



Topical Corticosteroids Misuse on Face: A Cross-Sectional Study from Jharkhand

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Abstract

Introduction: Topical Corticosteroids (TC), introduced in 1952, are used in a number of dermatological conditions. This very usefulness along with misconception regarding TCs as magical fairness and anti-acne cream and free availability over the counter has made it a double edged sword leading to rising instances of abuse and misuse.

Aim: To evaluate the misuse of TCs on face and the adverse effects due to their application.

Materials and Methods: A questionnaire-based analysis was done among patients presenting with various facial dermatoses in the dermatology outpatient department of a tertiary care hospital in Jharkhand. Patients were asked about their current use of topical preparations and on further follow-up questioning, those who revealed the use of TCs for a minimum duration of four weeks were included in the study and observed for local adverse effects.

Results: A total of 743 patients were observed, 506 were females (68.1%) and 237 were males (31.9%). Majority (36.9%) were of age group 20-29 years. 156 patients (21%) used creams containing combination of TC, antibiotic and antifungal, 139 patients (18.7%) used creams containing combination of TC and salicylic acid whereas only 67 patients (9%) used TC alone. 156 patients were advised to use TC by their friends, family members, or neighbors. Steroid used erythema (25.9%) was the most common adverse effect observed followed by steroid induced acne. (23.6%)

Conclusions: TC misuse in patients with facial dermatoses is quite common, and most of this use is unwarranted. Use as a fairness cream is the most common indication in this study.

Keywords: Misuse, combination cream, topical steroids, rosacea.

Introduction

Topical corticosteroids (TC) were introduced by Sulzberger and Witten in 1952. It is often considered as the most significant landmark in the

history of therapy of dermatological disorders.^[1]

They provide rapid symptomatic relief in almost all inflammatory dermatoses, especially in the short term. Apart from their anti-inflammatory

effect, TC also have potent antipruritic, atrophogenic, melanopenic, sex-hormone like and immunosuppressive effects on the skin. Hence they are used to treat various dermatological disorders. This very usefulness of the drug, which has become a double edged sword, made it vulnerable to an alarming proportion with constantly rising instances of abuse and misuse.^[2]

In the Indian market, at least 18 different corticosteroid molecules, ranging in potency and activity from mild to super-potent, are available for topical use on the skin.^[3]

TC misuse is well known and has been the subject of studies mainly from Africa^[4] and other Asian countries.^[5,6] In India, misuse of TCs on face is quite prevalent. Misconception among mass regarding TCs as magical fairness and antiacne cream and free availability over the counter in India adds to the woes, thereby increasing the risk of local and systemic side effects in people who take them without Dermatologist's prescription. The aim of this study was to ascertain the magnitude, clinical features and demographics of TC misuse on the face in Jharkhand in order to raise awareness of this problem in the dermatology community and society at large.

Materials and Methods

A questionnaire-based analysis was done among patients attending Outpatient Department (OPD) of Dermatology in a tertiary care hospital in Jharkhand between January 2017 and December 2017. Patients of any age and of both sexes were recruited consecutively after taking informed consent.

Inclusion criteria

All patients presenting with facial dermatoses in the recruitment period were questioned regarding the use of any topical preparation on the facial lesions. If the answer was affirmative, the investigator ascertained whether the cream in question contained a corticosteroid. Patients using TC for 4 weeks or more were included in the study.

Usage of a TC continuously for a minimum duration of two weeks was considered as continuous use. Use of a TC intermittently over the past four weeks was considered as intermittent use. Use of TC without proper indication was considered as inappropriate use.

Exclusion criteria

Patients suffering from polycystic ovarian disease, Cushing's syndrome, chronic alcoholism, depression, or drug intake who may have features that resemble the side effects of TC.

Detailed history regarding the facial dermatosis was taken in all the patients. Information regarding academic qualification, marital status was obtained. In the patients recruited in the study, questions were asked regarding the source of information about the TC, indication of use and duration of use. Then the patients were clinically examined to find out the local adverse effects (if any) due to use of TCs on face.

Statistical Analysis

The data were analysed using descriptive statistics and summarized as percentages for categorical and dichotomous variables. Discrete variables were compared using Student's *t*-test and continuous variable were compared using the Chi-squared test. Significance levels were $P < 0.05$.

