

RESEARCH ARTICLE

Prescribing pattern of corticosteroids among the dermatology inpatients in a tertiary care teaching hospital of north India - A retrospective, observational study

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ABSTRACT

Background: Glucocorticoids, are one of the commonly prescribed drugs in a large fraction of patients in the dermatology department. The use of corticosteroids has brought a remarkable change in the field of dermatology as these drugs afford a dramatic relief in inflammatory and pruritic skin conditions but may lead to deleterious effects if irrationally used. Moreover, the data related to drug usage pattern of corticosteroids in skin conditions is particularly lacking. Hence, it is vital to study the drug prescribing pattern of corticosteroids in skin diseases. **Aims and Objective:** To study the demographic details and drug prescription pattern of corticosteroids in patients with skin diseases. **Materials and Methods:** It was a retrospective, observational study carried out on dermatology inpatients over a period of 6 months. Case sheets of the patients were retrieved from medical record department and scrutinized systematically to know about the usage of corticosteroids in various skin conditions. **Results:** Out of the total 187 inpatients in whom corticosteroids were prescribed, 41.7% ($n = 78$) were male patients and 58.3% ($n = 109$) were female patients. The most common conditions for which corticosteroids prescribed were psoriasis in 30.5% patients followed by urticaria in 23.5% of patients. The topical corticosteroids were prescribed for 149 patients. Super potent topical corticosteroids were prescribed in 59.7% of patients whereas potent corticosteroids were prescribed in 26.1% of patients. None of the prescriptions used generic names. **Conclusion:** In this study, we observed the safe prescribing pattern for corticosteroids. However, none of the corticosteroids were prescribed by generic name. This indicates the need for continuing medical education for practicing physicians.


KEY WORDS: Corticosteroids; Prescribing Pattern; Dermatology

INTRODUCTION

In general practice, skin diseases account for a significant number of cases. The pattern of skin diseases varies from one country to another and across different parts within the

same country. The prevalence of skin diseases in the general population varies from 11.6% to 63% as seen in various studies.^[1] Many people suffer from common skin problems that are common in all the age groups. The skin problems that are commonly found are acne, burn scars, hyperhidrosis, psoriasis, herpes simplex infection, scabies, vitiligo, pediculosis, varicella, herpes zoster, erythema, urticaria, and so on.^[2]

Corticosteroids play a vital role in the treatment of many diseases including skin. The ultimate goal in dermatological practice is to use the safest and least number of drugs to obtain the best possible effect in the shortest period at a reasonable cost. Before the commencement of steroid therapy, its objectives

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and limitations should always be clearly defined. Systemic steroids are used to treat various skin diseases such as eczema, bullous disorders, and other papulosquamous disorders. Topical corticosteroids have a long history of effectiveness in a wide spectrum of dermatological conditions, especially those characterized by hyperproliferation, inflammation, and immunological involvement.^[3]

These drugs are extensively prescribed because of their strong immunosuppressive and anti-inflammatory actions. This practice has led to quite often overprescribing of these drugs and, thereby, increasing adverse drug reactions.^[4] Ironically, the mechanisms of the same useful anti-inflammatory properties are also the reason for their adverse effects.^[5]

The topical application disadvantages are adrenal suppression, epidermal, and dermal thinning, purpura, striae, steroid induced rosacea, peioral dermatitis, and hypertrichosis.^[6]

Considering the economic burden of the skin disease treatment and because of the increased prevalence of the skin diseases, it is very important to study the drug prescribing pattern of skin diseases. The data pertaining to drug usage patterns of corticosteroids in skin conditions is particularly lacking. Keeping these facts in consideration, this study was undertaken in dermatology inpatients who were on corticosteroid treatment to generate baseline data and to study the demographic details and drug prescription pattern of corticosteroids in patients with skin diseases.

MATERIALS AND METHODS

It was a retrospective, observational study of 6 months duration conducted in Acharaya Shri Chander College of Medical Sciences and Hospital, Jammu, Jammu and Kashmir. The Institutional Ethics Committee approval was obtained before the commencement of the study. The dermatological inpatient case sheets were retrieved from the medical records department for the duration of 6 months (from September 2016 to February 2017) and scrutinized systematically. Patients with skin diseases who were prescribed corticosteroids were included while pregnant and lactating women and patients with psychological disorders were excluded from the study. Information obtained from the medical case sheets of the patients was recorded in a pre-designed pro forma that includes demographic profile of the patients, diagnosis, type of corticosteroids prescribed, route of administration of corticosteroids, and whether they are prescribed through generic or brand name. Among these, a special emphasis was given to steroids prescribed through the topical route to find out their potency, usage of other topical agents in combination with them (e.g., topical steroids with antibiotics/antifungals), and the group to which they belonged. A detailed analysis was performed to record the demographic profile, the pattern of various skin diseases with the pattern of drug usage. Depending on the potency,

the topical corticosteroids were classified into seven groups as per the American classification^[7] and into four groups by British classification.^[8]

Statistical Analysis

The SPSS 17.0 was used for statistical analysis. Results were expressed in terms of percentage.

