

An Analysis of Prescription Patterns of Topical Corticosteroids in Dermatology OPD of A Tertiary Care Teaching Hospital In Western Maharashtra

Sushil Sharma*, Med Cdt (Mr) Venkat Shashidhar C**

* Dept of Pharmacology, ** Medical Student (3rd Year), Armed Forces Medical College (AFMC), Pune, India

Abstract: Background: Topical corticosteroids are the mainstay of many dermatological conditions. The study was planned to monitor and analyze the pattern of prescribing topical corticosteroids among outpatients attending dermatology clinics in a rural tertiary care and teaching hospital. Methods: It was a cross-sectional study conducted in the dermatology department of a tertiary care teaching Hospital over a period of 4 months. A total of 350 (Three hundred and fifty) random prescriptions were studied from patients attending skin OPD. Out of these, prescriptions containing topical corticosteroids were identified and considered for the study. The data were collected prospectively by direct observation in a specially designed pro forma containing relevant detail such as demographic, disease, and drug data. Results: A total of 169 (48.3%) of randomly studied 350 prescriptions contained a topical corticosteroid, with Mometasone furoate (34%) and Betamethasone valerate (33%) being the most commonly prescribed. Further, a majority of the topical corticosteroids prescribed were of low potency (47%) followed by highly potent (33%) and ultra-high potent (20%) drugs. 39 % of the topical steroids were given in a fixed dose combination with salicylic acid being the most common combination drug. Only 63% of the drugs were prescribed using generic names. Moreover, none of the prescriptions, specified the quantity of the drug which needs to be used while only 25% specified the area of application. Conclusions: Topical corticosteroids are one of the most used and abused drugs in dermatology OPD. Hence, it is important that drug utilisation and prescription studies of these drugs are conducted periodically not only to generate baseline data but also to help health care professionals make appropriate changes if needed to ensure that the drugs are prescribed rationally. [S Sharma, Natl J Integr Res Med, 2018; 9(2):59-63]

Key Words: Topical corticosteroids, Prescription patterns, Skin diseases, Rational prescribing

Author for correspondence: Sushil Sharma, Department of Pharmacology, Afmc Pune (Opp: Command Hospital) Pune, Maharashtra – 411040 E-Mail: sushkehar@rediffmail.com M: 8551896960

Introduction: Topical corticosteroids (TC), after their introduction in 1950s, have revolutionized the practice of dermatology and are now the mainstay when it comes to treatment of a wide range of diseases¹. These drugs are extensively prescribed in the dermatology OPD and their therapeutic range varies from mild self limiting conditions to life threatening problems². At the same time their strong immunosuppressive and anti-inflammatory actions and also their ability of providing immediate relief has quite often led to their abuse^{3,4}. They are used in dermatology by various routes but topical route is by far the commonest⁴. On the basis of their potency, British National Formulary (BNF) divides the topical corticosteroids into four groups, whereas American system divides them into seven classes, where class I represents super potent or ultra potent drugs and class VII the least potent⁵.

The physicians must have a complete knowledge of the drugs in each class and as a general rule use the weakest possible corticosteroid which can treat the condition⁶. However, a trend is being seen towards usage of potent steroids, thus exposing the patient to the adverse effects of these steroids⁷. Moreover, various studies have shown that the use of

corticosteroids is rampant and with some studies showing more than 50% of patients attending dermatology OPD being prescribed corticosteroids⁸. Hence, there is a need to use them rationally in our OPDs and avoid their misuse. The prescribers also have a responsibility to ensure that the WHO core prescribing indicators like generic prescribing, prescribing from the essential drug list to encourage rational use of drugs⁹.