Results

In all, 3026 patients with facial dermatoses attended the OPD over the study period. Of these, 743 patients or 24.6% were found to be using TC on their face. Of the total 743 patients observed, 506 (68.1%) were females and 237 (31.9%) were males. 274 patients (36.9%) were of age group 20-29 years, 231 patients (31.1%) between 10-19 years and 97 patients (13.1%) between 30-39 years. No patients were below 10 years of age. [Table 1]

156 patients (21%) used creams containing combination of TC, antibiotic and antifungal, 139 patients (18.7%) used creams containing combination of TC and salicylic acid, 135 patients (18.2) used Triple combination. Only 67 patients

(9%) used creams containing TC alone. [Table 2] 423 patients (56.9%) were advised to apply TC containing creams on face by non-physician sources. Among them 82 patients (19.4%) bought TC or TC containing creams over the counter on their own, without the prescription of any physician or dermatologist, 68 (16.1%) were recommended TC by a beautician (beauty parlors), 156 (36.9%) by their friends, family members, or neighbours and 117 (27.7%) by the pharmacist/shopkeeper. 238 patients (32%) were advised to apply TC or TC containing creams on face by physicians. Among them, 77 (32.4%) by a non-dermatologist registered medical practitioner, 62 (26.1%) by a quack and 99 (10.2%) by a dermatologist [Tables 3].

The most common reason for patients' use of TC on the face was as a fairness cream in 129 patients (17.4%), facial rash in 102 patients (13.7%), as depigmenting agent in 92 patients (12.4%), as anti-acne cream in 87 patients (11.7%). [Table 4]

The pattern of use of TCs was further elucidated and analysis of data revealed that 438 patients (59%) used these products on their face regularly whereas the rest used them intermittently. The duration of use varied widely, ranging from 1 week to 12 years. Patients using TC for 4 weeks or more were only included. Details of duration of use are presented in Table 5.

Localized adverse effects were noted [Table 6]. Steroid-induced erythema [Figure 1] was seen in 193 patients (25.9%), followed by steroid-induced acne [Figure 2] in 175 patients (23.6%), tinea incognito [Figure 3] in 90 patients (12.1%), hypertrichosis [Figure 4] in 77 patients (10.4%) and perioral dermatitis [Figure 5] in 69 patients. (9.3%)

Table 1: Age distribution of study subjects

Age Group	No. of Study Subjects	Percentage (%)
0-9	0	0
10-19	231	31.1
20-29	274	36.9
30-39	97	13.1
40-49	69	9.3
50-59	60	8.1
>60	12	1.6

Table 2: Composition of topical corticosteroid-containing products used on the face

Composition	No. of Study Subjects	Percentage (%)
Topical Steroid Alone	67	9
Steroid+ Antibiotics	119	16
Steroid+ Salicylic Acid	139	18.7
Steroid+ Antibiotic+ Antifungal	156	21
Steroid+ Antifungal	127	17.1
Steroid+ Depigmentary Agents	135	18.2

Table 3: Use of TG on face advised by

Source	No. of Patients	Percentage (%)
Non-Physician Source	423	56.9
Physician Source	238	32
Don't Remember	82	11

