

## Misuse of topical corticosteroids over face - A Clinical study in a tertiary care hospital, Jharkhand.

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### Abstract –

**Background-**Topical corticosteroids (TCS) have been widely used in various dermatological diseases. The use of topical steroids on the face should be carefully evaluated by the dermatologists.

**Aim –** To evaluate the different clinical manifestations of steroid dermatitis and to discover the causes behind abusing topical steroids on the face.

**Methods-** In this observational study, 80 patients with facial dermatosis following the misuse of TCS on the face were studied. Detailed history was noted and the various side effects were recorded.

**Results –** majority of the patients (75%) were females with maximum number of patients belonging to the age group 21-30 years. Facial redness and hotness, telangiectasia and rebound phenomenon with papulopustular eruption were the main clinical presentations. The most common cause of using topical steroid on the face were pigmentary problems and acne through recommendations from nonmedical personnel.

**Conclusion –** Topical steroid should not be used on the face without dermatological supervision. It is time to create awareness among the patients as well as doctors regarding the proper use of TCS.

**Keywords-** face, misuse, topical corticosteroids, awareness.

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### I. Introduction

Since their introduction almost 50 years ago, TCS have made a dramatic contribution and been the mainstay of dermatological treatment of a wide range of non-infectious diseases (1,2). TCS are among the most commonly prescribed medications in general practice. The clinical effects are mediated by their anti-inflammatory, vasoconstrictive and immunosuppressive properties. These result from their ability to exert multiple effects on various functions of leukocytes and epidermal and dermal cells (3,4).

Use of TCS over the face produces peculiar adverse effects such as steroid rosacea, acneiform eruptions, hypertrichosis and demodicosis. Some of the side effects on the face have also been termed as red face syndrome (5). Steroid-induced rosacea is characteristically seen on centrofacial, perioral, and periocular regions and present with monomorphic inflammatory papules and pustules.

### II. Material And Methods

The study was conducted in the outpatient department of dermatology at R.I.M.S hospital, Ranchi, Jharkhand during July, 2019 to December 2019 after obtaining informed patient consent. Patients of all ages and both sexes were recruited for the study.

Patients details were noted by a dermatologist about – age, gender, qualification, type of TCS used, duration of application, source of prescription, social background, indication, total amount applied, and adverse effects of TCS application.

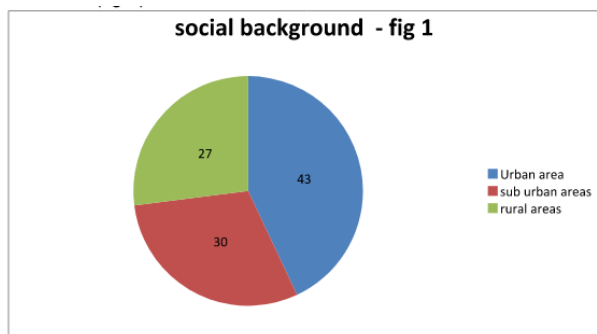
The various side effects described, included steroid dependent face (rebound flare of itching, redness, pustules, acneiform eruptions on treatment withdrawal, predisposing the patient to depend on TCS), Steroid-induced rosacea (Characterized by diffuse facial erythema, telangiectasis along with papulonodular lesions and scaling over the face).

### III. Results

A total of 80 patients were included in the study, out of which 60 were females and 20 were males. Age of the patients in our study from 10 to 48 years. Maximum number of the patients (45) were from the age of 21-30 years, followed by 21 patients in the age group of 31-40 and 10 in the group of 11-20 years. The youngest patient was 12 year old female child. (Table 1)

Age distribution ( years)	Number of patients
11-20	10
21-30	45
31-40	21
41-50	4

43% of the patients were from urban areas, 30% belonged to suburban and 27% from rural areas. Majority (80%) of the patients were educated. (fig 1)



Combination formulations ( along with antibacterials , antifungal agents ) were used by majority (54%) of the patients . Most common TCS used by our patients was clobetasol propionate 0.05% . Details of the TCS used by our patients , along with the composition and potency are mentioned in Table 2.

