"Topical corticosteroids prescription trends in dermatology outpatient unit of a Tertiary Care Research Institute Hospital, South India"

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Abstract

Background: *Reviewing prescription orders forms is an important part of improving standards of medical treatment. It not only shows us the epidemiology of diseases but also throws light on the rationality of use of drugs for treatment of medical diseases. This study was conducted to gain knowledge into the prescriptions pattern of topical corticosteroids in dermatology outpatient unit of a tertiary care research institute hospital, South India.*

Objectives: *The objectives of this study was to study the demographic details of patients, the drug prescription trends and drug utilization in patients with skin disease who are on topical corticosteroids.*

Methods: *The study was a prospective observational study conducted in dermatology department of Shri Devi Institute of Medical Sciences and Research Hospital, Tumkur, Karnataka for a period of 2 years. Patients were taken for the study after obtaining consent from patients with a skin disease requiring topical corticosteroids on an outpatient basis. Data was collected in a specially designed proforma containing demographic data of patients, diagnosis and drug data. The data was recorded, tabulated and analyzed in percentages.*

Results: *A total of 1260 prescriptions were analyzed. Among a wide range of age groups, patients belonging to age group of 21-30 were highest. It was found out that prevalence of psoriasis was highest followed closely by polymorphic light eruptions. A total of 2150 drugs were prescribed with a mean of around 2 drugs per prescription. Of the 2150 drugs, 840 were antihistamines and rest were either a plain topical steroid or a combination of corticosteroid with and antibacterial or antifungal. Of the 840 antihistaminics that were prescribed, hydroxizine was prescribed most commonly and of the 1310 topical corticosteroids, combination of cobetasol and salicylic acid was commonly prescribed.*

Conclusion: *Periodic prescription audit is a must and an essential tool for improving standards of medical treatment*.

Keywords: *Prescription trends, Topical corticosteroids, Potent steroids*

Introduction

The main aim of drug therapy in dermatology is to use the safest and least number of drugs in order to obtain best possible results in quick time and in a cost effective manner. This can be ensured by regular auditing of prescriptions which will not only improve the standards of medical treatment but also guide us in prescribing medicines rationally[1]. Common drugs used in dermatology are antibiotics, antifungals, antihistaminics, local anesthetics, emollients, keratolytics, vitamins, minerals, and topical and sometimes systemic steroids. Among these topical steroids form an important group of drug in dermatology and still constitute one of the largest group of drugs used in this discipline[2]. The main use of topical steroid is in non-infective dermatological disorders associated with inflammation such as psoriasis, atopic dermatitis, contact dermatitis and otitis externa[3-10]. Like any other drugs, topical steroids have adverse effects associated with hypersensitivity, percutaneous absorption and tachyphylaxis[11-20]. Since steroids are associated with potent anti-inflammatory and immunosuppressive action, they tend to cause bacterial and fungal infections especially on prolonged use[21]. In addition, children are more susceptible to systemic side effects of steroids compared to adults because of more percutaneous absorption[18]. In order to minimize these adverse effects, study on prescription pattern of topical corticosteroids plays a pivotal role. The purpose of this study is to evaluate and analyze the pattern of prescribing topical corticosteroids among outpatients attending dermatology clinic in a tertiary care center.

Method

After obtaining approval and clearance from institutional ethics committee, study was conducted for a period of 2 years from January 2014 to December 2015 in department of dermatology of Shri Devi Institute of Medical Sciences and Research Hospital, Tumkur, Karnataka. The patients who were having a satisfying inclusion criteria and those who were willing to provide informed consent were enrolled in the study. Data was collected by prospective direct observation and were recorded in a specially designed proforma which included demographic data, disease and drug data. Data was analyzed statistically and were represented in the form of percentages.