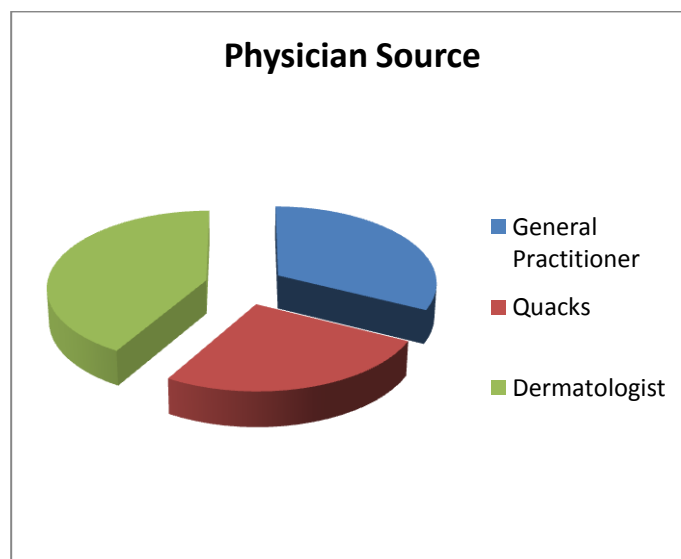
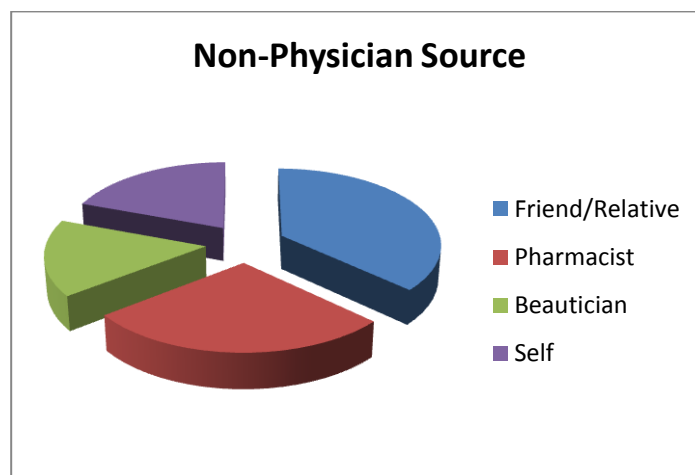


Table 4: Indication for use of TG on face

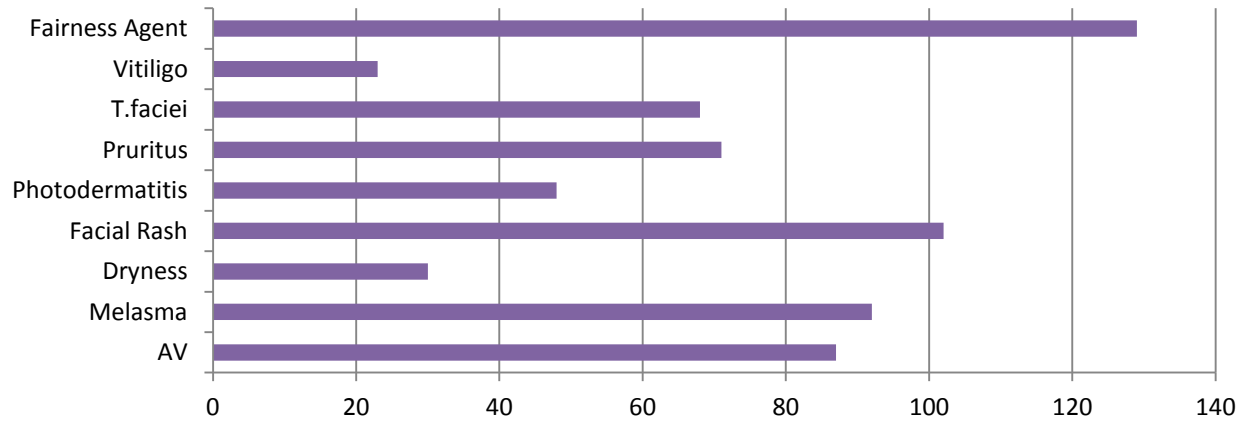


Table 5: Duration of topical corticosteroid use on the face in the study subjects

