

A STUDY ON CLINICAL PROFILE OF TOPICAL STEROID DAMAGED FACE (TSDF)

Dermatology

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ABSTRACT

Background: More than three centuries of colonization by the Britishers FP Type 1 & 2 skin has brushed off so much on the Indian mindset that there is no limit to our obsession with fairness. In the quest to achieve the fairness quotient the use of topical corticosteroid (TC) continues unabated giving rise to this menace in dermatology "TSDF", unique to Indian subcontinent.

Methods: A total of 61 patients aged 11 and above who have used TC incorrectly, presented with the side-effects during period of 1 year from December 2018 to November 2019 were evaluated.

Result: Age group 21-30 years was most commonly affected. TCs were commonly abused more by females. Mostly prescription sources were from a medical store "OTC". Most commonly used TC was Betamethasone valerate. Searching for facial fairness was the most common reason for use of TCS. Pigmentation (20.22%), was the most common cutaneous side-effect.

KEYWORDS

TSDF, Fairness, OTC

INTRODUCTION

Corticosteroids are potent drugs with widespread actions ranging from anti-inflammatory, immunosuppressive to anti-pruritic and melanopenic effects on skin. TC if used under medical supervision, can be of enormous benefit. But this magic drug can cause enough mischief if used inappropriately and soon proved to be a *double-edged sword*.

This lead to an emerging pharmaceutical industrial market of manufacturing multipurpose TC creams resulting in a vicious circle of increasing demand and cheap supply ending in abuse. After an alarming rise TC abuse this entity was labelled as "Topical steroid-dependent/damaged face" (TSDF) in 2008. It is defined as "semi-permanent or permanent damage to face precipitated by indiscriminate, unsupervised, irrational, or prolonged use of TCs resulting in a plethora of cutaneous signs and symptoms and psychological dependence on the drug"^[1].

Why the face ??

Facial epidermis is *comparatively thinner* i.e. 0.12 mm than the rest of the body which is 0.60 mm thick. This results in increased percutaneous absorption of drugs^[2]. Also, face has a *profuse blood supply* which increases incidence of side effects. Last but not the least face is the most visible part of the human body making it vulnerable to the ill effects of *Environmental factors*- sunlight, pollution

Social factors- praise, comments and "medical advise" from variety of laymen throughout life.

Thus leading to imprudent use of numerous substances and drugs such as cosmetics and topical steroids.

MATERIAL AND METHODS

This was a Prospective observational study conducted in the OPD of Dermatology, Venereology & Leprosy of Teerthanker Mahaveer Medical College & Research centre, a tertiary care hospital in Moradabad (UP) from December 2018 to November 2019 on sample size of 61 patients.

SELECTION OF SUBJECTS:

The patients who had applied TCs on face

- Incorrectly, either for conditions in which steroids are -
- not indicated or
- if indicated, the dose and/or the duration of application was not appropriate)
- Used steroids by self or in advise from non-dermatologist or dermatologist for prolonged period of time (>2weeks)
- Presented with adverse effects of TC as chief complaints.
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INCLUSION CRITERIA-

1. Voluntary participation.
2. Patients aged 11 years and above, of either gender will be incorporated in the study.

3. Patients who have applied TC more than 2 weeks without consultation of a dermatologist leading to its side effects.
4. The patient should be applying steroid on face till the day of presentation to the OPD or if stopped, not more than 15 days before.

EXCLUSION CRITERIA-

1. Individual who was unwilling to participate.
2. Pregnant and lactating patients.
3. All patients complaining of facial dermatoses (xanthelasma, DPN, melanocytic nevi, and tumors of the adnexa)
4. Patients who were on oral steroids for any reason.
5. Subjects with comorbidities similar to or could cause changes similar to TC adverse-effects (example- Cushing's syndrome or polycystic ovaries).
6. All cases applying TC on the face, with the known disease entity in which they were commonly used and indicated.

STUDY PLAN:

- Subjects satisfying the inclusion criteria and giving informed consent were selected for the study.
- Patients were interviewed directly and details were noted according to a pre-planned questionnaire.
- Patients with relevant facial dermatoses were asked about -
- Age, sex, detailed clinical history of steroid application, source of prescription, reason of misuse and the presenting side effects.
- Counselling and management was then started.

