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Original Research Article

Topical corticosteroids used in dermatological disorders in tertiary care hospital: A prospective observational study

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ABSTRACT

BACKGROUND: Monitoring and analysis of the prescription practices of topical steroids can help to achieve rational prescription to these drugs. The aim of our study was to focus and evaluate the use of topical corticosteroids so as to provide a baseline data regarding the prescribing pattern in Topical corticosteroids which in turn contributes to the promotion of optimal and rational therapy thereby improving patient 's quality of life.

SUBJECTS AND METHODS: It is a prospective and observational study done over a period of six months that includes established cases including the use of topical corticosteroids. 150 cases were collected and prescription pattern of topical corticosteroids in them was studied. The data was observed using designed data collection form and was analyzed using a suitable method.

RESULTS: A total of 150 prescriptions were analyzed having 184 corticosteroids during the study period. Amongst these prescriptions, 83 (55%) were male whereas 67 (45%) were in the female category. In all, almost all the prescriptions, strength, quality of the steroid to be used, frequency, site, and duration of administration was not mentioned. About 92.32% of the prescriptions contained very potent steroids.

CONCLUSION: By intermittent monitoring, evaluating and therapeutically analyzing the pattern of prescription of corticosteroids in the dermatology department of the hospital, we can contribute to the rational and ethical use of this lifesaving drug in dermatology practice with maximum effectiveness and least adverse effects.

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INTRODUCTION

The topical corticosteroids (TC) are among the most commonly prescribed medication in an out-patient dermatology setting since they were first introduced in the early 1950s. Probably no other group of drugs has had such a profound impact on the specialty as TC (Somaraju and Nayak, 2016). Using them, it has become so much easier to treat several dermatoses which otherwise were the cause of significant morbidity among people (Bylappa et al., 2015).

Conditions widely treated with topical corticosteroids include eczema, seborrhoeic dermatitis, lichen planus, discoid lupus erythematosus. For successful treatment with TC, key factors to be considered are an accurate diagnosis, selecting the correct drug, keeping in mind the potency, delivery vehicle, frequency of application, duration of treatment and adverse effects, and proper patient profiling (Phillips, 1996).

Irrational prescription of drugs is a common occurrence in clinical practice which may even occur with the use

of topical corticosteroids. Misuse of topical corticosteroids is very common in patients with facial dermatoses. Many patients prefer to use topical corticosteroids as a fairness cream. To minimize adverse cutaneous and systemic reaction, especially with prolonged use, the rational use of topical steroids should include careful consideration of patient's age, the total area of application, quantity to be applied, the efficacy of selected corticosteroid and frequency of application. Hence one step to achieve prescribing is periodic auditing of prescription (Kumar et al., 2011).

The purpose of this study was to monitor and analyze the pattern of prescribing topical corticosteroids among all patients in a tertiary teaching care hospital. Drug utilization studies not only includes standards of medical treatment at all levels in the healthcare system but also helps in the identification of problems related to drug use such as polypharmacy, drug-drug interactions, and adverse drug reaction.

SUBJECTS AND METHODS

The present study was approved by Institutional Ethics Committee (IEC) was taken before initiation of the study (MCP/PD/PR/16). This observational prospective study was conducted in Osmania General Hospital, Hyderabad, India which is a tertiary care hospital for the duration of 6 Months. The study included 150 patients attending the dermatology department who were prescribed topical corticosteroids.

All the patients of either gender attending OPD dermatology and patients prescribed corticosteroids were included in the present study. Patients who are not willing to participate in the study, pediatric patients, patients with the psychological disorder and pregnant women were excluded from the present study.

The data collected included age, sex, symptoms, diagnosis, number of drugs, the potency of the steroid, dose, duration, strength, quantity to be applied and frequency of administration was mentioned. All relevant and necessary information for the study was collected from the outpatient department cards, treatment charts and verbal communication with the patients.

