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

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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
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 following signs: acne form eruption, rebound phenomenon, hypermelanosis, hypertrichosis, telangiectasea and hypopigmentation.

Patients were interviewed directly by the dermatologist using an anonymous questionnaire. Questions covered age, sex, address, education level, regular or intermittent 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.”          | 285 (42.53)        |
| “Medical Store”              |                    |
| 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%                                                 | 351 (52.39%)       | III                                 |
| Betnovate-N Cream   | Betamethasone valerate 0.1%, neomycin sulphate 0.5%                         |                    |                                     |
| Betnovate-C Cream   | Betamethasone valerate 0.1%, clioquinol 3%                                  |                    |                                     |
| SkinLite Cream      | Mometasone Furoate (0.1%), Hydroquinone (2%), Tretinoin (0.25%)              | 181 (27.01%)       |                                     |
| Noscare Cream        | Same as above                                                               |                    |                                     |
| Momate Cream        | Mometasone Furoate 0.1%                                                     | 15 (2.23%)         | IV                                  |
| Panderm plus Cream  | Clobetasole Propionate (0.05%), Ofloxacin (0.75%), Ornidazole (2%), Terbinafin HCl (1%) | 107 (15.97%)       | I                                   |
| Cosvate GM Cream    | Clobetasole (0.05%), Gentamycin Sulphate (1%), Myconazole (2%) clioquinol 3% |                    |                                     |
| 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    |

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

|                  | Potent | Milder potent |
|------------------|--------|---------------|
| Non physician    | 308    | 132           |
| Physician        | 150    | 80            |

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

|                  | Potent | Milder potent |
|------------------|--------|---------------|
| Female           | 334    | 155           |
| Male             | 124    | 59            |

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
telangiectasia (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.

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).
betamethasone valerate (betnovate) used for face as beauty, fairness and all-purpose cream. Third most was mometasone, hydroquinone and tretinoin 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 rosaceaiform 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 issues 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.

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