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Original Article

Topical corticosteroids: Abuse and Misuse

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ABSTRACT

Background: The Topical Corticosteroids are among the most commonly prescribed medication in an out-patient dermatology setting since they were first introduced in early 1950s.Probably no other group of drugs has had such a profound impact on the specialty as Topical Corticosteroid. They provide rapid symptomatic relief in almost all inflammatory dermatoses, especially in the short term. Multiple pathways including rebound vasodilatation and proinflammatory cytokine release have been proposed as the mechanism for such reactions. **Aim:** To study various adverse effects of topical corticosteroids misuse over face. **Materials and Methods:** 130 patients with a history of topical corticosteroid use on face for minimum 1 month duration were included in this study. **Results:** Majority of patients were between age group of 21 to 30 (65.4%).Female sex preponderance over male sex with 67.8%.Majority of patients were House wives (49%) followed by Employees (23%).Duration of application of TC was 3-6 months (77%) in majority of cases. Most commonly abused TC was Betamethasone Valerate (79.2%). **Conclusion:** Topical Corticosteroid should not be used on the face unless it is under strict dermatological supervision.

Key words: Acneiform Eruptions; Erythema; Steroid dermatitis; Topical corticosteroids

INTRODUCTION

Topical corticosteroids (TCS) are of great value in treating a wide spectrum of dermatological diseases and since the time of its introduction in 1951, a new therapeutic era in dermatology has been emerged [1]. The development of super potent corticosteroid in 1974 added more cutaneous diseases to the list of TCS indications. Meanwhile TCS misuse also appeared as a common problem adding a new complication which has been reported by Variety of investigators [2]. Chronic misuse of TCS on the face produced a clinical condition which was described by various names, like light sensitive seborrheid [2], perioral dermatitis [3], rosacea-like dermatitis [4], steroid induced rosacea-like dermatitis [4], Steroid Rosacea [5], and steroid dermatitis resembling Rosacea [6].

PATIENTS AND METHODS

A hospital based, cross sectional study was conducted in the department of Dermatology, Venereology, and Leprosy, P.E.S. Institute of Medical Sciences and Research, Kuppam. A total of 130 patients with facial dermatoses using TC over face for a minimum period of 1 month duration, reported between AUGUST 2012 and JULY 2014 were enrolled in this study. Details about the usage of TC and their side effects were recorded.

Ethical Requirements for Studies Involving live human subjects or animal: accepted by all authors.

Method of collection of data

Inclusion Criteria

1. A total of 130 cases presenting with facial dermatoses resulting secondary to application of a TC were included in the study.
2. Age group between 12 to 50 years.
3. Both sexes.

Exclusion Criteria

1. Patients not giving consent for the study.
2. Patients with pre-existing co morbidities that can

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resemble or could cause changes similar to topical corticosteroid side effects or cases where the topical application in use cannot be confirmed as a corticosteroid. Eg: Cushing syndrome, polycystic ovary disorder, thyroid disorder.

3. Patients with dermatoses papulosa nigra, melanocytic naevi and xanthelasmata.

A particular attention was given to corticosteroid therapy regarding the type, potency, duration of therapy, purpose, and the source of its use. Patients were thoroughly examined for the type of skin, site, erythema (mild, moderate, severe), xerosis, scaling, telangiectasia, hyper- or hypopigmentation, atrophy, wrinkles, comedones, papules, pustules, nodules, and hirsutism. Additional symptoms and signs of skin diseases were noted. The general physical and systemic examination was done on all patients. Medical photographic documentation of the patients was done using digital camera. Formal consent was obtained from each patient after full explanation of the aims and the nature of the study to them and the study was approved by the Ethical Committee of College of PESIMSR, Dr. NTRUHS.

Ethics

This study was performed on human subjects; thus, all patients were aware of the presence of the study and they were fully informed about the drug and its side-effects.