RESULTS

According to inclusion and exclusion criteria, a total of 150 patients were analyzed during the study period. Among the total patients included in the study, the number of male patients was 83 (55%) and the number of female patients was 67 (45%) (Table 1). The disease diagnosis most common in the study population was

Psoriasis with a total of 40 (27%) patients and dermatitis of 35 (23%) patients. The number of patients who presented with a lichen planus was 21 out of 150 (14%). Patients who presented with prurigo simplex 10 (7%), eczema 9(6%), tinea corporis 7 (5%), vitiligo 5 (3%), seborrheic nephritis 3 (2%) and others 20 (13%) (Table 2). The age group that is showing maximum attendance in the OPD was 30-39 years. There were total 31 patients of this age group, of these 18 were coming for the treatment of Psoriasis (Table 3). Betamethasone was the most commonly prescribed topical corticosteroid with 98 prescriptions and was given more in psoriasis. Clobetasol, which is a potent topical corticosteroid, was prescribed in 42 patients and of these 21 patients were of Psoriasis. A total 34 patients received 2 topical steroids at a time. The commonly received combination was betamethasone dipropionate 0.025% and halobetasol dipropionate. The most common topical corticosteroids prescribed were betamethasone dipropionate (65%), Clobetasol propionate (28%), mometasone (12%), halobetasol (16%) and fluticasone propionate (1%) (Table 4).

Table 1. Gender wise distribution of study sample.

Male	Female
83	67

Table 2. Disease wise distribution of study sample.

Disease	Number of Prescriptions	Percentage (%)
Psoriasis	40	27
Dermatitis	35	23
Lichen Planus	21	14
Prurigosimplex	10	7
Eczema	9	6
T. Corposis	7	5
Vitiligo	5	3
S. Nephritis	3	2
Others	20	13

DISCUSSION

Drug utilization or drug use evaluation studies are the enduring, valid, and organized quality enhancement processes Kumar et al., (2011). These studies are designed to review drug use and prescribing patterns of the drug with current recommendations or guidelines for the treatment of a certain disease. They evaluate drug use at a population level, according to age, sex, and social class.

Table 3. Age wise distribution of study sample.

AGE	Psoriasis	Eczema	Lichen Planus	Dermatitis	Prurigo Simplex	Vitiligo	Tinea Corposis	Seborrhic Nephritis	Others
<10	2	2	0	15	0	1	4	0	0
10-19	6	3	1	6	7	1	1	0	5
20-29	2	1	7	6	0	1	1	0	7
30-39	18	0	3	2	0	1	0	2	5
40-49	5	0	11	4	3	0	0	0	3
50-59	7	2	0	1	0	1	0	0	1
>60	2	1	0	2	0	0	1	0	0

Table 4. Distribution of topical corticosteroids.

Topical Corticosteroid	Psoriasis	Eczema	Lichen Planus	Dermatitis	Prurigo Simplex	Vitiligo	Tinea Corposis	Seborrhic Nephritis	Others
Betamethasone	35	5	15	15	6	3	2	0	17
Clobetasol	21	0	9	9	0	1	0	2	0
Mometasone	13	0	0	2	0	0	0	2	1
Halobetasol	16	0	5	2	1	0	0	0	0
Fluticasone	0	1	0	0	0	0	0	0	1

The prescriptions need to be audited periodically to enhance the therapeutic effectiveness, reduce the adverse effects, provide criticism to prescribers and analyze the execution of medical treatment standards. Data evaluation is the most crucial step in the drug utilization studies. Summarizing the data into the major categories of results and verifying the point of deviation of the data from the previously described guidelines and usage criteria are very important steps. Then, the reasons for this deviation should be evaluated. For any drug utilization study to be successful, scientific interpretation of the results instead of a value judgment needs to be prepared and results of the same should be circulated.

The present study sample gave a cross-section of the patients attending the dermatology outpatient department for various diseases. Our study has shown that of 150 subjects. Among them, males were more in number when compared to females. There were 83 males and 67 females. The age group 30-39 years was the largest attending the OPD with 18 patients. A total of 40 (27%) patients were presenting with psoriasis. Second largest age group <10 years of patients were presenting with dermatitis with a total of 35(23%) patients respectively.

Our studies show betamethasone was the most commonly prescribed topical corticosteroid with 98 prescriptions and was given more in psoriasis. Clobetasol, which is a potent topical corticosteroid, was prescribed in 42 patients and of these 21 patients were of Psoriasis. A total 34 patients received 2 topical steroids at a time. The commonly received combination

was betamethasone dipropionate 0.025% and halobetasol dipropionate. The most common topical corticosteroids prescribed were betamethasone dipropionate (65%), Clobetasol propionate (28%), mometasone (12%), halobetasol (16%) and fluticasone propionate (1%).

