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Dermatology

PRESCRIPTION PATTERN OF VARIOUS CORTISTERIOD USE IN DIFFERENT DERMATOLOGICALLY CONDITION

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ABSTRACT **Introduction:** Corticosteroids remain a cornerstone in dermatological therapy due to their potent anti-inflammatory and immunosuppressive actions. However, irrational prescribing, frequent use of high-potency agents, fixed-dose combinations (FDCs), and incomplete documentation increase the risk of adverse effects and misuse. This study aimed to evaluate the prescribing patterns and safety profile of corticosteroids in dermatology outpatients of a tertiary care teaching hospital. **Materials And Method:** A hospital-based, cross-sectional observational study was conducted in the dermatology outpatient department. One hundred patients prescribed corticosteroids by any route were enrolled using convenient sampling. Data were collected through a semi-structured proforma covering demographics, clinical diagnosis, and prescription details including drug name, route, potency, duration, FDC use, and documentation completeness. Descriptive statistics were applied using SPSS. **Results:** Of the 100 patients, 56% were male, and the majority (62%) were aged 21–40 years. Eczema (32%) was the leading indication, followed by psoriasis (18%) and contact dermatitis (14%). Topical corticosteroids were prescribed in 84% of cases, with high-potency agents being most common (40.5%). FDCs were used in 22% of patients, often clobetasol-based with antifungals or antibiotics. Only 61% of prescriptions mentioned potency, while details on site, frequency, and generic names were frequently omitted. **Conclusion:** High use of potent corticosteroids, frequent FDC prescriptions, and documentation lapses were observed. These findings highlight the need for rational prescribing practices, routine prescription audits, and clinician education to enhance patient safety and optimize corticosteroid use.

KEYWORDS : Corticosteroids, Dermatology, Prescription pattern, Topical steroids, Fixed-dose combinations, Rational drug use, Adverse effects, Prescription audit

INTRODUCTION

Skin disorders represent a significant proportion of consultations in both general medical and dermatological settings. They are among the most common reasons for seeking medical attention, affecting individuals of all age groups. The burden of dermatological diseases varies across regions and is influenced by several factors such as climate, socioeconomic conditions, occupational exposure, personal hygiene, and availability of healthcare facilities. Epidemiological studies have reported that the prevalence of skin diseases in the general population ranges widely, from 11.6% to 63% [1,2]. Common dermatological conditions include acne vulgaris, psoriasis, vitiligo, scabies, contact dermatitis, urticaria, fungal infections, and various autoimmune and inflammatory dermatoses. These disorders are often chronic, recurring, and psychologically distressing, significantly affecting the quality of life and productivity of affected individuals.

Corticosteroids have been a cornerstone in the management of dermatological diseases for decades. Their powerful anti-inflammatory, immunosuppressive, and antiproliferative actions make them highly effective in a wide array of skin conditions. Depending on the nature and severity of the disease, corticosteroids may be administered through topical, oral, intralesional, or parenteral routes. Topical corticosteroids are widely preferred due to their targeted action and relative safety, especially in conditions like eczema, lichen planus, psoriasis, and localized dermatitis. On the other hand, systemic corticosteroids are often indicated in severe, widespread, or rapidly progressive conditions such as autoimmune blistering diseases, erythroderma, and vasculitis [3].

However, the therapeutic benefits of corticosteroids are counterbalanced by their potential for adverse effects, particularly when used inappropriately. The irrational use of high-potency topical steroids-without consideration of appropriate indication, dose, frequency, or duration-can result in a range of local and systemic complications. These include skin atrophy, telangiectasia, striae, perioral dermatitis, acneiform eruptions, and in some cases, suppression of the hypothalamic-pituitary-adrenal (HPA) axis leading to systemic hormonal imbalance [4,5]. Moreover, easy availability of potent corticosteroids over-the-counter, particularly in low- and middle-income countries, has led to widespread misuse and self-medication, further compounding the risk of complications [6,7].