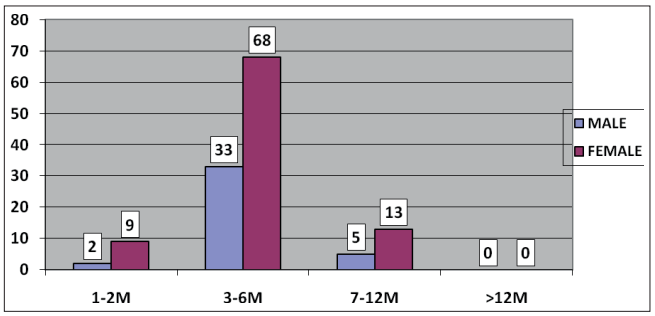
RESULTS

In the study out of 130 cases 85 cases are between age group of 21-30 years with Mean ± SD: 23.92±5.17.The age of youngest patient with TC abuse was 13 years and the age of the oldest patient was 42 years. The most frequently involved age group 21-30 years (65.4%) followed by age group 11-20 years (25.4%) and 31-40 years (7.7%). In the study out of 130 cases 90 were of female sex and 40 were of male sex (Graph. 1). Majority of population belongs to rural areas.

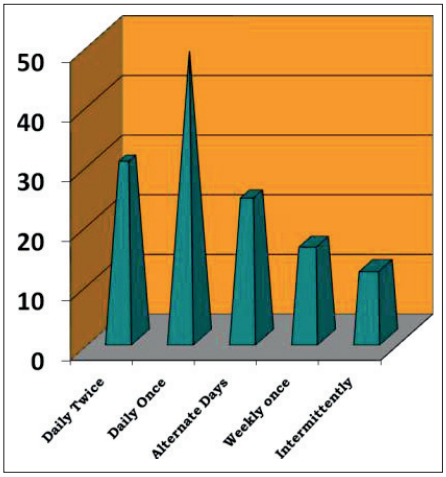
Most of patients are house wives (49.2%) followed by Employee (23.8%), then by student (20.8%) and staff nurse (3.8%). The minimum duration of steroid application over face was 3-6 months (77.7%) followed by 7-12 months (13.8%) and then by 1-2 months (8.5%) (Graph. 1). Majority of cases applied Daily once (37%) followed by Daily twice (23%), then by Alternate days (18.6%) and finally by weekly once (12%) (Graph. 2).

Most commonly used topical corticosteroid was Betamethasone valerate cream (78.5%) followed by Mometasone cream (14.6%), then by Panderm cream (3.86%) and finally by Clobetasol cream (2.31%) (Graph. 3) The most commonly explained reasons were fairness cream (51.54%) followed by as an Acne cream (27.69%) and by Pigment disorders (20.77%). (Graph. 4).

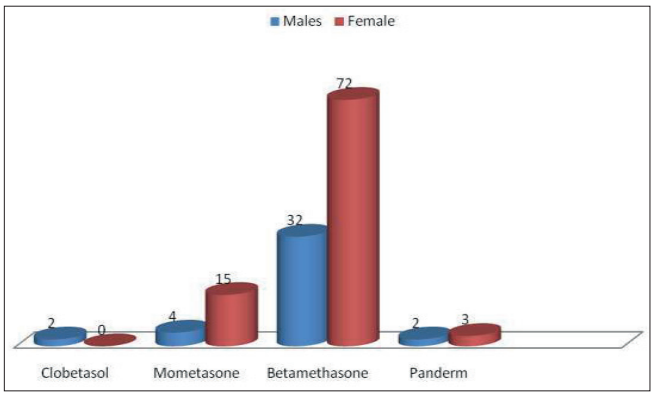
The main source of prescription was Registered Medical Practioners (30%) followed by Friends (23.1%), then by Pharmacist (19.2%), and Self (12.3%). Prescription



Graph 1: Showing duration of Topical Corticosteroids application.



Graph 2: Showing frequency of Topical Corticosteroids application.



