

A Study on Adverse Effects of Topical Steroids

Rahul Dixit¹, Dhruvi V Bhalala², Raksha Patel³, Foram Parikh⁴

How to cite this article:

Rahul Dixit, Dhruvi V Bhalala, Raksha Patel, et. al / A Study on Adverse Effects of Topical Steroids / RFP Journal of Dermatology 2022;7(2):69-72.

ABSTRACT

Background: Topical steroids are the most commonly prescribed topical medications for the treatment of psoriasis, eczema, lichen planus, vitiligo and dermatitis. Abuse of these topical steroids can lead to various adverse effects.

Aims: To study adverse effects of following topical corticosteroids: (a) Betamethasone valerate cream 0.05% (BV) (b) Betamethasone dipropionate cream 0.05% (BD) (c) Clobetasol propionate cream 0.05% (CP).

Methods and materials: Across sectional study of sixty five patients with side effects of topical steroids were studied in department of skin – VD, Tertiary care hospital from Jan 2010 to December 2010.

Statistics and Analysis: Mean, standard deviation

Results: Out of sixty five cases, eleven patients applied Betamethasone valerate 0.05%, three patients applied Betamethasone dipropionate 0.05% and fifty three patients applied Clobetasol propionate 0.05%. Maximum numbers of cases were in age group more than thirty years. Thirty five were male and nineteen were female. In our study the most common condition for which steroid was applied was chronic eczema. The most common side effect was change in skin color on application of Clobetasol propionate 0.05%. The maximum side effects appeared after three months of application of topical steroid.

Conclusion: The most frequently applied steroid was Clobetasol propionate cream 0.05%. The most common condition for which steroid was applied is chronic eczema and adverse effect is hypopigmentation and depigmentation. In most of the patients adverse effects appeared after three months of steroid application.

Keywords: Topical corticosteroids; Side effects; Abuse.

Author Affiliation: ¹Consultant, Department of Dermatologist, UAE, ²Postgraduate Resident, ³Professor and Head of Department, Department of Dermatology & U.D, GMERS Medical College, Gotri, Vadodara 390021, Gujarat, India.

Corresponding Author: Dhruvi V Bhalala, Postgraduate Resident, Department of Dermatology & U.D, GMERS Medical College, Gotri, Vadodara 390021, Gujarat, India.

Email: dhruvibhalala20@gmail.com

Received on: 05.05.2022

Accepted on: 29.06.2022

INTRODUCTION

Topical steroids are the most commonly prescribed topical medications for the treatment of eczema, lichen planus, psoriasis and vitiligo. They are among twenty most important discoveries in the last century. In 1953, Sulzberger and Witten used topical hydrocortisone for the first time to treat dermatitis. Also known as panacea or wonder drug as they have anti allergic, antiinflammatory,

anti proliferative, immunosuppressive and vasoconstrictive mechanism of action. They are classified based on their vasoconstriction abilities. Due to availability of over the counter topical steroids, its abuse is most commonly seen leading to its adverse effects.

METHODS

A total of sixty five patients with side effects of topical steroids were studied in department of skin - VD, Tertiary care hospital from Jan 2010 to December 2010.

Inclusion Criteria:

Any patient with side effects of three topical steroids namely Betamethasone valerate, Betamethasone dipropionate and Clobetasol propionate cream, which were applied for more than fifteen days were included.

Common skin conditions were included and side effects were studied.

Permission from ethical committee was taken.

RESULTS

Out of sixty five cases, eleven patients applied Betamethasone valerate, of which four were male and five were female. Three patients applied Betamethasone dipropionate, of which two were male and one was female. Fifty three patients applied Clobetasol propionate, of which thirty four were male and nineteen were female.

Maximum numbers of cases were in age group of more than thirty years, out of which thirty five were male and nineteen were female.

In our study the most common condition for which steroid was applied was chronic eczema.

Table 1: Indications of using steroids

Indication	BV (n=9)	BD (n=3)	CP (n=53)	Patients (n=65)
Chronic Eczema	3	2	40	45
Lichen Planus	0	1	5	6
Amyloidosis	0	0	5	5
Acne	0	0	1	1
Melasma	5	0	0	5
Tinea Cruris	1	0	1	2
Vitiligo	0	0	1	1

Abbreviations: BV-Betamethasone valerate, BD-Betamethasone Dipropionate, CP-Clobetasol

propionate

The most common side effect was hypopigmentation on application of Clobetasol propionate.

Table 2: Adverse effects of steroids:

Adverse effects	BV	BD	CP	n=65
Hypopigmentation (Fig. 2)/ Depigmentation	3	3	48	54
Acneiform Eruption (Fig. 5)	5	0	0	5
Perioral dermatitis (Fig. 1)	0	0	1	1
Hypertrichosis	0	0	1	1
Tinea incognito (Fig. 3)	1	0	0	1
Atrophy	0	0	3	3
Total	9	3	53	65



Fig. 1: Perioral Dermatitis



Fig. 2: Hypopigmentation



Fig. 3: Tinea Incognito and Striae

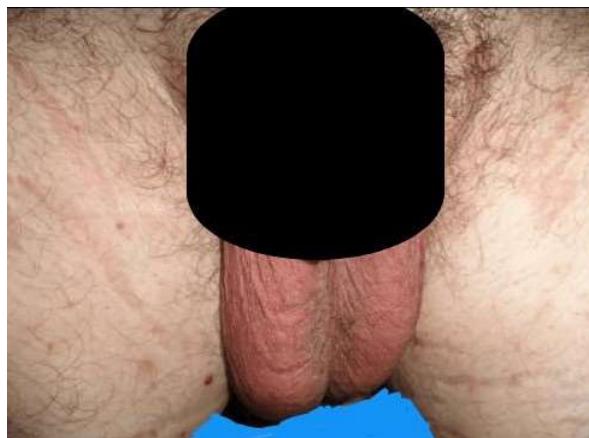


Fig. 4: Striae



Fig. 5: Acneform Eruptions



Fig. 6: Milia and Telangiectasia

Abbreviations: BV - Betamethasone valerate, BD - Betamethasone Dipropionate, CP - Clobetasol propionate.