Recent observational studies have revealed that moderate to high-potency corticosteroids such as clobetasol propionate and betamethasone are among the most frequently prescribed formulations in outpatient dermatology clinics [8]. Alarmingly, these are sometimes prescribed even for mild or self-limiting conditions, where lower potency alternatives or non-steroidal therapies would suffice. Furthermore, multiple studies highlight poor documentation practices regarding the prescribed steroid's potency, indication, site of application, and duration of use [9,10]. This lack of detailed prescription information makes monitoring and rational use challenging. Another growing concern is the irrational use of fixed-dose combinations containing corticosteroids, antifungals, and antibiotics-especially in the treatment of dermatophytosis, where such combinations may delay diagnosis, mask symptoms, lead to recalcitrance, and cause steroid-modified infections [6].

MATERIALS AND METHODS

Study Design And Setting

This was a hospital-based, cross-sectional, observational study conducted in the Department of Dermatology

Study Population

The study population consisted of patients attending the dermatology outpatient department who were prescribed corticosteroids during the study period. Both male and female patients across all age groups were eligible.

Inclusion Criteria

- Patients of either sex visiting the dermatology OPD
- Patients prescribed corticosteroids by any route (topical, oral, intralesional, or parenteral)
- Patients willing to provide informed consent

Exclusion Criteria

- Patients not prescribed any corticosteroids
- Patients with incomplete or illegible prescriptions
- Non-consenting individuals or those unable to participate due to critical illness

Sample Size

A total of 100 patients were included in the study based on convenient sampling during the study duration. The sample size was deemed adequate to observe general prescribing trends and conduct descriptive analysis.

Ethical Considerations
Written informed consent was obtained from all participants. Confidentiality of patient data was strictly maintained, and the study adhered to the ethical principles outlined in the Declaration of Helsinki.

Data Collection
Data were collected prospectively using a pre-designed, semi-structured proforma. The proforma captured information on patient demographics (age, sex), clinical diagnosis, and detailed corticosteroid prescription data including generic/brand name, route of administration, potency (for topical formulations), dosage, frequency, duration of use, and whether fixed-dose combinations were prescribed.

Classification Of Corticosteroids
Topical corticosteroids were categorized according to standard dermatological guidelines into four groups based on potency: mild, moderate, potent, and very potent. Systemic corticosteroids were classified based on route and dosing frequency (e.g., oral daily, pulse therapy, intramuscular depot, etc.).

Data Analysis
The collected data were entered into Microsoft Excel 2016 and analyzed using Statistical Package for the Social Sciences (SPSS) version . Descriptive statistics were used to summarize the data and presented as frequencies, percentages, means, and standard deviations. Categorical variables were compared using Chi-square test where applicable. A p-value < 0.05 was considered statistically significant.

RESULTS
Demographic Profile
A total of 100 patients who were prescribed corticosteroids for dermatological conditions were included in the study. Of these, 56 were male and 44 were female, with a male-to-female ratio of 1.27:1. The age of the patients ranged from 5 to 72 years, with a mean age of 34.5 ± 13.2 years. The majority of patients (62%) belonged to the age group of 21–40 years, followed by 20% in the 41–60 years group, 10% below 20 years, and 8% above 60 years.

Clinical Indications For Corticosteroid Use
The most common dermatological condition for which corticosteroids were prescribed was eczema (32%), followed by psoriasis (18%), contact dermatitis (14%), lichen planus (10%), and vitiligo (8%). Other indications included tinea incognito (7%), urticaria (6%), and pemphigus vulgaris and other autoimmune blistering diseases (5%).

Route Of Administration
Topical corticosteroids were the most commonly prescribed (84%), followed by oral (10%), intralesional (4%), and parenteral (2%) routes. Among patients receiving systemic corticosteroids, oral prednisolone was the most frequently used agent.

Potency Of Topical Corticosteroids
Among the 84 topical prescriptions, 40.5% were of high-potency corticosteroids (e.g., clobetasol propionate), 31% were of moderate potency (e.g., mometasone furoate), 21.4% were of low potency (e.g., hydrocortisone), and the remaining 7.1% were very potent preparations. High-potency corticosteroids were mostly prescribed for psoriasis, lichen planus, and tinea incognito, whereas moderate and low-potency agents were commonly used for eczema and contact dermatitis.

Use Of Fixed-Dose Combinations (FDCs)
Fixed-dose combinations (FDCs) of corticosteroids with antifungals and/or antibiotics were prescribed in 22% of patients. Most of these combinations contained clobetasol propionate with miconazole or ofloxacin, commonly seen in cases of tinea and infected dermatitis.

