males and females to use potent to super potent steroid containing creams recommended by friends, relatives or by aids as fairness or all-purpose creams without any underlining skin ailments for months. Many of them tried modified Kligman regimen cream containing mometasone, hydroquinone and tretinoin for face for months unless the skin has become sensitive to an extent that bound them to stop and consult the dermatologist.

Similiar studied have been reported from china and Iraq, where TCS abuse appears to be very wide spread.[5,6,8]

We found that most patients were in the twenty to thirty years age group that is comparable with the study done by Saraswat et al.[9]

In our study 42.53% of the patients received topical steroid preparation from general practitioners at rural and suburban PHCs, CHCs with the old concept. So first of all we will have to break that chain by making aware of them regarding its side effects.

Most of the subjects were using potent to superpotent TCS in our study, which is going similar with prior studies from other countries.[4-8,10,11]. Second most was the betamethasone valerate (betnovate) used for face as beauty, fairness and all-purpose cream. Third most was mometasone, hydroquinone and tertinoin containing skin lightening formulation (Skinlite) was used by females and males for melasma, fairness and antiacne cream. Maximum rebound phenomenon, steroid addiction and hypertrichosis were noted with combination.[12]

Effective treatment of TC addiction and rosaceiform dermatitis is possible, and results in significant improvement in the quality of life of these patients.[11] Treatment of facial adverse effects of TCs focuses on complete cessation of use, which can be abrupt or gradual, depending on the potency of the product and duration of use. In cases of addiction, progressively less-potent TCs are introduced over a period of weeks to months. Unpleasant symptoms, viz. burning, stinging, pruritus and photosensitivity, are treated using bland emollients, topical calcineurin inhibitors and sunscreens. Systemic agents include tetracyclines, isotretinoin, non-steroidal anti-inflammatory drugs and antihistamines. The subject of pathogenesis and treatment of TC addiction has been reviewed.[13]

This study reveals a part of topical steroid misuse that is becoming endemic in many countries of the world even country like England where only hydrocortisone and clobetasone can be sold O.T.C., are facing the problem of overuse and misuse of these products by lay public.[14]

During the last few years no of articles focusing on this issuses have been published from India.[15-23] Case reports of patients suffering from various effects of misuse of TCS have regularly been discussed in ACAD_IADVL. Emphasizing the pandemic use of these combination drugs required the same force and awareness campaign for the controlling of their misuses.

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, Yaffe SN. Cortisone acetate administered orally in dermatologic therapy. Arch Dermatol Syphilol. 1951;64:573-8.
2. Hughes J, Rustin M. Corticosteroids. Clin Dermatol. 1997;15(5):715–21.
3. Kligman AM, Frosch PJ. Steroid addiction. Int J Dermatol. 1979;18:23-31.
4. 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.
5. Lu H, Xiao T, Lu B, Dong D, Yu D, Wei H, et al. Facial corticosteroid addictive dermatitis in Guiyang city, China. Clin Exp Dermatol. 2009;35:618-21.

6. Al-Dhalimi MA, Aljawahiri N. Misuse of topical corticosteroids:A clinical study from an Iraqi hospital. East Mediterr Health J. 2006;12:847-52.
7. Solomon BA, Glass AT, Rabbin PE. Tinea incognito and "overthe-counter" potent topical steroids. Cutis. 1996;58:295-6.
8. Rathi S. Abuse of topical steroid as cosmetic cream: A social background of steroid dermatitis. Indian J Dermatol. 2006;51:154-5.
9. 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;77:160-6.
10. Rapaport MJ, Rapaport V. Eyelid dermatitis to red face syndrome to cure: Clinical experience in 100 cases. J Am Acad Dermatol. 1999;41:435-42.
11. Liu ZH, Du XH. Quality of life in patients with steroid dermatitis before and after treatment. J Eur Acad Dermatol Venereol. 2008;22:663-9.
12. Majid I. Mometasone-based trple combination therapy in melasma: Is it really safe? Indian J Dermatol. 2010;55:359-62.
13. Ljubojeviæ S, Basta-Juzbasiæ A, Lipozenèiæ J. Steroid dermatitis resembling rosacea: Etiopathogenesis and treatment. J Eur Acad Dermatol Venereol. 2002;16:121-6.
14. Rogers PJ, Wood SM, Garrett EL, Krykant SP, Haddington NJ, Hayhurst J, et al. Use of non-prescription topical steroids: Patients' experiences. Br J Dermatol. 2005;152:1193-8.
15. Saraswat A. Topical corticosteroid use in children: Adverse effects and how to minimize them. Indian J Dermatol Venereol Leprol. 2010;76:225‑8.
16. Kumar MA, Noushad PP, Shailaja K, Jayasutha J, Ramasamy C.A study on drug prescribing pattern and use of corticosteroids in dermatological conditions at a tertiary care teaching hospital. Int J Pharm Sci Rev Res. 2011;9:132‑5.
17. Bhat YJ, Manzoor S, Qayoom S. Steroid‑induced rosacea: A clinical study of 200 patients. Indian J Dermatol. 2011;56:30‑2.
18. Rathi SK, Kumrah L. Topical corticosteroid‑induced rosacea‑like dermatitis: A clinical study of 110 cases. Indian J Dermatol Venereol Leprol. 2011;77:42‑6.
19. Saraswat A. Contact allergy to topical corticosteroids and sunscreens. Indian J Dermatol Venereol Leprol. 2012;78:552‑9.
20. Rathod SS, Motghare VM, Deshmukh VS, Deshpande RP, Bhamare CG, Patil JR. Prescribing practices of topical corticosteroids in the outpatient dermatology department of a rural tertiary care teaching hospital. Indian J Dermatol. 2013;58:342‑5.
21. Coondoo A, Chattopadhyay C. Use and abuse of topical corticosteroids in children. Indian J Paediatr Dermatol. 2014;15:1‑4.
22. 23.Verma SB. Sales, status, prescriptions and regulatory problems with topical steroids in India. Indian J Dermatol Venereol Leprol. 2014;80:201-3.
23. Rathi SK, D'Souza P. Rational and ethical use of topical corticosteroids based on safety and efficacy. Indian J Dermatol. 2012;57:251‑9.

Cite this article as: Nyati A, Singhal AK, Yadav D, Sharma MK. Topical steroid abuse on face: a prospective study from a tertiary care centre of north India. Int J Res Dermatol 2017;3:433-8.