

Drug Utilization Pattern in Dermatology: A Comprehensive Analysis of Prescription Trends and Patient Management in Dermatological Outpatient Department (OPD)

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Abstract

Background: Drug utilization Understanding the patterns of drug utilization is essential for optimizing patient management in Dermatology Outpatient Departments (OPD). This study presents a comprehensive analysis of prescription trends and patient management practices in Dermatology OPD, with a specific focus on drug utilization patterns.

Methods: A cross-sectional study was conducted in the Dermatology OPD of a tertiary care center in 322 patients. Data were collected through observations and the review of health records. The study investigates prescription trends, drug utilization patterns, and drug formulations used, considering various dermatological conditions.

Results and conclusions: Prescription trends are examined in terms of medication classes, dosage regimens, and treatment durations. This study sheds light on the patterns of drug utilization patterns in Dermatology OPD, offering a foundation for evidence-based decision-making in patient care. Males (59.93%) outnumbered females in health seeking behavior, tinea (10.9%) was the most commonly reported condition and antihistaminics (17.57%) were the most prescribed drugs followed by antifungal drugs (8.5%). Total number of drugs prescribed were 1070. Average number of drugs per prescription is 3.32, percentage of prescriptions with antibiotics and injections were 21.1% and 1.55% respectively. These findings are significant in optimizing prescription practices, enhancing patient outcomes, and guiding future research in dermatological therapeutics.

Keywords: Dermatology, Drug Utilization, Prescription Pattern, Patient Management, Cross-sectional Study, Skin Disorders, Medication Patterns.

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Introduction

Dermatological conditions represent a wide spectrum of disorders that significantly impact the quality of life of affected individuals. Since dermatology is a broad specialty with increasing OPD attendance by patients, understanding the utilization patterns of dermatological drugs is paramount for optimizing patient care and advancing the field. Drug utilization studies are part of a broad specialty known as Pharmacoepidemiology, a science that encompasses pharmacology and epidemiology under its wing for the study of drug use and its effects in large group of populations. In other words this field is concerned about postmarketing surveillance and they can influence clinical decision and policy making.⁽¹⁾ This study embarks on a comprehensive investigation into the drug utilization patterns in Dermatology OPD, with a focus on prescription trends and patient management strategies. By delving into the intricacies of drug prescriptions and patient care, this research seeks to contribute valuable insights that can inform evidence-based practices, refine treatment protocols, and ultimately enhance the effectiveness of dermatological interventions.

A review of existing literature underscores the importance of studying drug utilization patterns in dermatology to improve patient outcomes and healthcare efficiency. Previous research has emphasized the dynamic nature of dermatological drug prescriptions, with considerations for diverse patient populations, varying skin conditions, and evolving therapeutic modalities.⁽²⁾

Several studies have investigated prescription trends in dermatology, shedding light on the prevalence of specific drug classes, dosage regimens, and the impact of factors such as age, gender, and geographic location on prescription patterns. These investigations have contributed to a growing body of knowledge, revealing trends in the utilization of topical and systemic agents for conditions ranging from common dermatoses to more complex autoimmune disorders.

Despite these valuable contributions, there remains a need for studies that specifically delve into drug utilization patterns within the dynamic setting of Dermatology OPD, considering the nuances of

outpatient care. This study addresses this gap by conducting a comprehensive analysis, incorporating a substantial sample size of 322 patients, and providing an in-depth exploration of prescription trends and patient management strategies.

In conclusion, this study builds upon the foundation laid by previous research and extends the current understanding of drug utilization patterns in Dermatology OPD. By doing so, it aspires to contribute meaningful insights that can inform clinical practices, guide future research endeavors, and ultimately improve the delivery of dermatological care.

Materials and Methods

A prospective evaluation of 322 prescriptions of patients attending Dermatology OPD of Sree Uthradom Thirunal Academy of Medical sciences were done and the data were entered into Microsoft Excel. Data analysis were done in SPSS 28. Patients who fulfilled the inclusion criteria were included in the study after taking informed consent. The study was conducted after getting Institutional Ethical Committee clearance (NO: 41/IEC/SUTMS/2023) dated 04/05/2023

Inclusion criteria

Patients attending dermatology OPD irrespective of age who gave consent.

Exclusion criteria

Patients who did not consent to the study

The relevant data was collected from OPD prescriptions details were filled into the predesigned proforma.

Prescriptions were analyzed for following information:

1. Data pertaining diagnosis: Dermatological conditions for which treatment were sought.
2. Data pertaining to drug therapy: Drugs prescribed groups to which the drugs belong, dosage forms, route, frequency and duration of administration.
3. Prescribing indicators

Statistical analysis

SPSS 28 was used for statistical analysis. Results were expressed in terms of percentage.

Results

A total of 322 prescriptions were analysed for patient demographic details, prescribing details and disease incidence.

