

Original Research Article

Topical steroid addiction among paramedical staff: a cross sectional study in a tertiary health care centre

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ABSTRACT

Background: Topical corticosteroid misuse is one of the major causes of concern for dermatologist now-a-days. It is not only prevalent in general population but also among individuals associated with medical profession like paramedical staffs. The aim of the present study was to understand the various causes and demographic profile of paramedical staffs using steroids alone or in combination as fairness creams.

Methods: All paramedical staffs using topical steroids as fairness creams were screened for the exclusion criteria and included in our study.

Results: Females staffs (82.24%) predominated our study group. Betamethasone valerate (46.16%) was found to be the most common topical corticosteroid being misused and the source of recommendation was mostly from pharmacy (37.06%) without any prescriptions.

Conclusions: With increasing misuse of topical corticosteroids it is the need of the hour to evaluate the intensity of the problem, contributing factors and the associated morbidity leading to impaired quality of life, not only in the general population but also among the health care provider.

Keywords: Topical corticosteroid, Topical steroid dependent face (TSDF), Paramedical staffs, Steroid misuse, Red face syndrome

INTRODUCTION

Use of topical corticosteroids (TCS) as a cosmetic modality is nothing less than a slow poison that is steadily gripping the society as a cosmetic epidemic. From a dermatologist perspective it is imperative to evaluate the magnitude of this problem and its associated side effects in patients who have become dependent and are chronically using the topical corticosteroids. Topical corticosteroids are being widely used as cosmetic creams in the society. Prolonged use, without any primary dermatoses, causes local side effects like steroid addiction or topical steroid dependent face (TSDF),

rosacea, acne, hirsutism, striae, thinning of skin, perioral dermatitis, telangiectasia etc. Impaired barrier function of skin contributes to enhanced percutaneous absorption and increased risk of systemic side effects.^{1,2} The factors responsible for increased percutaneous absorption of TCS leading to systemic side effects include larger body surface area (like in children), use of more potent corticosteroids, prolonged and frequent application, application under occlusion and defective barrier function. The easy availability of topical corticosteroids (over the counter) alone or in varying combinations with most chemists and sale of these drugs as fairness creams adds to the magnitude of this cosmetic epidemic. The

social pressure of having a fairer skin adds to the misuse without medical advice.

Hence, the aim of the study was to understand the various causes and demographic profile of paramedical staffs using steroids alone or in combinations as fairness creams and incidence of TSDF among them.

METHODS

It was a cross-sectional study conducted for a period of fourteen months i.e., from April 2017 to March 2018 at IMS and SUM hospital, Bhubaneswar, a tertiary care hospital in eastern part of India. Ethical clearance was achieved from the ethical committee. A total of 286 paramedical staffs were enrolled who were using topical steroids alone or in combinations as fairness creams.

Inclusion criteria

Paramedical staffs having clinical signs and symptoms of TSDF, and using topical steroids alone or in combination solely as fairness creams were included.

Exclusion criteria

Patients having steroid responsive facial dermatoses, patients on oral contraceptive pills, oral steroids, topical preparations containing Kligman’s formula, drugs causing acneiform eruptions like antipsychotics, antiepileptic drugs etc., having endocrine disorders and patients of rosacea before using topical steroids.

After taking written consent all the patients were subjected to detailed history taking and clinical examination. They were provided with a questionnaire to fill up on their own.

Statistical analysis

The data was entered in Microsoft Excel 2007 and analyzed using SPSS version 21 [PASW statistics for Windows, Chicago: SPSS 10C]. Chi-square test was used to see the statistical significance. Statistical significance was defined as a p value less than 0.05.