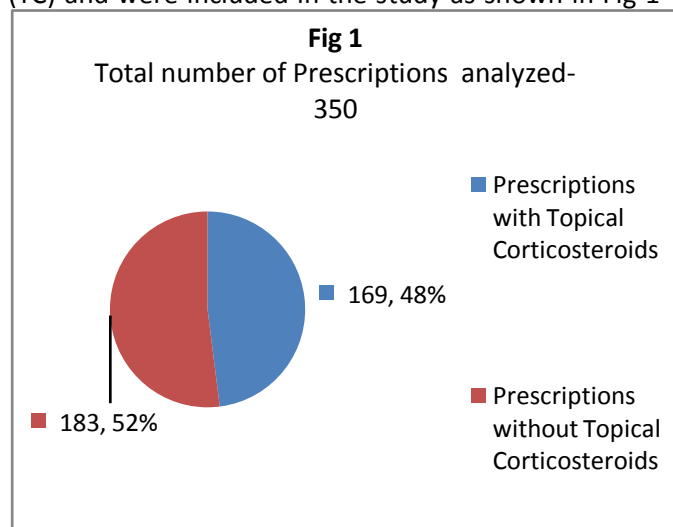
Without the knowledge on how drugs are being prescribed and used, it is difficult to initiate a meaningful discussion on rational drug use and to suggest measures to modify/ change prescribing habits¹⁰. Therefore, periodic evaluation of drug utilization patterns needs to be done to provide feedback, enable suitable modifications in the prescription of drugs to increase the therapeutic benefit and decrease the adverse effects.

Hence, this study was planned to analyze the pattern of prescribing topical corticosteroids among patients attending dermatology OPD in a tertiary care teaching hospital.

Methods: This was a prospective, cross sectional, observational study in a tertiary care teaching hospital in Western Maharashtra. The study was cleared by the Institutional ethical committee. A total of 350 (Three hundred and fifty) random prescriptions were studied from patients attending skin OPD over a period of 4 months between Dec 2016 to Mar 2017. Out of these, prescriptions containing topical corticosteroids (TC) were identified and considered for the study. The study included only one prescription per patient. The data was collected and details entered in a specially designed pro forma. The prescriptions were analyzed for demographic details like age and gender, Diagnosis of the skin disease, Details regarding topical corticosteroids, including whether it was prescribed alone or as fixed dose combination. The potency of the Topical Corticosteroids was based on the WHO Model prescribing information¹¹. Other details mentioned in a prescription were also analyzed – whether prescribed by generic or brand name, Strength of formulation, quantity/dose of drug, site of application, frequency of administration, and duration of drug usage. Care was taken to obtain the prescriptions from patients at different times of the day during the OPD timings and also from different health care providers (HCP) to offset any confounding factors relating to rush hours and individual preferences of a HCP.

Statistical Analysis: The data were analyzed using descriptive statistics.

Results: A total of 169 prescriptions out of randomly collected 350 (48%) contained Topical corticosteroids (TC) and were included in the study as shown in Fig 1



The demography of the patients prescribed Topical Corticosteroids is depicted in [Table 1].

Table 1: Demographic details of the patients who were prescribed Topical corticosteroids

Age	F	M	Total (No's)	Total (%)
0-19	7	13	20	12%
20-39	21	40	61	36%
40-59	27	22	49	29%
60-80	15	24	39	23%
Total (No's)	70	99	169	100%
Total (%)	41.5%	58.5%	100%	

It was seen that a majority of patients were between 20-40 yrs (36%) followed by 40-59 yrs (29%) with preponderance of male patients (58.5%). The most common skin conditions encountered were psoriasis (29%) and eczema (18%). The details of other skin conditions that presented to the OPD and necessitated the use of topical corticosteroids are given in [Table 2].

Table 2: Details of the diagnosis of the patients prescribed topical corticosteroids

Diagnosis	N = 169(100%)
Psoriasis	49(29%)
Dermatitis	31(18%)
Lichen simplex chronicus	16(9%)
Polymorphic light eruption	15(9%)
Vitiligo vulgaris	14(8%)
Seborrheic capitis	10(6%)
Lichen planus	7(4%)
Generalised pruritits	4(2%)
Alopecia	3(1.8%)
Pityriasis alba	3(2%)
Lichen Amyloidosis	2(1%)
Pityriasis rosea	2(1%)
Others	12(7%)

A list of the various topical corticosteroids that were prescribed is given in [Fig 2]. As is evident from the list, Mometasone furoate (34%) was the most common topical corticosteroid prescribed which was closely followed by Betamethasone valerate (33%).

Further, the analysis of the potencies of the corticosteroids was done and the potency distribution of the drugs is shown in [Fig 2].