Graph 3: Showing type of Topical Corticosteroids used by patients.

by MBBS (11.6%) and Beautician (3.85%) respectively (Graph. 5). Majority of patients presented with chief complaints of Acne exacerbation (62.4%) followed by photosensitivity (55.6%), then by Redness (40.8%) and by pigmentary marks (35.8%) finally by Dryness (18.5%) (Graph. 6).

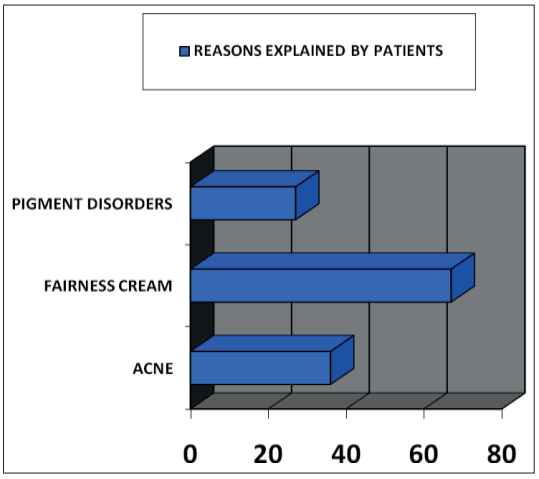
The most common adverse effect was Acneiform eruptions (88.5%) followed by hyper pigmentation (21.5%), then by erythema (18.5%) and finally atrophy (4.6%),Hypo pigmentation (3.8%), Infections (3.1%) each one respectively (Graph. 7).

DISCUSSION

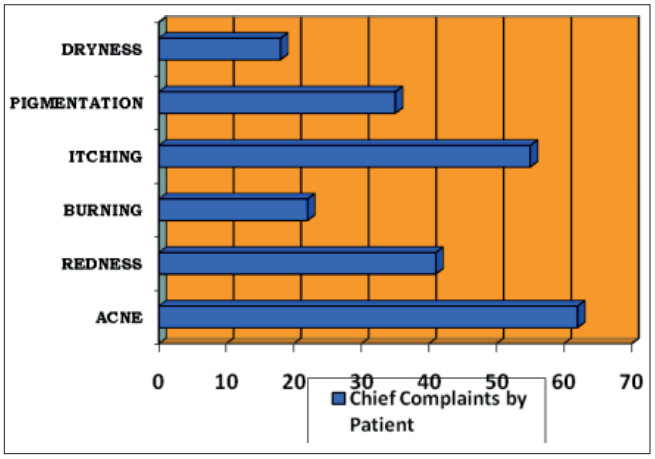
Corticosteroids are not the panacea for all forms of dermatological diseases but it is extremely valuable when their limitations are realized. TCS are the treatment of choice for a variety of cutaneous disorders when it is used on the appropriate site and in proper concentration. However, TCS should not be used on the face except for acute inflammatory conditions provided that it will be not used for more than one month [7,8].

At first the vasoconstrictive and anti-inflammatory effects of the steroids result in what seems to be clearance of the primary dermatitis but persistent use leads to epidermal atrophy, degeneration of dermal structure and collagen deterioration after several months. Continued or overuse of steroids can result in thinning of the skin as well as skin dependency on the steroid [5,9]. Multiple pathways including rebound vasodilatation and proinflammatory cytokine release by chronic intermittent steroid exposure induces various effects.

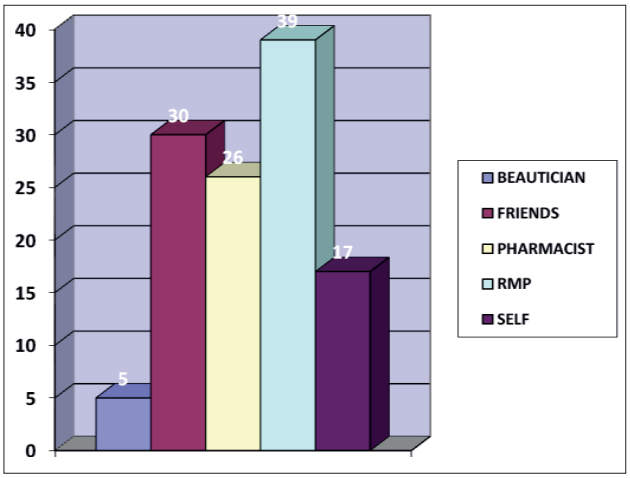
There were few common features in all subjects reported here. They started to use steroid cream as daily cosmetic/fairness cream. Minimum duration required to develop the dermatosis was 5 months. They all had