OBSERVATIONS AND RESULTS

The study was done on a total of sixty one clinically diagnosed cases of TSDF.

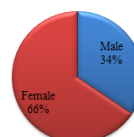
Table-1: Age Wise Distribution

Age Group (in Years)	No. Of Patients	Percentage %
11-20	13	21.31
21.-30	22	36.07
31-40	19	31.15
41-50	5	8.20
>50	2	3.28
Total	61	100

Maximum cases of TC misuse falls in age group 21-30 years.

Table-2: Gender Wise Distribution

GENDER

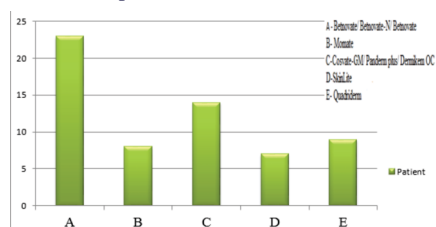


- Females (65.57%) have abused steroids more than males.

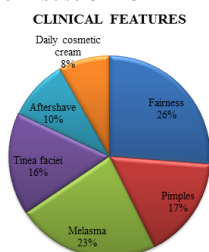
Table 3: Source Of Prescription

PRESCRIPTION SOURCE	NO. OF PATIENTS	PERCENTAGE %
Self-medication/ Relatives/Friends	17	27.87
Beautician/Quack	14	22.95
Pharmacist	23	37.70
Doctors (not dermatologist)	5	8.20
Dermatologist	2	3.28
Total	61	100

- OTC supply of topical steroid creams mainly by the pharmacist (37.70%) remains the leading cause for unsupervised application of drug on face.

Table-4: Brand Of Topical Steroid Used

- 23 amongst 61 patients used betamethasone valerate 0.1%.

Table-5: Indication For Abuse Of TC

- Most common indication for using TC was for the purpose of achieving fairness.

Table-6: Clinical Features Of Tc Abuse

CLINICAL FEATURES	NO. OF PATIENTS	PERCENTAGE %
Acneiform eruptions	29	15.85
Rosacea-like features	13	7.10
Atrophy	15	8.20
Telangiectasia	15	8.20
Hypertrichosis	17	9.29
Pigmentation (hypo-hyper)	37	20.22
Erythema	16	8.74
Photosensitivity	14	7.65
Tinea Incognito	11	6.01
Pruritus	16	8.74
Total	61	100

- The most common side effect seen was Pigmentation (hypo-hyper) 20.22%.

**Figure 1 Person with hyperpigmentation of face on using the depicting steroid cream on a daily basis for a period of 9 months****Figure 2 Steroid Induced Acne On The Face Characterized By Papules And Pustules.**

DISCUSSION

Following the first case series study on topical corticosteroid abuse in India, published in 2006, various authors have tried to spotlight the menace caused by its misuse.

In this study, maximum number of patients belonged to the age group of 21-30 years which is in concordance with the study done by Nyati A et al^[3] and Saraswat et al^[4].

Out of 61 patients enrolled in our study, 40 (65.57%) are females and 21(34.43%) are males. Our study was in accordance with other national and international studies^{[5][6]}.

37.70% patients bought TC creams from OTC by the commendation of a chemist in our study. Adherent advice from a relative or friends was the second most common prescription source for steroid application which made the patient succumb to its reuse. These findings are similar to studies done in India by Meena S et al.^[7], and Jha AK et al.^[8].

In our study it was seen that Betamethasone valerate was the most common TC used by our subjects. Surprisingly almost all of the patients remembered the brand name BetnovateTM. This may be due to betnovate being the most cost-effective and easily available amongst TC of all.

Ample amount of patients applied TC on their face to lighten the skin colour and achieve a fair and lovely skin. This finding was comparable to a study done by Dey VK et al.^[9].

Pigmentation disorders (20.22 %) were the most common dermatological adverse effect noted in our study which were in synchrony with a recent study done in 2017 on misuse of TC for Cosmetic Purpose in Antananarivo, Madagascar^[10]. However, in some other Indian studies having a large sample size than ours quoted acneiform eruptions as the commonest side effect^{[3][6]}.