Results

The study included 1260 prescription collected from various age groups. Date, name, age, sex, brand

name of the drug was mentioned and counter signed by consultant in all prescriptions. Weight of the patient was mentioned in 300 (23%) pediatric prescriptions (Table 1). Prescriptions were given for specific number of days and patients were asked to come for follow up after completion of given drugs. None of the prescriptions carried name of the consultant and no instruction in fingertip unit (FTU) drug application was given. Among them 53% of patients were male and rest 47% were female. Study include patients of a wide range of age group with the highest of around 26% being in age group of 21-30. Summary of patient information is enlisted in Table 2. Among the 1260 analyzed prescriptions, prevalence of psoriasis was highest with around 17% of cases followed closely by polymorphic light eruptions (16%) and nummular eczema (14%). Least prevalent were calus of foot, vitiligo, prurigo simplex and insect bite reaction with 0.7% each. Summary of skin diseases observed are enlisted in Table 3.

Table 1: Demographic details

Contents of prescriptions	No of Prescriptions (n)	(%)
Date of prescription	1260	100
Name of the Patient	1260	100
Age of the patient	1260	100
Address of the Patient	-	-
Sex of the Patient	1260	100
Weight of the Patient	300	23.75
Instructions to the Pharmacist	-	-
Brand name of the drug	1260	100
Duration of treatment	1008	80
Dosage Unit (FUT)	-	-
Special Instruction to the Patients	-	-
Prescriber Identity/ Name of the Prescriber	-	-
Signature of the Prescriber	1260	100

Table 2: Summary of patient's general information

General information	Number of patients (%)
Gender	
Male	670 (53%)
Female	590 (47%)
Age groups (in years)	
00-10	70 (5.5%)
11-20	230 (18.25%)
21-30	330 (26.19%)
31-40	200 (15.87%)
41-50	190 (15.07%)
51-60	90 (7.14%)
61-70	120 (9.52%)
71-80	10 (0.79%)
81-90	20 (1.58%)

About 2150 drugs were prescribed in the 1260 analyzed prescriptions with a mean of 2 drugs per prescription. Of the 2150 drugs prescribed, 1310 drugs were topical corticosteroids and rest 840 drugs were antihistaminic drugs. Out of 1310 topical corticosteroids, combination of clobetasol and salicylic acid were prescribed highest with 23%, followed by clobetasol and fusidic acid (16.6%) and mometasone furoate (15.7%).

Table 3: Summary of disease conditions that were diagnosed in study participants

Skin disease	Number of patients (%)
Acanthosis nigricans	50 (3.9%)
Hair dye allergy	10 (0.7%)
Xerotic eczema	60 (4.7%)
Psoriasis vulgaris	170 (13.49%)
Calus of foot	10 (0.7%)
Vitiligo	10 (0.7%)
Inverse psoriasis	10 (0.7%)
Papularurticaria	40 (3.17%)
Nummular eczema	140 (11.11%)
Contact irritant dermatitis	120 (9.52%)
Prurigo simplex	10 (0.7%)
Atopic dermatitis	40 (3.17%)
Alopecia areata	20 (1.58%)
Pitryasis rosea	30 (2.3%)
Polymorphic light eruption	160 (12.69%)
Senile pruritis	20 (1.58%)
Lichen simplex chronicus	50 (3.96%)
Lichen planus	20 (1.58%)
Senile xerosis	20 (1.58%)
Fissure foot	40 (3.17%)
Palmoplantarkeratoderma	90 (7.14%)
Photo dermatitis	20 (1.58%)
Scabies	20 (1.58%)
Insect bite reaction	10 (0.7%)
Melasama	90 (7.14%)
Intertigo	10 (0.7%)

Least prescribed topical corticosteroids was a combination of clobetasol, fusidic acid, clotrimazole and combination of clotrimazole, beclometasone around 1% each. Out of the 1310 steroid prescribed, 27% was plain steroid and rest was a combination with antibacterial or antifungal agent. Most commonly used combination among them was clobetasol and salicylic acid. Of the 840 antihistaminics that were prescribed, hydroxizine was prescribed most commonly (Table 4).