Fig 2: Distribution of the different types of Topical corticosteroids prescribed

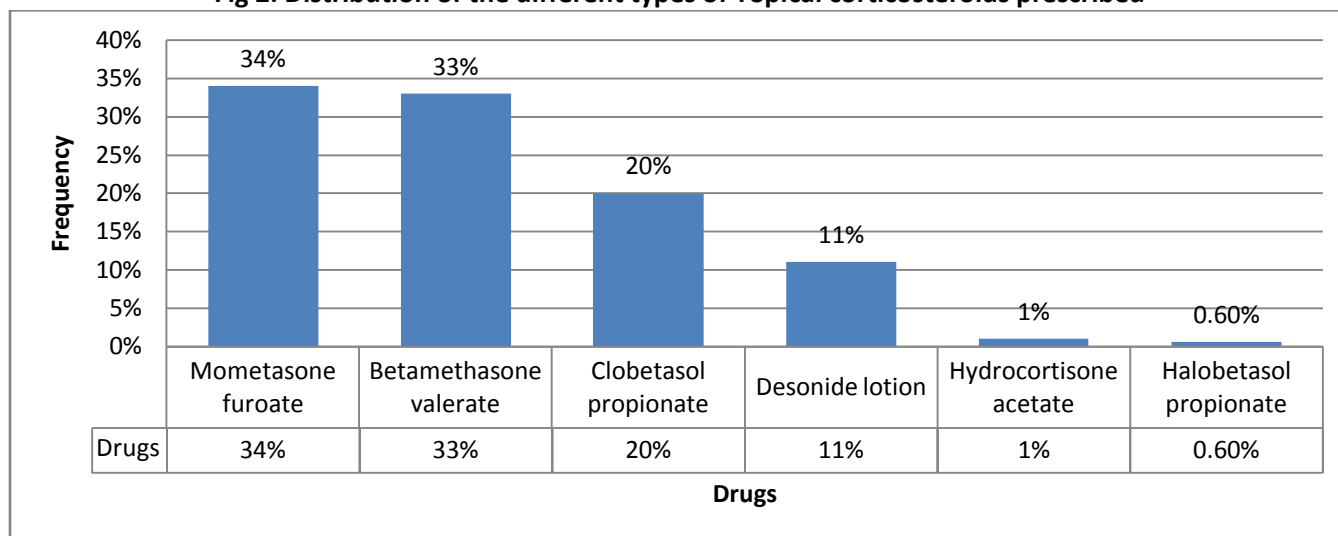
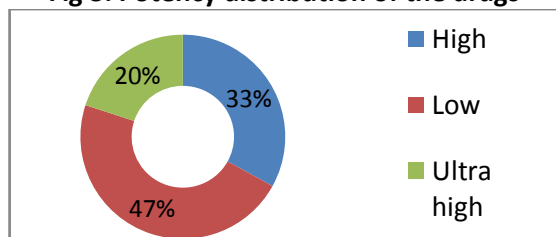


Fig 3: Potency distribution of the drugs



It is observed that majority of the topical corticosteroids prescribed were of low potency (47%) while ultra-high and high potent drugs being 20% and 33% respectively.

Further, in 66 out of 169 (39%) prescriptions, the topical corticosteroids were prescribed as a fixed dose combination with another topical agent. The drugs given in fixed dose combinations along with topical corticosteroids are shown in [Table 3]. Salicylic acid was the most common agent which was combined with the topical corticosteroid being part of the fixed drug combination in 58 out of 169 prescriptions.

Table 3: Drugs given as fixed drug combinations (FDC) with topical corticosteroids.

Name of drug	As monotherapy	As FDC with Salicylic acid	As FDC with Soframycin	Total
Betamethasone valerate	10	46	--	56
Clobetasol propionate	16	11	6	33
Desonide lotion	19	--	--	19
Halobetasol propionate	--	1	--	1
Hydrocortisone acetate	2	--	--	2
Mometasone furoate	56	--	2	58
Grand Total	103	58	8	169

The other details pertaining to the prescribing indicators of the drugs are given in [Table 4]. As clearly seen, only 63% of the drugs were prescribed using generic names. Moreover, none of the prescriptions, specified the quantity of the drug which needs to be used while only 25% specified the area of application.

