

ORIGINAL ARTICLE

Prescription Pattern of Corticosteroids in Dermatology Cases in a Tertiary Care Teaching Hospital

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Abstract

Background: In recent times due to the inadvertent use of corticosteroids in dermatology and cosmetology clinics, drug utilization study is important in making necessary guidelines for using corticosteroids. **Objective:** To study prescription pattern of corticosteroids in patients admitted in dermatology ward. **Materials and Methods:** A retrospective study was conducted in the inpatient cases of Dermatology ward in a tertiary care hospital, over a period of 1 year. The data was collected from the medical record section of the hospital in a designed proforma containing relevant details such as Age and sex, skin conditions and drugs used. **Result:** Majority of skin disease patients between 21-40 years of age were given steroids. Average number of drugs per prescription was four, of which most of the prescriptions had topical preparation of steroid (50 patients), Patients with moderate to severe skin disease were prescribed steroids in both systemic and topical routes (31 patients). Most widely used Systemic steroid was Hydrocortisone given Intramuscularly (15 patients) as stat IM/IV followed by oral Methylprednisolone, while some were started directly on methylprednisolone orally for about 5 to 6 days in tapering doses. Mometasone and Betamethasone ointments were widely used topically. **Conclusion:** It is concluded that most of the admitted cases were given steroids. In moderate to severe cases, stat single dose of systemic corticosteroid (intravenous / intramuscular) followed by oral steroid preparation was given. Among all only topical steroid preparations were used in most of the cases.

Keywords: Prescribing pattern, Corticosteroids, Dermatology, Skin diseases

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Introduction

Skin is the largest organ in the body and many diseases manifest as skin disorders with variety of symptoms¹. Corticosteroids introduced in 1950 was used extensively in treating skin diseases and management of various diseases like asthma,² autoimmune disorder, anaphylactic reactions, dermatosis like eczema, psoriasis, contact dermatosis, allergy, nephritic syndrome. Discovery of first topical corticosteroid (TCS) compound F (hydrocortisone) by Sulzberger and Witten in 1952 had revolutionized the treatment of dermatological disorders, particularly inflammatory diseases.^{3,4}

Typical undesired effects of glucocorticoids when used systemically present with hypertension, hypokalemia, hypernatremia with

out causing peripheral oedema, metabolic alkalosis, hyperglycemia, insulin resistance,^{5,6} connective tissue⁷ weakness peptic ulceration^{8,9} Immunosuppression¹⁰ and Steroid-induced osteoporosis.¹¹

Long-term topical steroids users who have used steroids over a period of weeks, months, or years specially for unnecessary cause (skin whitening creams, anti-acne creams anti-ageing treatments by quacks) reported to have been suffering from uncontrollable, spreading dermatitis^{12,13} and worsening skin inflammation and cancers.¹⁴

This is where the need of drug utilization studies come into light. Drug utilization studies are the organized quality enhancement processes which are designed to review drug usage and prescribing patterns with current

recommendations or guidelines for the treatment of certain disease.

Prescriptions need to be audited periodically to enhance the therapeutic effectiveness, minimize the adverse effects, provide critical feedback to prescribers and analyse the execution of medical treatment standards. Data evaluation is the most crucial step in the drug utilization studies.

Materials and Methods

It was a retrospective study conducted at a tertiary care hospital, Karimnagar, Telangana State from October 2015 to October 2016. The protocol of the study was approved by Institutional Ethics Committee (IEC) at Chalmeda Anand Rao Institute of Medical Sciences [CAIMS], Karimnagar. A total of 112 patient prescriptions were taken from Department of Dermatology for the study.

The indices taken into consideration were

1. Average number of drugs per prescription
2. Average number of corticosteroids per prescription
3. Gender wise distribution
4. Age groups with maximum use of corticosteroids
5. Route of administration
6. Type of steroid based on potency
7. Most widely used steroids in dermatology departments
8. Percentage of corticosteroids prescribed by generic name

Results

A total of 112 prescriptions were analyzed during the study period amongst which 43 (38.4%) were male and 69 (61.6%) were female patients. Number of patients with skin disease between the age group of 21-40 years was more (28 males and 55 female) than other age groups. Majority of the patients were treated with steroids. Patients with severe skin manifestations i.e. 31 patients were given systemic and topical steroids, while those with mild to moderate skin manifestations were given only topical steroid i.e 50 patients and only about 15 patients were treated with only systemic steroids.

The most common skin manifestation noticed was urticaria, cellulitis, dermatosis, pruritis, mostly seen in women at the age of 21-40 yrs (Indicating that women in their fertile period of life are sensitivity to allergens and fragility due to hormonal changes).Based on the severity of skin conditions patients were treated with immediate stat intravenous injection of Hydrocortisone and Chlorpheniramine maleate and Mometasone / Betamethasone topically.

In contrary Hansens type 1 reaction, eczema and psoriasis were commonly seen in males between the age group 21-40 year. Hansens type1 reaction was treated with systemic steroids, Hydrocortisone 500mg IM/IV stat followed by oral methylprednisolone 50mg for about 1 month later tapering the doses to 20mg, 10mg, and 5mg for every 10days. Mometasone ointment of 0.1% was used on the rashes over the skin until the inflammatory signs faded off. SLE and Pemphigus vulgaris were treated with methylprednisolone 100mg/day orally which was tapered down to every week.

Among all the topical preparations of corticosteroids, Mometasone is widely used when compared to other topical steroid preparations. Mometasone furoate Ointment, 0.1% is prescribed in 42 patients to be applied thrice daily, more over ointment preparation of Mometasone was prescribed more than gel formulation (probably could be because of better efficacy than gel).Clobetasol propionate Cream 0.05% in 10 patients, of which some of them were given Clobetasole with combination of Gentamycin and Miconazole where fungal and superinfected bacterial infection was suspected.