RESULTS

A total of 286 patients were studied for their socio-demographic profile leading them to abuse of steroid creams for skin fairness. Most [88 (82.24%)] of the patients were females and all the patients were equally distributed in the age group ranging from 15 to 45 years (Table 1). With a significant p value 0.0035 young women between 15-25 age group are the most common age group population affected by the steroid abuse. The different steroids commonly used were betamethasone valerate in 132 (46.16%) patients, clobetasol propionate in 78 (27.27%), mometasone furoate in 56 (19.59%), hydrocortisone in 12 (4.19%) and fluticasone propionate

in 8 (2.79%) patients in decreasing order of frequency (Table 2). The source (Table 3) from which the drug was advised was pharmacy in 106 (37.06%), family and friends in 86 (28.68%), social media in 46 (16.08%), general practitioners in 26 (9.09%), beauty parlors in 21 (7.35%) and by dermatologist in 5 (1.75%) patients. The average duration of continuous steroid use (Table 4) was 3 to 6 months in 133 patients, upto 3 months in 76 patients, 6 to 12 months in 49 patients and more than 12 months in 28 patients before they seek medical advice.

Table 1: Demographic profile of topical steroid dependent face paramedical staff.

Age (in years)	Sex (Male/female)	Total no. of patients
15-25	41/76	117
26-35	26/67	93
36-45	10/66	76

P=0.0035, where the result is significant at p<0.05.

Table 2: Pharmacological composition of the formulations used.

Composition	N (%)
Clobetasol propionate	78 (27.27)
Betamethasone valerate	132 (46.16)
Mometasone furoate	56 (19.59)
Fluticasone propionate	8 (2.79)
Hydrocortisone	12 (4.19)

Table 3: Recommended source of the drug.

Source	N (%)
Pharmacy	106 (37.06)
General practitioner	26 (9.09)
Dermatologist	5 (1.74)
Beauty parlors	21 (7.35)
Social media	46 (16.08)
Family and friends	86 (28.68)

Table 4: Duration of use of the drugs.

Duration of continuous use	N (%)
Upto 3 months	76 (26.57)
3-6 months	133 (46.50)
6-12 months	49 (17.14)
>12 months	28 (9.79)

Table 5: Different paramedical staffs.

Paramedical staff	No. of staffs N (%)
Staff nurses	117 (40.90)
Pharmacist	73 (25.54)
Laboratory technicians	96 (33.56)

In our study population of 286 number of steroid damaged face, staff nurses were the maximum in

numbers 117 (40.90%), 73 (25.54%) were pharmacists and 96 (33.56%) were laboratory technicians.

Table 6: Clinical presentation of topical steroid dependent face.

Clinical presentation	Male	Female	No. of patients n=286 (%)
Facial redness	56	112	168 (58.74)
Acne	40	86	126 (44.05)
Increased facial hair	20	48	68 (23.70)
Burning sensation	17	23	49 (17.13)
Acneiform eruptions	26	12	38 (13.29)
Facial darkness on drug withdrawal	17	18	35 (12.23)

*** P=0.0004, <0.05 is significant.

The common complaints (Table 6) encountered in the patients following continuous steroid use were persistent facial redness in 168 (58.74%) patients (Figure 1), acne (Figure 2) in 126 (44.05%), increased facial hair (Figure 3) in 68 (23.70%), burning sensation and acneiform eruptions in 38 (13.29%) patients each and facial darkness (Figure 4) on drug withdrawal in 35 (12.23%) patients. Topical steroid abuse had a myriad of presentation in the study where facial redness, increased facial hair and burning sensation were more prevalent whereas acne form eruptions were more common in male patients with a significant p value of 0.0004 in the study population.



Figure 3: Increased facial hair with hyper pigmentation.



Figure 1: Persistent facial redness in topical steroid dependent face patient.



Figure 4: Facial hyperpigmentation post drug withdrawal in topical steroid dependent face patient.



Figure 2: Acne along with increased facial hair in topical steroid dependent face patient.

DISCUSSION

Corticosteroids are one of the most widely prescribed topical drugs. However, rampant misuse and abuse in the face through years lead to plethora of symptoms and signs which is known as topical steroid-damaged/dependent face (TSDF).⁴ It is not only prevalent in general population but also common among individuals associated with medical profession- the paramedical staffs as staff nurses, laboratory technicians and pharmacists. A paramedical staff mostly pharmacist

are the most responsible person who recommend the patient to use topical steroid. So this study of steroid addiction and abuse among them inspire an approach for helping the helpers of health care providers.