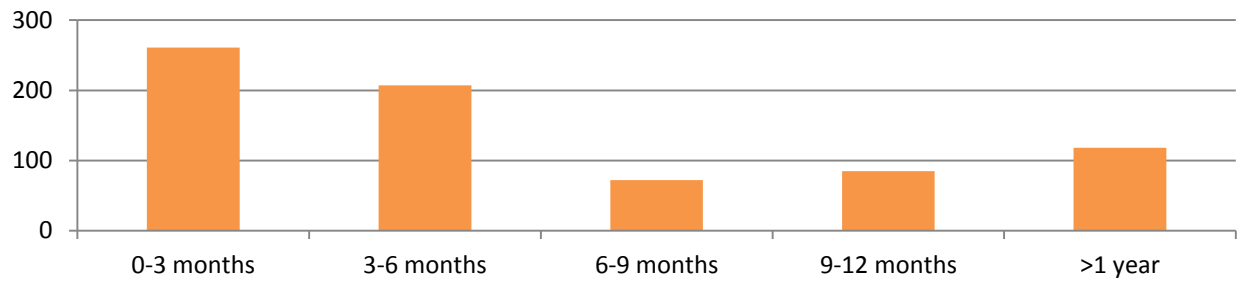


Table 6: Local adverse effects seen in the study subjects

Adverse Effect	No. of Study Subjects	Percentage (%)
Acneiform Eruption	175	23.6
Telangiectasia	54	7.3
Hypopigmentation	41	5.5
Tinea incognito	90	12.1
Atrophy	34	4.6
Folliculitis	48	6.5
Erythema	193	25.9
Perioral dermatitis	69	9.3
Rosacea	41	5.5
Hypertrichosis	77	10.4
Rebound phenomenon	23	3.1



Figure 1: Steroid induced erythema



Figure 2: Steroid induced Acne



Figure 5: Perioral Dermatitis



Figure 3: Tinea incognito



Figure 4: Hypertrichosis

Discussion

TCs first came into existence more than 50 years ago, marking the most important milestone in dermatologic therapy owing to potent anti-inflammatory and anti-proliferative effects.^[7] Due to its varied mode of action, TC has been a cornerstone in the treatment of a few facial dermatoses. Peoples' perception of TCs as magical fairness and anti-acne cream along with easy availability over the counter has led to their abuse and misuse. They are often used without a dermatological consultation. Even where dermatologists prescribe TC for an indicated facial dermatosis, there is risk of some patients using TC for prolonged periods, developing delayed local adverse effects.^[8]

During the last few years a number of articles focusing on the issue have been published from India.^[9-17]

In our study population, majority were females. Out of 743 patients 506 were females (68.1%), which was lower than the findings in other published data from India. Saraswat *et al.*^[3] reported 74.1% and Jha *et al.* reported 74.6%.^[8] High cosmetic concern and misconception of TC as a magical fairness or anti-acne cream were probably the contributing factors to female majority. But our study shows that, misuse of TCs is on the rise among male population in our country. In our study, 31.9% of the patients were

male which is higher than that reported by Saraswat *et al.*^[3] and Jha *et al.*^[8]

Of the 433 patients in the study group by Saraswat *et al.*^[3], 36% were of the age range of 21–30 years. Similarly in the study by Jha *et al.*^[8] 33.6% belonged to the age range of 20–29 years. Our study also showed a similar trend with 36.9% of the study population belonged to the age range of 20–29 years.

In our study, majority of the study population used TCs for a duration ranging from 0–3 months. This finding was accordance to the finding of Jha *et al.*^[8]

As recorded in our study, the most common reason for patients' use of TC on the face was as a fairness cream in 129 patients (17.4%). This was followed by use of TCs for curing facial rash in 102 patients (13.7%), as depigmenting agent in 92 patients (12.4%) and as anti-acne cream in 87 patients (11.7%). The findings varied from that recorded by Mishra *et al.*^[18] where the most common indications for TC use were found to be Tinea infection and Lichen planus.

In our study, among adverse effects, Steroid-induced erythema was seen in 193 patients (25.9%), followed by steroid-induced acne in 175 patients (23.6%), tinea incognito in 90 patients (12.1%), hypertrichosis in 77 patients and perioral dermatitis in 69 patients. (9.3%). The findings were in accordance with that reported in other studies from India.^[9-17]

Conclusion and Recommendation

From our study it was found that topical steroid abuse is very much prevalent in our country. Rapidity of symptomatic relief along with portrait of it as a magical fairness cream has been the major reasons for its misuse. The problem is worsened by easy availability of these medications without a proper prescription. In our study it was also found that steroid abuse was more common in younger age group.

As shown by the data in our study, this problem is already significant and urgent steps are the need of the hour to control this problem. Besides, it is a

problem that needs multi-sectorial cooperation in the community to overcome it. Creating public awareness by educating the general public through special media programmes along with educating medical personnel of other disciplines are important steps that could be undertaken. Strict vigilance and control of over the counter selling of TCs without proper prescription must be ensured.

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