Table 4: Details of other prescribing indicators

Sr No	Prescribing Indicator	Mentioned in the prescriptions (Nos)	%
1.	Generic name	106	63%
2.	Strength of formulation	71	42%
3.	Quantity of drug	0	0%
4.	Site of application	43	25%
5.	Frequency of administration	169	100%
6.	Duration of drug use	169	100%

Discussion: In our study, 48.3% of all the prescriptions contained topical corticosteroids which is comparable to a study conducted by Sweilej WM⁵ and Kumar et al¹² in which 52% and 43% of all the prescriptions studied had topical steroids respectively. The anti-inflammatory action of topical corticosteroids is responsible for their efficacy in a wide range of inflammatory and allergic skin diseases. Moreover, their ability to provide reasonably quick symptom relief also makes them very popular. This probably explains the widespread use of these agents in a large section of patients attending dermatology OPD. However, because of their adverse effect profile, it is important to introspect and ensure that they are not used indiscriminately without sufficient basis.

Almost 29% of the cases diagnosed were psoriasis and 18% of cases diagnosed were dermatitis (irritant contact dermatitis being a very small fraction of these) in our study which is comparable to the findings by Divyashanthi and Manivannan¹³. However, in another study conducted by Bylappa BK and Patil RT⁴ dermatitis was the most common condition followed by psoriasis were the most common conditions. This could be due to the fact that the population group in our study was much younger constituting the working class who constantly lead a more stressful life and are at a higher risk of psoriasis. Lesions related to exposure to sun also constituted a significant chunk (9%) of cases as the study was conducted during summer season.

The most commonly prescribed drug was Mometasone furoate (34%) and Betamethasone valerate (33%). In our study, majority of the topical corticosteroids prescribed were of low potency (47%) followed by highly potent (33%) and ultra-high potent (20%) drugs. This is a good sign as highly potent drugs tend to have higher incidence of side effects. This is in contrast to other studies like Jena et al¹⁴ and Bylappa BK⁴ wherein highly potent drugs were prescribed more often, and Clobetasol propionate being the most common topical corticosteroid.

39% of the topical steroids prescribed were in fixed dose combinations (FDC), with salicylic acid being the most common. This is not surprising because Salicylic acid is a keratolytic agent and has a role in psoriasis, lichen simplex chronicus etc which formed a significant number of cases. Topical anti-microbial

Soframycin as a fixed drug combination was prescribed in 8 out of 169 (4%) cases.

The WHO recommends that prescriptions with generic names of the drugs to be used and this aspect constitutes an important part of the rational prescribing indicators. However, in our study, 37% of the prescriptions were prescribed using brand names; this was more common when the topical steroids were used as a fixed drug combination with other drugs. This is probably because when multiple drugs are present in a prescription, it may be easier and more convenient to prescribe using a brand name rather than writing all the contents of a prescription by generic names.

Almost 58% of the prescriptions did not mention the strength of the formulation and none of the prescriptions had the quantity of the drug to be applied mentioned in them. This could be explained with the fact that the dermatology OPD had its own dispensary and had a fixed inventory of the formulation strengths which the patients were dispensed. Also the patients may have been instructed on the quantity of the drug to be applied while in the consultation room and hence was not explicitly mentioned on the prescription. However, as is well known, topical steroids if over applied can cause adverse reactions and potency of the drug varies with varying strength of the formulation. The under usage of steroids leads to sub therapeutic effect, whereas the over dosage of steroids, with prescriptions not mentioning the particular quantity of the steroids, results in different adverse effects. To achieve maximum effectiveness, patients must be encouraged to apply these agents appropriately. Hence, it is advisable that these are clearly mentioned on the prescription slip to avoid any confusion. Moreover, health care professionals must ensure that patients use the appropriate quantity of the amount of topical steroid. Use of the fingertip unit (FTU) method can be a simple tool to help patients obtain a better understanding of the amount of topical steroid to be used¹⁵.

It was heartening to see that all the prescriptions had frequency and duration of drug used mentioned in them which is very much important for the safe and effective use of these drugs.