Duration Of Therapy
The prescribed duration of corticosteroid use varied between 5 days and 6 weeks. Short courses (<2 weeks) were prescribed in 46% of cases, while 54% were advised medium- to long-term therapy (>2 weeks). However, documentation of intended duration was absent in 18% of prescriptions.

Prescription Completeness And Generic Use
Only 61% of prescriptions mentioned the potency class of the corticosteroid clearly. Generic names were used in 48% of prescriptions, while the remaining were brand-based. Site of application and frequency of use were documented in 72% and 66% of cases, respectively.

Table 1: Demographic Profile Of Study Population

Variable	Number of Patients (n)	Percentage (%)
Age Group (years)		
< 20	10	10.0
21 – 40	62	62.0
41 – 60	20	20.0
> 60	8	8.0
Gender		
Male	56	56.0
Female	44	44.0

Table 2: Dermatological Diagnoses And Indications For Corticosteroid Use

Dermatological Condition	Number of Patients (n)	Percentage (%)
Eczema	32	32.0
Psoriasis	18	18.0
Contact Dermatitis	14	14.0
Lichen Planus	10	10.0
Vitiligo	8	8.0
Tinea incognito	7	7.0
Urticaria	6	6.0
Autoimmune blistering diseases	5	5.0

Table 3: Prescription Patterns Of Corticosteroids

Parameter	Category	Number of Patients (n)	Percentage (%)
Route of Administration			
Topical		84	84.0
Oral		10	10.0
Intralesional		4	4.0
Parenteral		2	2.0
Topical Corticosteroid Potency			
Very potent		6	7.1
High potent		34	40.5
Moderate		26	31.0
Mild		18	21.4
Use of FDCs	Yes	22	22.0
	No	78	78.0
Duration of Prescribed Therapy	≤ 2 weeks	46	46.0
	> 2 weeks	54	54.0
Generic vs Brand Name Prescribing	Generic	48	48.0
	Brand	52	52.0

DISCUSSION
Table 1: Demographic Profile Of Study Population
In our study, the majority of patients (62%) belonged to the age group of 21–40 years, followed by 20% in the 41–60 years group, 10% below 20 years, and 8% above 60 years. The mean age was 34.5±13.2 years, with a male predominance (56%) and a male-to-female ratio of 1.27:1.

Bylappa et al. (2015) [11] observed that 64% of corticosteroid users were between 21–40 years, with a nearly balanced male-to-female distribution (51% males). Sarvanakumar et al. (2012) [12] also found that 66.7% of patients were in the 21–40 age group. These findings closely mirror ours and reinforce the understanding that the adult population is the predominant user group, likely due to the chronicity and recurrence of dermatoses like eczema and psoriasis in this age bracket.

Greenhalgh (1992) [13] emphasized the importance of such demographic audits, suggesting that recognizing the most affected age groups can help streamline educational and prescribing interventions for dermatologists.

Table 2: Dermatological Diagnoses and Indications for Corticosteroid Use
In our study, the leading indications for corticosteroid prescriptions were eczema (32%), psoriasis (18%), contact dermatitis (14%), lichen planus (10%), vitiligo (8%), tinea incognito (7%), urticaria (6%), and autoimmune blistering diseases (5%).

Bylappa et al. (2015) [11] reported similar results, with eczema (30%)

and psoriasis (20%) being the most common diagnoses. Sarvanakumar et al. (2012) [12] found that eczema and dermatitis together accounted for 38.3% of cases, while psoriasis made up 18.3%. Mirshad et al. [14] observed eczema/dermatitis in 33% and psoriasis in 21% of prescriptions. Divyashanthi and Manivannan (2014)[15] found eczema in 29.4%, followed by psoriasis (19.6%) and contact dermatitis (12.7%).

These consistent trends across Indian tertiary-care settings underscore the predominant role of corticosteroids in managing chronic inflammatory dermatoses. However, the presence of tinea incognito in 7% of our prescriptions raises concern, as these are often steroid-masked fungal infections resulting from inappropriate use of corticosteroid-antifungal combinations—a trend also noted by Narwane et al. (2011) [16], who reported a 6.5% prevalence of steroid-modified fungal infections.