RESULTS

As per the demographic data obtained, out of the total 187 inpatients who were prescribed with corticosteroids, 41.7% ($n = 78$) were male patients, and 58.3% ($n = 109$) were female patients (Figure 1).

Majority of the patients were in the age group of 21-30 years (37.9%) followed by 31-40 years (28.3%) (Figure 2).

Three most common conditions observed were psoriasis $n = 57$ (30.5%), urticaria $n = 44$ (23.5%) and tinea corporis $n = 29$ (15.5%) of patients. Detailed pattern of skin diseases observed in our study is shown in Table 1.

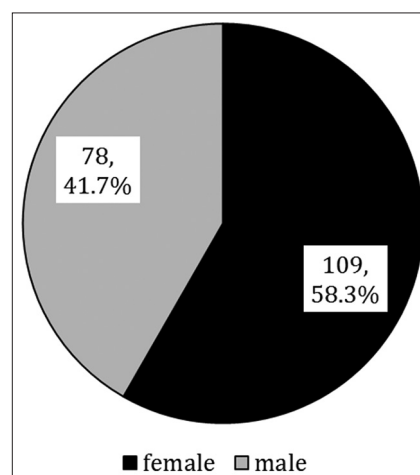


Figure 1: Distribution of the patients according to gender

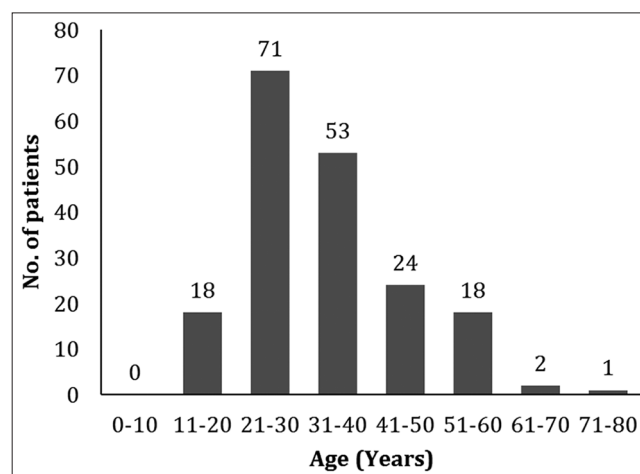


Figure 2: Distribution of the patients according to age

The topical corticosteroids were prescribed for 149 patients, oral steroids were prescribed for 73 patients, and parenteral were prescribed for 54 patients. Details of various dosage forms prescribed are shown in Table 2.

Potency of the topical corticosteroids commonly prescribed was of super potent in 89 (59.7%) of patients and mild strength steroids in 1 (0.67%) of patients as shown in Table 3.

Table 4 depicts the various formulations of prescribed topical steroids. Ointment was the most frequently prescribed in 77 (51.7%) of patients followed by cream in 49 (32.8%).

In our study, it was observed that in 55 (36.9%) of patients topical steroid preparations were used as monotherapy whereas in 94 (63%) of patients topical steroids were combined with salicylic acid, gentamycin, clotrimazole, and fusidic acid as shown in Table 5.

In our study, it was observed that among the oral steroids. Prednisolone in 70 (95.9%) patients was most commonly prescribed followed by methylprednisolone in 3 (4.1%) patients as shown in Table 6. Among the parenteral injectable steroids, dexamethasone was the most commonly prescribed steroid in 42 (95.4%) followed by injection betamethasone in 2 (4.5%). Out of these both oral and injectable preparations were prescribed for 38 (32.5%) of patients.

DISCUSSION

Assessment of quality of medical care is carried out by medical audit.^[9] Prescription audit is a part of medical audit and is seen as one approach in improving the quality of patient care.^[10] It is the critical assessment of medical and health-care

system with a view to bring about necessary improvement in the same.