CONCLUSION

TC are one of the most widely prescribed medicament all over the world. The discovery of TC revolutionized the treatment of several steroid responsive dermatosis. TCs were hailed as the mystical cure for all ills by physicians and patients and thus gained expeditious popularity. Usually the person starts applying TC creams on face for primary skin alteration but with continuous misuse develops the steroid dermatitis. To add to their excellent therapeutic efficacy these drugs were easily accessible and available with various combinations giving rapid symptomatic relief and thus speeding its abuse. This rampant use and misuse of TC creams on face through decades led to a plethora of signs and symptoms which ultimately came to be known as TSDF.

Extended and uninterrupted use of TC can give rise to "red face" which clinically in dermatology, presents as TSDF.

Inappropriate advertisement by manufacturers, obtainability of steroids without prescription, repeated refilling of the doctors prescription by a chemist, and a beauty advice from a parlour or a friend has led to the rapid emergence of Topical Steroid Dependent Face.

Amongst all, Betnovate is the most common misused brand of TC and stands as the king of the territory of topical steroids spanning six

decades.

Our study revealed that

- Age group 21-30 years was most commonly (36.07%) affected.
- TCs were commonly abused more by females (65.57%) as compared to males.
- The use of TC was attributed to OTC supply mainly by the advice of the pharmacists (37.70%).
- Searching for facial fairness (26%) was the most common reason for which the TCS was used by patients.
- Cutaneous side-effects analysed were as follows:- pigmentation(hypo-hyperpigmentation in 15.85%, acneiform eruptions in 15.85 %, hypertrichosis in 9.29 %, erythema in 8.74 %, pruritus in 8.74 %, cutaneous atrophy in 8.20%, telangiectasia in 8.20%, photosensitivity in 7.65 %, rosacea-like features in 7.10%, tinea incognito in 6.01% cases.

Misuse of steroids topically is an imperative public health problem involving several sectors. This menace requires multi-variate interventions, including scholastic, legal and supervisory approaches with cooperation from different sectors of society.

Thus, we could categorically conclude that beauty in India is inextricable with fairness and hence there is need to educate general public about the myth of considering 'fairness' as a measure of beauty. To counter this TSDF menace, legislation to the effect that TC cannot be dispensed without a prescription of a dermatologist, exclusively.

REFERENCES

- [1] Lahiri K, Coondoo A. Topical steroid damaged/dependent face (TSDF): An entity of cutaneous pharmacodependence. *Indian J Dermatol* 2016;61:265-72.
- [2] Aieska De Souza & Bruce E. Strober, Principles of Topical Therapy, Fitzpatrick's Dermatology in General Medicine, eighth edition vol.2 pg no. - 2643-68.
- [3] 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.
- [4] Saraswat A, Lahiri K, Chatterjee M, Barua S, Coondoo A, Mittal A, Panda S, Rajagopalan M, Sharma R, Abraham A, Verma SB, Srinivas C R. Topical corticosteroid abuse on the face: A prospective, multicenter study of dermatology outpatients. *Indian J Dermatol Venereol Leprol* 2011;77:160-6
- [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] Hariharasubramony Ambika, C. Sujatha Vinod, Harikishan Yadalla, Raghunath Nithya, Anagha Ramesh Babu: Topical corticosteroid abuse on the face: a prospective, study on outpatients of dermatology. *Our Dermatol Online*. 2014; 5(1): 5-8.
- [7] Meena S, Gupta LK, Khare AK, et al. Topical Corticosteroids Abuse: A Clinical Study of Cutaneous Adverse Effects. *Indian J Dermatol*. 2017;62(6):675. doi:10.4103/ijdd.IJD_110_17.
- [8] Jha AK, Sinha R, Prasad S. Misuse of topical corticosteroids on the face: A cross-sectional study among dermatology outpatients. *Indian Dermatol Online J*. 2016;7(4):259–263. doi:10.4103/2229-5178.18549.
- [9] Dey VK. Misuse of topical corticosteroids: A clinical study of adverse effects. *Indian Dermatol Online J* 2014;5:436-40
- [10] Sendrasoa F.A., Ranaivo I.M., Andrianarison M., Razanakoto N.H., Ramarozatovo L.S. Misuse of topical corticosteroids for cosmetic purpose in Antananarivo, Madagascar. *Biomed. Res. Int*. 2017;4. 9637083