Table 3: Prescription Patterns of Corticosteroids

In our study, 84% of corticosteroids were prescribed topically, followed by oral (10%), intralesional (4%), and parenteral (2%). Regarding topical potency: 40.5% were high-potency, 31% moderate, 21.4% low, and 7.1% very potent steroids. Fixed-dose combinations (FDCs) were prescribed in 22% of patients. The majority of FDCs included clobetasol with miconazole or ofloxacin. Short-course therapy (<2 weeks) was advised in 46% of cases, while 54% were given therapy for >2 weeks. However, only 61% of prescriptions mentioned potency, 72% documented the application site, 66% stated frequency, and only 48% used generic names.

Bylappa et al. (2015) [11] found 78% of prescriptions were topical, with moderate-potency corticosteroids used in 45.9% and high-potency in 30.2%—closely matching our data. They also reported FDCs in 32% of cases, which is higher than our 22%. Sarvanakumar et al. (2012) [12] noted topical steroids in 89.7% of cases, with 37% being high-potency. Mirshad et al. (2013) [14] found clobetasol (super potent) was prescribed in 40% of cases, similar to our 40.5%. Divyashanthi and Manivannan (2014) [15] reported that 41.3% of corticosteroids were prescribed in FDC form, significantly higher than in our study. Narwane et al. [16] highlighted that 58% of prescriptions lacked clarity in application frequency and duration, similar to the 39% and 34% missing frequency and potency information in our study.

Documentation gaps such as omission of application frequency, site, and duration pose a risk for misuse or overuse, potentially leading to complications like skin atrophy and resistance. Walshe (1995) [17] emphasized that regular evaluation through prescription audits helps improve completeness and accuracy, which is essential for safe and effective corticosteroid use.

CONCLUSION

This study highlights the prevalent prescribing patterns of corticosteroids in the dermatology outpatient setting of a tertiary care teaching hospital. The findings reveal that corticosteroids, especially topical forms, remain a mainstay in the management of a wide spectrum of dermatological conditions, with eczema and psoriasis being the most common indications. High- and moderate-potency corticosteroids were frequently prescribed, sometimes even for conditions where lower potency agents might suffice. The substantial use of fixed-dose combinations—particularly those involving potent steroids with antifungals or antibiotics—raises concerns regarding the potential for misuse, especially in cases of fungal infections like tinea incognito.

Documentation gaps were notable, with many prescriptions lacking essential details such as potency, site of application, frequency, and duration of therapy. Additionally, the limited use of generic names and poor recording practices underscore the need for greater adherence to rational prescribing principles. These shortcomings emphasize the importance of regular prescription audits, physician education, and the implementation of standardized guidelines to promote safe and effective corticosteroid use. Strengthening awareness and regulatory oversight can help curb inappropriate practices and mitigate the risk of steroid-related adverse effects in dermatological care.

Limitations Of The Study

The present study, while providing valuable insights into corticosteroid prescribing patterns in a dermatology outpatient setting, is subject to several limitations. Being a single-center study conducted at a tertiary care teaching hospital, the findings may not be generalizable to other healthcare settings with varying patient demographics and prescribing behaviors. The relatively small sample size of 100 patients, selected through convenient sampling, may have introduced selection bias and limited the ability to detect less common prescribing trends or dermatological conditions. Additionally, incomplete documentation in many prescriptions-particularly with respect to steroid potency, site of application, frequency, and duration-restricted the assessment of prescription quality and rationality.

Another important limitation was the lack of follow-up to evaluate treatment outcomes, patient adherence, or occurrence of adverse effects, which are essential to comprehensively assess the safety and effectiveness of corticosteroid therapy. The study also did not incorporate a qualitative component to explore the prescribers' rationale or awareness regarding corticosteroid use, which could have added depth to the findings. Furthermore, the study focused solely on prescription audits and did not consider patient-related factors such as self-medication, health literacy, or knowledge about steroid use. These limitations underscore the need for larger, multicenter studies with robust methodology-including both quantitative and qualitative approaches-to better understand and improve corticosteroid prescribing practices in dermatological care.

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