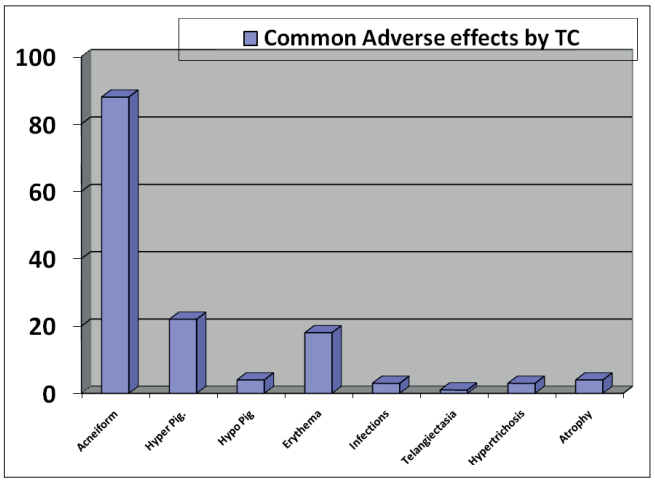
Graph 4: Showing reasons explained by patients.



Graph 6: Showing chief complaints by patients.



Graph 5: Showing source of prescription.



Graph 7: Showing common adverse effects of Topical Corticosteroids.

magical response earlier; later started to develop rashes on stopping.

In the present study, majority of cases were reported between age group of 21-30 years, similar results were seen with Bhat YJ et alstudy [9] and saraswati et al study [10]. Female preponderance showed like Rathi sk [3] and Bhat YJ et al study [9]. In Bhat YJ et al study [9] reported that majority of cases were House wives like the present study.

In the Present study, majority of patients belong to rural areas, because my college located in rural area. Similar results were seen with Bhat YJ et al study [9]. In saraswati et al study [10], involvement of urban population was more.

In a majority of studies reported, duration of application of TCS ranges from 1w – 30 yr. In the present study majority of patients with steroid application over face presented after 3-6 months (77.7%).

In a study by Bhat YJ et al [9], Rathi SK [3], Saraswat et al [10], Ammar F Hameed [11], reported that majority of patients used Betamethasone Valerate. In the present study Betamethasone valerate cream (78.5%) was most commonly used TC.

In the present study, source of prescription was Registered Medical Practioners (30%). These results were consistent with Rathi SK study [3]. saraswati et al study [10] reported that the most common reason explained by the patient for using TC was as a fairness cream. In a report by Bhat YJ et alstudy [9], the most common reason explained by patient was dryness of skin. In the present study the most common reasons for using TC were as a fairness cream (51.54%). Similar results were found in saraswati et al study [10].

In a study, Ammar F Hameed [11] reported that most common adverse effect was burning. In Bhat YJ et al study [9] showed that there were more number of Rosacea cases than acne. In the present study majority of patients presented with chief complaints of acne exacerbation (62.4%), followed by photosensitivity (55.6%), redness (40.8%), pigmentary marks (35.8%) and finally by Dryness (18.5%). Similar results were seen with saraswati et al study [10].