Conclusions: A total of 169 (48.3%) of randomly studied 350 prescriptions in our study contained a topical corticosteroid, a majority 47% being of low potency, and Mometasone furoate (34%) and Betamethasone valerate (33%) being the most commonly prescribed. 39 % of the topical steroids were given in a fixed dose combination with salicylic acid being the most common combination drug. There is a need to ensure that the strength of the topical steroid along with the quantity to be applied is clearly mentioned to ensure that these drugs are rationally utilized to maximize benefit to the patient.

Topical corticosteroids are one of the most used and abused drugs in dermatology OPD. Hence, it is important that drug utilisation and prescription studies of these drugs are conducted periodically not only to generate baseline data but also to help health care professionals make appropriate changes if needed to ensure that the drugs are prescribed rationally.

Acknowledgements: The authors wish to thank the Head of Department and the staff of dermatology department at our institute for the whole hearted support and cooperation rendered during the study.

References:

1. Patel NG, Patel NJ. Epidemiological study of skin (dermatological) diseases and its treatment in North Gujarat. *Asian J Pharmaceut Clin Res* 2010;3(4):41-3.
2. Mehta AB, Nadkarni NJ, Patil SP, GodseKV, GautamM, AgarwalS. Topical corticosteroids in dermatology. *Indian J Dermatol Venereol Leprol* 2016;82:371-8
3. Rathod SS, Motghare VM, Deshmukh VS, Deshpande RP, Bhamare CG, Patil JR. Prescribing practices of topical corticosteroids in the outpatient dermatology department of a rural tertiary care teaching hospital. *Indian J Dermatol* 2013;58:342-5.
4. Bylappa BK, Patil RT, Pillai RT. Drug prescribing pattern of topical corticosteroids in dermatology unit of a tertiary-care hospital. *Int J Med Sci Public Health* 2015;4:1702-1707
5. Robertson DB, Maibach HI. Dermatologic pharmacology. In: Katzung BG, ed. *Basic and clinical pharmacology*, 8th ed. New York, McGraw Hill, 2001:1064-77

6. Saraswat A. Ethical use of topical corticosteroids. *Indian J Dermatol* 2014;59:469-72.
7. Purushotham K, Eesha B R. Prescription Trend of Topical Corticosteroids in Outpatient of Dermatology in a Tertiary Care Hospital in Tumakuru, Karnataka. *Int J Pharmacol and Clin Sci*. 2016;5(3):77-72.
8. W.M. Sweileh. Audit of prescribing practices of topical corticosteroids in out- patient department. *Eastern Mediterranean Health Journal*, Vol. 12, Nos 1/2, 2006
9. World Health Organization (WHO) Introduction to Drug Utilization Research. Oslo, Norway: WHO International Working Group for Drug Statistics Methodology, WHO Collaborating Centre for Drug Statistics Methodology, WHO Collaborating Centre for Drug Utilization Research and Clinical Pharmacological Services; 2003.
10. How to investigate Drug Use in Health facilities: Available form : <http://apps.who.int/medicinedocs/en/d/Js2289e/4.html> [Last accessed 22.12.2017]
11. WHO Model Prescribing Information: Drugs used in skin diseases. Classification of Topical corticosteroids. Available from <http://apps.who.int/medicinedocs/en/d/Jh2918e/32.html>. [Last accessed 20.3.2017]
12. Jeetendra Kumar , Subhash Chandra and Hemant Kumar Sinha. Utilization pattern of drugs among dermatological outpatients in a tertiary care hospital of eastern India. *IJPR Volume 6 Issue 09* (2016).
13. Divyashanthi CM, Manivannan E. Prescribing analysis of corticosteroids among the dermatology in-patients in a tertiary care teaching hospital, Karaikal, Puducherry: a prospective observational study. *Int J Pharm Biol Sci*. 2014;5(2):324-30.
14. Jena M, Panda M, Patro N, Mishra S. Pattern of utilization of corticosteroids in department of dermatology at a tertiary care teaching hospital. *J Chem Pharmaceut Res*, 2014;6(8):86-91.
15. Long CC, Finley AY. The finger-tip unit: A new practical measure. *Clin Exp Dermatol*. 1991;16:444-7.

Conflict of interest: None
Funding: None
Cite this Article as: S Sharma, V Shashidhar . An Analysis of Prescription Patterns of Topical Corticosteroids in Dermatology OPD . <i>Natl J Integr Res Med</i> 2018; 9(2):59-63