Betamethasone Dipropionate Ointment 0.05% given in 27 patients thrice daily. It's been noticed that betamethasone is drug choice in pruritis and inflammatory skin conditions. Among systemic corticosteroids, injection Hydrocortisone was given intramuscular/ intravenous depending on the severity of the disease and oral prednisolone was used most commonly in tapering doses before stopping. The steroids prescribed with generic name were 78%.Along with steroids various concomitant medications such as anti-histaminics, anti-inflammatory, antibiotics and vitamins were used in treating the patients.

Majority of the patients (40) were treated with Steroids, Antihistaminics and NSAIDS. First generation Antihistaminics were preferred (Injection Chlorpheniramine maleate 1 ampoule, Injection Hydrocortisone 500mg 1 vial given IM/IV stat dose with Injection Diclofenac 1 ampoule IM and Mometasone for topical application, some were treated with tapering dose of tablet methylprednisolone).

About 21 patients suffering from pemphigus vulgaris, SLE, few cases of psoriasis were given Steroids, antibiotics and NSAIDS (Injection Hydrocortisone 500mg stat dose IM/IV, Injection Ceftriaxone IV/IM, while few of them were given Tablet Methotrexate and NSAIDs like Injection Diclofenac IM and some older patients (>55 years) were given Tramadol IM).

Patients having intense itching and allergic manifestation along with the infection (18 patients) were treated with stat doses of Injection Hydrocortisone, Injection Chlorpheniramine maleate, Injection ceftriaxone and NSAIDs like Injection Diclofenac. Some patients did not require steroids (those with only infection, and few with only mild allergic manifestations) were treated with Antibiotics, NSAIDS, and Antihistaminics.

Vitamins and minerals were given in combinations, mostly vitamin D₃ with calcium and vitamin A preparations in patients suffering from psoriasis. Women above 40 years of age were given calcium and iron preparations orally. Some were given multivitamin preparations too.

Disease	Antihistaminic	Antibiotic	NSAIDs	Vitamins	Steroids		
					Only Systemic	Only Topical	Both
Dermatitis	8	-	8	-	0	7	3
Pustulosis	5	10	11	4	0	6	2
Eczema	8	10	10	-	0	8	3
Hansens type1 reaction	13	-	-	-	4	-	9
Urticaria	15	-	15	-	-	8	7
Pemphigus vulgaris	-	4	-	3	4	-	-
Cellulitis	5	11	11	8	3	-	-
Psoriasis	-	10	8	11	0	8	2
Pruritis	11	-	10	-	0	8	2
Drug allergy	7	-	8	-	0	5	3
SLE	-	5	5	6	4	-	-
Total	72	50	86	32	15	50	31
Percentage	64.29%	44.64%	76.79%	28.57%	13.392%	44.64%	32.29

Discussion & Conclusion

The present study attempts mainly to assess the general pattern of how corticosteroids are used in patients admitted in dermatology ward rather than attempting to judge individual prescription as appropriate or inappropriate. The result of this study indicates that corticosteroids were widely prescribed for patients admitted in the dermatology ward.

Patients with intense skin condition requiring continuous observation and treatment were admitted in dermatology ward and most often it

was manifested as severe inflammatory signs and symptoms. Owing to the fact corticosteroids are excellent anti-inflammatory drugs whether topical or systemic they were most preferred for immediate treatment in cases with severe inflammation. Hence they are one of the largest groups of drugs used in dermatology. Rational use of steroids can minimize the systemic and cutaneous side effects.

The under use of steroids leads to sub therapeutic effect, whereas the over dosage/ longer duration of steroids use, with prescriptions not mentioning the particular quantity of the steroids, results in different

adverse effects. Pharmacist should also be responsible in educating patients about correct application of topical corticosteroids, the frequency of application, and so on. The patients should also understand the disease and its course, the complications caused by overuse and misuse of medications.

It is important to choose the right medicine(s) for a patient and in an appropriate manner in order to achieve the best results of medicine therapy. In this study duration of treatment is mentioned in 92% of prescriptions, quantity required were mentioned in 90% of the prescriptions, Strength of the drugs were mentioned in 77% and instructions regarding the use of topical preparation were mentioned in only 57% of cases.

Efforts has to be made in writing the prescriptions in capital letters, strength of the drug to be taken and clear instruction of how and when to be consumed or applied may avoid unnecessary side effects. This positive observation would be a sign of good prescribing patterns in this dermatology cases. The irrational use of drugs is a common occurrence throughout the world.

Average number of drugs per prescription is an important index of prescription audit. In this study the mean number of drugs per prescription was found to be 3, it was lower than what had been previously reported in other studies. It is preferable to keep the number of drugs per prescription as low as possible since higher figures lead to increase risk of drug interaction, adverse effect and increased cost to the patient. In study reports about 78% of drugs were prescribed by generic name. The remaining 22% of drugs prescribed by brand names is a matter of concern. Prescribing by brand name may be an evidence of dangerous promotional strategy by pharmaceutical companies.

This study was aimed for the benefit of the patients, providing feed back to the prescribers and desirable in rationalizing prescribing practices.

It may be concluded that according to the present study females were more affected with skin conditions than males. In 21-40 years age group more patients were admitted and prescribed steroids than other age groups. Average number of drugs per prescription were four of which most of the prescription had

topical preparation of steroid. Patients with moderated to severe skin disease were prescribed steroids in both systemic and topical routes.

Most widely used steroids were Hydrocortisone given intravenously / Intramuscularly, Methylprednisolone was preferred orally and Mometasone ointment and Betamethasone topically. Percentage of corticosteroids prescribed by generic name was more than brand name. Care was taken to prescribe calcium and vitamin tablets for those close to menopausal age.

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