To prevent the harmful effects of corticosteroids, it is important to understand how to use these medications. The use of the finger tip unit is quite helpful. That is

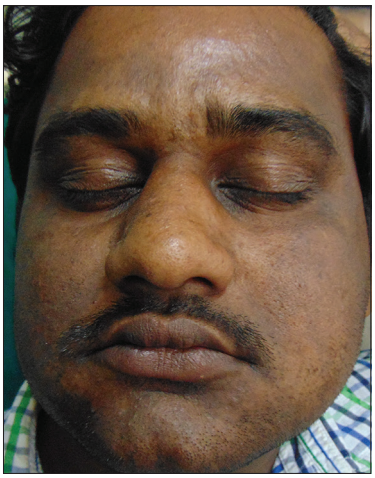


Figure 1: Diffuse hyper pigmentation and hypo pigmentation.

the cream is measured on the index finger between the tip and the first crease on that finger. That quantity of cream should be enough to apply on the size of the body that both hands can cover. Another way is to use these topical agents on a week on, week off basis or three days on and four days off basis to prevent tachyphylaxis.

We advised oral azithromycin 500mg in the form of weekly pulse therapy (3 tabs per week for 4–6 weeks) or oral doxycycline 100mg twice daily for 6-10 weeks, along with topical clindamycin, topical retinoic acid and topical tacrolimus 0.03% ointment once daily showed a good response in around 2–3 months. Emollient, oral vitamin E and C had additional beneficial effect in relieving other symptoms.

CONCLUSION

TCS abuse becoming a great cause concern for their dramatic clinical effects, peer pressure to use them for cosmetic purpose, easy availability of products, inadequate information of their adverse effects, and phenomenon of steroid addiction.

There is always a doubt as to which steroid is safe for face; in fact no steroid is safe for face, and to be prescribed only if specifically indicated for shorter duration and it is very essential to educate patient about side effects and dependency in order to prevent the consequences of abuse. The awareness among doctors and patient is highly essential as magnitude of problem is high.

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CONSENT

The examination of the patient was conducted according to the Declaration of Helsinki principles.

REFERENCES

1. Mukhopadhyay AK, Baghel V. A study to evaluate the efficacy and safety of hydrocortisone aceponate 0.127% lipophilic cream in steroid responsive dermatoses in Indian patients. Indian J Dermatol Venereol Leprol. 2010;76:591.
2. Ghosh A, Sengupta S, Coondoo A, Jana AK. Topical Corticosteroid Addiction and Phobia. Indian J Dermatol. 2014;59:465-8.
3. Rathi SK, Kumrah L. Topical Corticosteroid induced rosacea like dermatitis: A clinical study of 110 cases, Indian J Dermatol Venereol Leprol. 2011;77:42-6.
4. Chen AYY, Zirwas MJ. Steroid-induced rosacealike dermatitis: case report and review of the literature. Cutis. 2009; 83:198–204.
5. Bhankharia DA, Sanjana PH. Efficacy of desonide 0.05% cream and lotion in steroid-responsive dermatoses in Indian patients: A post-marketing surveillance study. Indian J Dermatol Venereol Leprol. 2004;70:288-91.
6. Ljubojevia S, Basta-Juzba svia A, Lipozeneia J. Steroid dermatitis resembling rosacea: aetiopathogenesis and treatment. J Eur Acad Dermatol Venereol. 2002;16:121-6.
7. Rathi S. Abuse of topical steroid as cosmetic cream: a social background of steroid dermatitis. Indian J Dermatol. 2006;51:154-5.
8. Dubertret L. Which steroids for the treatment of skin disorders on the face? J Eur Acad Dermatol Venereol. 2002;16:121.
9. Bhat YJ, Manzoor S, Qayoom S. Steroid – induced rosacea: A clinical study of 200 patients. Indian J Dermatol. 2011;56:30-2.
10. Saraswat A, Lahiri K, Chatterjee M, Barua S, Coondoo A, Mittal A, et al. Topical corticosteroid abuse on the face: A prospective, multicenter study of dermatology outpatients. Indian J Dermatol Venereol Leprol 2011;77:160-6.
11. Hameed AF. Steroid dermatitis resembling rosacea: A clinical evaluation of 75 patients, ISRN Dermatol. 2013;2013:491376.

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