In maximum cases side effects appeared after three months of continuous application of topical steroid. Eight cases experienced adverse effects in the span of less than one month and seventeen cases experienced adverse effects between one and three months.

DISCUSSION

Topical corticosteroids are of significant importance in treating various dermatological diseases. They are misused both by the prescribing doctors and the patients themselves because it gives instant relief to most of the signs and symptoms. Its abuse has become a common problem faced by dermatologist in different parts of the world.^{1,2}

Topical steroids or steroid containing antifungal creams are most commonly misused preparations for fungal infections, particularly in developing

countries like India owing to their unregulated sales. Topical steroids may alleviate the symptoms such as itching but do not eliminate the fungus from the skin surface and also leads to antifungal drug resistance and relapse.

As reported by Nnoruka et al. in 2006, topical corticosteroids has been commonly used as depigmenting agents over the face in darkskinned individuals, and their availability over the counter in most Asian and African countries added to this misuse.² The first case series on topical steroids abuse in India was published in 2006, and since then various authors have published numerous case studies on its application. Hameed Bhat et al., and Saraswat et al. reported maximum number of patients in the age group of 21-30 years.^{1,3,4} Sinha et al. reported that 80% of people had obtained steroids over the counter while only 4% had consulted dermatologists.⁵

Mahar et al also reported fungal infections to be the most common cause for the use of topical steroids followed by acne and for skin lightening.⁶In

the study by Mishra et al. patients prescribed potent steroids by nondermatologists suffered more adverse reactions than those prescribed by dermatologists. Nagesh et al reported that almost half the patients in their study were advised to use topical steroids by pharmacists, friends, and relatives.⁷ The authors claimed that most of the time, general practitioners and doctors from alternative medicine had prescribed these medicines.

The most common fixed drug combination according to Verma et al. is clobetasol propionate, ornidazole, ofloxacin, and terbinafine.⁸ The Drug Controller General of India (DCGI) and Ministry of Health and Family Welfare of the Government of India had issued through a gazette notification in 2016, that certain fixed dose combinations (FDC) of topical steroids along with antibiotics drugs had no therapeutic justification and prohibited their manufacture with immediate effect.⁹ As per the recent Central Drugs Standard Control Organization (CDSCO) notification of 2018, among 328 FDCs which have been banned by the DCGI, there are 12 topical steroid FDCs along with antibiotics which have been banned.¹⁰ The misuse of topical steroids in the community is increasing and steps need to be taken at every level to curb the problem. The precautions to be taken while using steroids and practices of using steroids were poor among externally prescribed patients as compared to institutional patients. There have been efforts at a national level by Indian Association of Dermatologists, Venereologists and Leprologists (IADVL). A Taskforce against Topical Steroid Abuse (ITATSA) by IADVL has submitted an online petition to the Ministry of Health and Family Welfare, Government of India, and CDSCO to look into the issues related to the indiscriminate over the counter sale of topical steroids in India.¹⁰

CONCLUSION

In our study the most frequently applied steroid was clobetasol propionate cream. The most common

condition for which steroid was applied is chronic eczema and adverse effect was hypopigmentation and depigmentation. In most of the patients adverse effects appeared after 3 months of topical steroid application. The most common site of application and appearance of adverse effects are legs. Hence, judicious use of topical steroids is must and patients must be instructed about the correct use of steroids.

REFERENCES

1. Saraswat A, Lahiri K, Chatterjee M, Barua S, Coondoo A, Mittal A, et al. Topical corticosteroid abuse on the face: A prospective, multicentric study of dermatology outpatients. *Indian J Dermatol Venereol Leprol* 2011;77:160-6.
2. Nnoruka E, Okoye O. Topical steroid abuse: Its use as a depigmenting agent. *J Natl Med Assoc* 2006; 98:934-9.
3. Hameed AF. Steroid Dermatitis Resembling Rosacea: A Clinical Evaluation of 75 Patients. *ISRN Dermatol* 2013;2013:491376.
4. Bhat YJ, Manzoor S, Qayoom S. Steroid induced rosacea. A clinical study of 200 patients. *Indian J Dermatol* 2011;56:30-2.
5. Sinha A, Kar S, Yadav N, Madke B. Prevalence of topical steroid misuse among rural masses. *Indian J Dermatol* 2016;61:119.
6. Mahar S, Mahajan K, Agarwal S, Kar HK, Bhattacharya SK. Topical corticosteroid misuse: The scenario in patients attending a tertiary care hospital in New Delhi. *J Clin Diagn Res* 2016;10:16-20.
7. Nagesh T, Akhilesh A. Topical steroid awareness and abuse: A prospective study among dermatology outpatients. *Indian J Dermatol* 2016;61:618-21.
8. Verma S. Sales, status, prescriptions and regulatory problems with topical steroids in India. *Indian J Dermatol Venereol Leprol* 2014;80:201-3.
9. Pande S. Steroid containing fixed drug combinations banned by government of India: A big step towards dermatologic drugs safety. *Indian J Drugs Dermatol* 2016;2:1-2.
10. Press Information Bureau. Prohibition and restriction of manufacture, sale and distribution of Fixed Dose Combinations (FDCs). [Internet]. 2018. Available from: <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1545741>.