A short course of a suitable oral antibiotic may be indicated in more severe cases. The development of resistance needs to be prevented by sensibly prescribing all the antimicrobials, including topical agents. They rarely use injectable preparation to avoid systemic side effect. In our study, the majority of patients were prescribed with anti-histaminic (84%); antibiotics (44%), and emollients and skin protective agents (23%). Among other miscellaneous drugs (31%), antifungals and multivitamins were commonly prescribed. It is advisable that the average number of drugs prescribed must be kept as less as possible because higher numbers always result in the raised risk of drug interactions, adverse drug reactions, reduced medication observance. In 57% of the prescriptions, generic name was specified. None of them were specified with either strength or quantity. Only 21% were specified with the area of application, 25% with the route of administration, and 23% with a frequency of administration. The under usage of steroids leads to subtherapeutic effect, whereas the overdosage of steroids, with prescriptions not mentioning the particular quantity of the steroids, results in different adverse effects. The responsibility should also be shared by the pharmacists to educate the patients about the correct application of topical corticosteroids, the frequency of application, and so on Kumar et al., (2011). The patients should also understand the disease

and its progression, the complications caused by improper treatment, and overuse and misuse of medications and their outcomes.

Many topical corticosteroids are now available in the market for the management of dermatological diseases (Rathi, 2006). A basic understanding of them certainly helps clinicians to select appropriate preparations for a particular disease and thus maximize therapeutic efficacy and minimize the potential for adverse effects. For successful treatment with topical corticosteroids, accurate diagnosis, proper patient profiling and selecting the correct drug keeping in mind the potency, delivery vehicle, frequency of application, duration of treatment and adverse effects is required. Low potency corticosteroids are typically used when treating large areas or for long-term application. They are also more suitable for use in children or on areas of thinner skin such as the face, groin or axilla. More potent corticosteroids are suitable for severe conditions and for use on areas of the body that have thicker skin such as the palms of the hands and soles of the feet (Rathi Kumrah, 2011). They should generally not be used under occlusion or on areas of thinner skin. Occlusion increases the absorption of topical corticosteroids by increasing the hydration of the skin and therefore enhancing penetration. Underuse of topical corticosteroids is much more common than overuse. A fingertip unit is a guide to how much corticosteroid is to be applied to a particular area and describes the amount of product squeezed onto the top third of the finger. This was devised by Long and Finley. One fingertip unit is equivalent to approximately 0.5 g for a male and 0.4 g for a female. Infants and children should use one quarter to one third of the adult amount. Once or twice daily application was suggested. Frequent use of topical corticosteroids causes local and systemic side effects. Most common being skin atrophy, striae, hypopigmentation, acne form eruptions, rosacea-like perioral and periorbital dermatosis and hypertrichosis. The anti-inflammatory potency of some steroids may vary among patients, depending on the frequency of administration, the duration of treatment, and where on the body they are used. Adverse effects are uncommon when using mild to potent corticosteroids for less than three months, except when used on the face and neck, in intertriginous areas (skin folds), or under occlusion. However, very potent corticosteroids should not be used continuously for longer than three weeks. It is imperative that the physician chooses the right drug for a patient, at a price that he can afford and also provide the relief that he is seeking (Rathi, 2006; Rathi and Kumrah, 2011). It is equally important to spend more time

with the patient to explain the dosing and the adverse effects associated with self-prescription of the same drug. It would however be encouraging to have more generic prescribing. Even though the temptation is high to prescribe a fixed dose combination containing a corticosteroid it is necessary to prescribe them as single preparations as the adverse effects associated with their use are more. The proper use of corticosteroids requires the involvement of dermatologists, general practitioners, nurses and pharmacist.

It would be easier for the patient if the labeling of the topical corticosteroid products include the "finger-tip unit" instruction with images for a better understanding. It will be even better if there is a chart to show the required quantity for the specific area of the body. It was heartening to note that in our study all prescriptions recorded the route of administration, dose, frequency of administration and duration of treatment. This positive observation would be a sign of good prescribing pattern in this outpatient department. However, the finger-tip unit if used would have been welcome.

CONCLUSION

This study provides an insight into the dermatological disease pattern and is mainly focused on drug prescribing pattern of corticosteroids in the Department of Dermatology. It helps reduction of interactions and improvement of patient care. Patient counseling about the utilization of prescribed topical corticosteroids increases the medication adherence. This could also prove to be cost-effective for the patient.

CONFLICT OF INTEREST

None declared.

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