Table 4: Drug prescriptions trends in department of dermatology

Drug name	Number of patients (%)
Hydroquinone + Mometasonefuroate + Tretinoin	30 (2.3%)
Clobetasol proprionate with neomycin	120 (9.5%)
Clobetasol + salicylic acid	290 (23.01%)
Mometasone + salicylic acid	50 (3.9%)
Clobetasol	110 (8.7%)
Clobetasol + fusidic acid	210 (16.6%)
Beclometasone diproprionate	40 (3.17%)
Beclometasone + fusidic acid	120 (9.5%)
Halobetasol + salicylic acid	80 (6.3%)
Mometasone furoate	190 (15.07%)
Hydrocortisone 1% cream	30 (2.3%)
Clobetasol + fusidic + clotrimazole	10 (0.79%)
Clotrimazole + beclometasone	10 (0.79%)
Mometasone + fusidic	10 (0.79%)
Halobetasol	20 (1.5%)
Ketoconazole	10 (0.79%)
Cetrizine	90 (7.14%)
Chloropheneramine maleate	10 (0.79%)
Levocetrizine	40 (3.17%)
Hydroxizine	680 (53.9%)

Discussion

Our prescription pattern study had a very extensive period of 2years covering over 1260 prescriptions. This is one of the largest study sample under taken for study. Periodic review of prescription is essential to increase therapeutic efficacy, decrease adverse effects, provide feedback to the prescribers and analyze the observance of standards of medical treatment.[22] Use of topical corticosteroids were preferred for treatment of skin diseases as they have site specific action, less systemic absorption, less systemic adverse effects and also more convenience to the patients.

Prescriptions which were analyzed had followed standard protocol in terms of mentioning date, name, age, sex of the patients. Weight was mentioned in only peadiatric patients. Most of the topical corticosteroids prescribed were in combination (73.48%) and these findings were comparable with studies by Khan NA et al and Sarkar C et al.[23,24]. Of these combinations, steroids with antibiotic were highest (36.39%) because of the infective nature of the lesion. Steroids with keratolytic was prescribed in 33.21% of patients followed by combination of steroid with antifungal (0.79%) and steroid with antibiotic and antifungal (0.79%). This is because of inflamed fungal infections or mixed infections of lesions. In our study maximum number of steroids prescribed were of moderate potency range.

Maximum number of patients were in the age group between 21 to 30 (26.11%), this was followed by age group between 11 to 20 (18%). This was comparable to study done by Ankit et al.[25] In our study, psoriasis were recorded highest (13.49%) and most of which were infected, justifying our use of steroid with antibiotic combination, this was followed by polymorphic light eruptions (12.69%). This was comparable to the studies done by Divyashanthiet al.[26]

Among the topical corticosteroids used in our study, combination of clobetasol with salicylic acid were prescribed highest (23.01%) followed by plain mometasone (15.07%). This was in comparison with studies done by Jena M et al.[27] Most of the prescribed systemic agents were antihistaminics given orally. Among the antihistaminics, hydroxizine were prescribed highest (53.9%) followed by cetrizine, levocetrizine and chlorpheneramine maleate which is justified by the fact that most of the diagnosed cases (71.79%) had intense pruritus. Our study also showed that average drugs per prescription was around 2 drugs, indicating that polypharmacy was not practiced thereby reducing cost of treatment, reducing drug interaction, drug resistance, adverse effects and irrational prescribing. The dose and dosage schedule in form of fingertip unit (FTU) were not mentioned in the prescriptions.

Limitation of the study: Even though the study was extensive covering over 1260 prescriptions conducted over a period 2 years, this might not reflect the demography of the population since it was an tertiary care hospital based study.

Conclusion

Periodic prescription audit is a must and an essential tool for improving standards of medical treatment. This ensures the rational prescription of medicines especially topical steroids. Establishing treatment guidelines, Pharmacovigilance programme and revision of primary care essential drug list is necessary. Since our study though extensive may not reflect the demographic pattern of the society at large, which needs for large Multi-centric study.

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