In the present study, patients prescribed with corticosteroids were commonly between 21 and 40 years of age (37.9%) among whom female patients (58.3%) were more compared to male patients (41.7%) which was comparable with the study done by Ankit and Bharat^[4] and Bylappa et al.^[11] The common skin conditions encountered in our study were psoriasis (30.5%) followed by urticaria (23.5%) and tinea corporis (15.5%). The disease pattern is comparable to the study done by Sarvanakumar et al.,^[12] Tamil Nadu, Mirshad et al.,^[13] Kerala and Divyashanthi and Manivannan^[14] where papulosquamous disorders such as psoriasis were the most common cause for admission. The most common route of administration was topical followed by oral and parenteral. This is consistent with the study carried out by Narwane.^[15]

In our study, potencies of the topical corticosteroids that were prescribed were commonly of superpotent (59.7%) and potent (26.1%), which were comparable to studies done by Jena et al.^[16] and Bylappa et al.^[11] It was found from our study that salicylic acid was most commonly combined with topical corticosteroids for its keratolytic action and promotion of good penetration. The other drugs that were given in combination with topical corticosteroids were gentamycin, clotrimazole, and fusidic acid which is similar to the studies done by Sweileh,^[17] Khan et al.^[18] and Sarkar et al.^[19] Topical antibiotics should only be used where the infection is limited to a small area of the skin. A short course of a suitable 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. The topical corticosteroids were commonly prescribed in the form of ointment (51.7%), cream (32.8%), and paste (1.3%). In the

Table 1: Distribution of some common skin diseases

| Diseases | Frequency (%) |
|---------------------|---------------|
| Psoriasis | 57 (30.5) |
| Dermatitis | 6 (3.2) |
| Pemphigus | 9 (4.8) |
| Tinea corporis | 29 (15.5) |
| Scabies | 25 (13.4) |
| Urticaria | 44 (23.5) |
| Systemic sclerosis | 11 (5.9) |
| Fixed drug eruption | 2 (1.1) |
| Insect bite | 4 (2.1) |

Table 2: Types of formulations

| Formulation | Frequency (n) |
|-------------|---------------|
| Topical | 149 |
| Oral | 73 |
| Parenteral | 44 |

Table 3: Potency of topical steroids

| Class | Potency | Frequency (%) |
|-------|---------------------------|---------------|
| 1 | Super potent | 89 (59.7) |
| 2 | Potent | 39 (26.1) |
| 3 | Potent-upper mid-strength | 9 (6.0) |
| 4 | Mid-strength | 7 (4.7) |
| 5 | Lower mid-strength | 4 (2.7) |
| 6 | Mild strength | 1 (0.6) |
| 7 | Least potent | 0 (0) |

Table 4: Types of topical formulations

| Formulation | Prescribed number n (%) |
|-------------|-------------------------|
| Ointment | 77 (51.7) |
| Cream | 49 (32.8) |
| Lotion | 21 (14.1) |
| Paste | 2 (1.3) |

Table 5: Combinations of topical formulations

| Topical steroid | Salicylic acid | Gentamycin | Clotrimazole | Fusidic acid | Total |
|-----------------|----------------|------------|--------------|--------------|-------|
| Clobetasol | 37 | 0 | 0 | 0 | 37 |
| Halobetasol | 23 | 0 | 0 | 0 | 23 |
| Betamethasone | 0 | 13 | 17 | 0 | 30 |
| Mometasone | 0 | 0 | 0 | 4 | 4 |
| Total | | | | | 94 |

Table 6: Type of systemic steroid prescribed

| Type of systemic steroid prescribed | Frequency (%) |
|---|---------------|
| Oral prednisolone | 32 (95.9) |
| Oral methylprednisolone | 3 (4.1) |
| Oral prednisolone+Injection dexamethasone | 38 (32.5) |
| Injection dexamethasone | 4 (95.4) |
| Injection betamethasone | 2 (4.5) |

present study, all the drugs were prescribed by brand name and none of the drugs were prescribed by generic name which is similar to the studies done by Kumar et al.,^[20] Mirshad^[4] et al., where 100% brand names usage was reported.

The current study suffers from few limitations. It was of short duration with less sample size. The under use of steroids leads to subtherapeutic effect, whereas the over dosage of steroids, with prescriptions not mentioning the particular quantity of the steroids, results in different adverse effects. Pharmacists should also be involved 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 and their outcomes.

CONCLUSION

Prescription pattern provides critical feedback to prescribing physician by focusing on rationalizing drug therapy. The majority of skin diseases is chronic in nature and need lifelong treatment. A special consideration should also be given regarding Psychiatric counseling to patients who are highly obsessed of their disease. Self-medication and erratic use of corticosteroids by patients can increase the risk of unwanted side effects.^[21] Their rational use can minimize their cutaneous and systemic side effects. Therefore, judicious use of corticosteroids and reinforced patient education will lower the risk of undesirable effects, and can be of great use in treating dermatological conditions.

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