Composition	Potency	Number of patients
Clobetasol propionate 0.05% plus gentamycin 0.1% plus miconazole nitrate 2%	Class 1	32
Betamethason valerate 0.1% plus gentamycin 0.1% plus miconazole nitrate 2%	Class 3	22
Betamethasone valerate 0.1%	Class 3	11
Betamethasone valerate 0.1% plus neomycin sulphate 0.5%	Class3	8
Mometasone furoate 0.1% plus hydroquinone 2% plus tretinoin 0.025%	Class 4	4
Clobetasol propionate 0.05%	Class 1	2
Betamethasone valerate 0.1% plus gentamycin 0.1% plus tolnaftate plus cliquinol	Class 3	1

The main reasons for using TCS included lightening of the skin in 52 (65%) patients and mild acne in 14 (17.5%) patients . some patients indicated > 1 reasons for using these medications . ( Table 3)

Indications of steroid application		Number of patients
Fairness cream	30	
Melasma	15	
Acne	14	
General face cream	12	
Tinea	8	
Undiagnosed	1	
Source of drugs		Number of patients
Paramedical personnel		33
Self, friends or relatives		24
Pharmacists		18
Non -dermatologists		4
Dermatologist		1

Duration of TCS in our study ranged from 2weeks to 5 years . 70 % of the patients were using it on a daily basis while the remaining 30% in an intermittent manner .

The dermatological abnormalities seen after application of topical corticosteroids are listed in Table : 4, Acne , puffy face with telangiectasia were the most common adverse effects noted .

Condition	No. of patients	Percentage (%)
Facial acne	24	30
Telangiectasia	16	20
Facial hypertrichosis	13	16.25
Facial hypermelanosis	17	21.2
Cutaneous atrophy	10	12.5



Figure 1: hyperpigmentation induced over face due to TCS application daily For 8 months



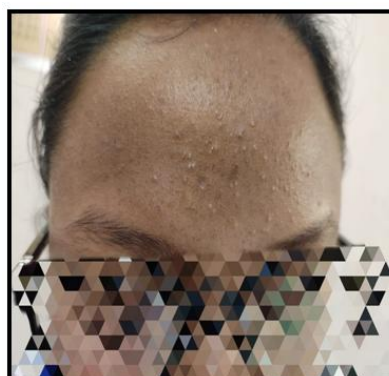
**Figure 2:** Despigmentation over face due to triple combination application daily for fairness .



**Figure 3:** cutaneous atrophy and telangiectasia over face .



**Figure 4:** hypertrichosis visible over face.



**Figure 5:** Acneiform eruption over forehead .



**Figure 6:** TCS applied over tinea faciei .

#### IV. Discussion

TCS are the treatment of choice for various dermatological disorders, when it is used on the appropriate site and in proper concentration for appropriate duration. TCS should not be used over face except for acute inflammatory conditions provided that it will be not used for more than one month. (6,7)

The pharmacological properties of steroids like anti-inflammatory and vasoconstrictive effects causes the suppression of primary dermatosis and this will encourage the patients to continue on the TCS use without the supervision of medical authorities.

About half of the patients were in 21-30 years age group. This was probably to be expected as this is the period when young people start to take care of their appearance.

The most commonly used preparation were potent or super potent steroids and their combinations with other cosmeceuticals. The authorization of TCS prescription must be restricted only for the licensed dermatologists and the easy intake from pharmacies should be controlled.

Pigmentary problems like melasma, freckles, lentigens and searching to have fairer look are the main motivators for the clients to use TCS on their face. SARASWAT ET AL. reported the steroid combinations (mostly potent and superpotent TCS) are the most commonly abused preparation on the face where the most common indication was to achieve fairness.

Development of tachyphylaxis necessitates increment in dose and further emergence of side effects of TCS including diffuse erythema, papulopustular eruption, telangiectasia, dry skin and rebound phenomenon. In this study, the main burden of misuse of TCS was put on paramedical personnel and friends.

In conclusion the misuse of TCS is a multiphase problem that needs the cooperation of different sectors in the community to overcome it. Education of common public through special media programmes and the introduction of a continuing medical education programmes for medical and paramedical personnel.

#### Limitations -

Main criticisms can be made of our study are:

- 1) Most of the data were recorded using a questionnaire and there may have been false information about the source of prescription of TCS.
- 2) Many patients did not know what topical creams were until they were shown samples of the drugs. This could have led to an underestimation in our evaluation of the frequency of the practice.

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