However there is dearth of literature and there are hardly any empirical studies about the topical steroid abuse in paramedical staff.

Misuse and prolonged use of the medicine without medical supervision particularly on the face produce different adverse effects such as steroid rosacea, acneiform eruption, hypertrichosis, demodicidosis, steroid addiction dermatitis rosaceaformis steroidica and red face syndrome.^{5,6,8,10} 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.^{7,9} This type of condition is also named as topical steroid damaged/dependent face (TSDf).⁴

In our study among 286 paramedical staffs, a female predominance (73.07%) was noticed as expected by the craze to look fair in this gender. The mean age at presentation was 31.27 years and patients were equally distributed among 15 to 45 years of age. Saraswat et al in their study found statistically significant higher ratio of females using topical corticosteroids on the face as compared to the screening group and the mean age of patients using topical steroids on face was 28.3 years, which is comparable to our findings.³ Hameed et al also found a higher female to male ratio (4.7: 1) and the mean age at presentation was 29.6 years in their study. The mean duration of use of topical corticosteroids in our patients was 8.05 months ranging from 3 to 30 months.¹⁰ Different studies found the duration of use ranging from 1 week to 30 years and 3 months to 10 years. 97 (33.91%) of paramedical staff were using the topical corticosteroid as depigmenting cream and 78 (27.27%) were using as treatment of acne.^{3,10} Betamethasone valerate 0.1% was the most common (46.16%) corticosteroid found to be used in our study group followed by clobetasol propionate (27.27%) and mometasone furoate (19.59%). Hydrocortisone (4.19%) and fluticasone propionate (2.79%) were rarely used. Betamethasone valerate being a cheaper corticosteroid could have been the cause of frequent use in our patients. Our patients showed a trend of using potent corticosteroids causing more side effects rather than steroids with less potency having safer side effect profile. Saraswat et al also found betamethasone valerate 0.1% to be the most common (50.1%) topical steroid being used on face, either alone or in combination.³

The source of recommendation of the drug in our study was from non-physician in 255 (89.16%) out of 286 patients, whereas only 31 patients were prescribed by physicians. Out of 255 patients recommended by non-physicians, 106 (37.06%) were recommended by pharmacist, 86 (28.68%) by family and friends, 46

(16.08%) by social media and 21 (7.35%) by beauty parlors. Saraswat et al in their study recognized 59.3% of the recommendations for topical steroid were from a non-physician source. Out of the non-physician source, 50.2% were from friends and relatives and 26.8% were from the pharmacist. In contrary Hameed et al found beauticians (34%) to be the most common source of recommendation of topical steroids and friends and relatives (2% each) rarely recommended.^{3,10} The increased incidence of pharmacist, family and friends recommending the drug for fairness purpose may be due to the high cultural bonding among Indian families leading to blind faith on personal experience and also easy accessibility of the drugs over the counter because of loose drug dispensing rules in India.

The common causes of medical consultation following drug abuse in our patients were persistent facial redness 168 (58.74%) and acne 126 (44.05%). Other less common complaints were increased facial hair, burning sensation, acneiform eruptions and facial darkness on drug withdrawal as described in the table. Acne (57.5%) was also the common local adverse effect seen by Saraswat et al, whereas Hameed et al found diffuse facial redness with hotness (93%) to be the most common presentation in their patients.^{3,9} So our findings are comparable with previous studies.

CONCLUSION

In an endeavour to have a fairer skin, both the general community and health care providers are obsessed with the overuse and misuse of steroid formulations. The paramedical staffs with topical steroid damaged face contribute to a sizeable portion of steroid abuse patients attending the daily outpatient department. However there is a paucity of literature evaluating the incidence of steroid abuse as cosmetic agent among the paramedical staff. Our study highlights the rising incidence of unsupervised topical steroid use among health care providers.

Spreading awareness and doing regular counselling to the paramedical staff about the hazards of topical steroid abuse will indeed be a great initiative and may bring about a substantial change in current scenario of steroid misuse among the general population in our country.

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