Table 1: Age distribution among study patients

Sl No	Age category	Frequency	Percentage (%)
1.	<10	43	13.4
2.	10-19	41	12.8
3	20-29	75	23.3
4	30-39	42	13
5	40-49	51	15.8
6	50-59	28	8.7
7	>60	42	13
	Total	322	100

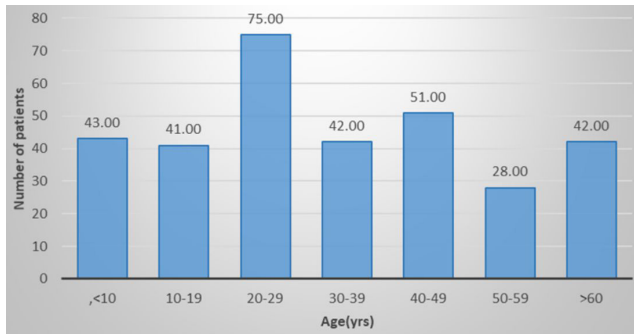


Figure 1: Age distribution among study patients

Table 2: Gender distribution among study patients

Gender	Frequency	Percentage
Female	129	40.06
Male	193	59.93
Total	322	100

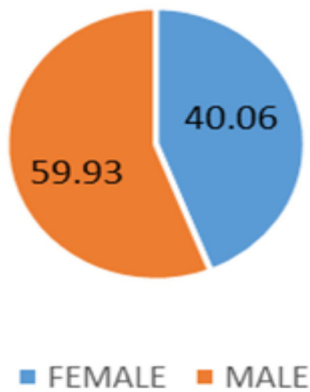


Figure 2: Gender distribution of study patients

The most common conditions observed were Tinea 39 (10.9%) >acne vulgaris 31 (8.6%)>Eczema 27 (7.5%) > psoriasis 15(4.2%). The various patterns of skin conditions observed are given in Table No.3

Table 3: Frequency of various dermatological conditions among patients attending Dermatology OPD

Diagnosis	Frequency	Percentage
Tinea	39	12.11
Acne vulgaris	32	9.94
Eczema	27	8.39
Pityriasis versicolor	22	6.83
Psoriasis	15	4.66
Candidiasis	16	4.97
PMLE#	11	3.42
Urticaria	11	3.42
Seborrheic dermatitis	11	3.42
Miliaria	9	2.80
Pyoderma	8	2.48
Insect bite reaction	7	2.17
Alopecia	7	2.17
Melanosis	6	1.86
Pityriasis alba	6	1.86
Contact dermatitis	6	1.86
Lichen planus	5	1.55
Photodermatitis	4	1.24
Warts	4	1.24
Scabies	4	1.24
Atopy	4	1.24
Herpes simplex	4	1.24
Dermatitis Papulosa Nigra	4	1.24
Keloid	3	0.93
Hypertrophic scar	3	0.93
Vitiligo	3	0.93
Xerosis	3	0.93
Melasma	3	0.93
Acanthosis nigricans	3	0.93
Angioedema	3	0.93
Amyloidosis	2	0.62
Furunculosis	2	0.62
Impetigo	2	0.62
Onycholysis	2	0.62

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Lichen simplex chronicus	1	0.31
Onychomycosis	1	0.31
Pediculosis	1	0.31
Pemphigus vulgaris	1	0.31
Pompholyx	1	0.31
Varicella	1	0.31
Others	25	7.77
Total	322	100

PMLE- Polymorphous Light Eruption.

The commonly prescribed drug classes were H1 antihistaminics 54% (175) followed by antifungal agents 28%(91) as shown in the table . Steroids were prescribed in 4.3% prescriptions. 95.03% prescriptions had topical treatments along with oral drugs ,only 4.96% prescriptions were without topical drugs prescription.

Table 4: Drug classes prescribed and their frequencies.

Drug Groups	No of Drugs Prescribed	% of Total Drugs Prescribed
Antihistaminics	188	17.57
Steroids	14	1.30
Antifungals	91	8.5
Anthelminthics	41	3.83
Antiviral drugs	4	0.37
H2 blockers and PPI	50	4.67
Vitamins	51	4.76
Probiotics	22	2.05
Immunomodulators	5	0.02

Of the 322 prescriptions the different topic formulations commonly prescribed were as shown in the Table 5.

Table 5: Formulations prescribed and their frequencies.

Formulation	Frequency	Percentage
Lotion	79	24
Ointment	34	10.5
Gel	55	17.08
Cream	223	69.2
Soap	29	9

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Shampoo	36	11.18
Sunscreen	20	6.21
Facewash	6	1.86
Nail Lacquer	5	1.55
Powder	2	62.11

Total number of drugs prescribed were 1070 and the average number of drugs per prescription is 3.32. Generic drugs were seen in 3.32% (12) of prescriptions 1.12% of total number of drugs prescribed. Antibiotics were prescribed in 21.11% (68) prescriptions and topical steroids were seen in 45.65% (147) prescriptions. Percentage of prescriptions with injections prescribed are 1.55% and that with drugs prescribed from EDL are 3.72%.

Discussion

The present study provides a comprehensive analysis of prescribing patterns, patient demographics, and prevalent skin conditions in the dermatological outpatient setting. Our findings shed light on several key aspects of dermatological practice, including patient age and gender distribution, common diagnoses, prescription trends, and usage of different topical formulations, the trend of oral and parenteral drug usage.

Patient Demographics:

Analysis of patient demographics revealed a varied distribution across different age groups and genders. The majority of patients fell within the age range of 20-29 years, comprising 23.29% of the total sample, followed by those aged 40-49 years and 30-39 years. This distribution reflects the diverse age spectrum of individuals seeking dermatological care. Furthermore, a higher proportion of male patients (59.7%) compared to female patients (40.3%) attended the OPD, suggesting a gender related variation in treatment seeking behaviour in dermatology practice. This is in line with the study by Farah Asif et al ⁽³⁾ where the percentage of males were 54.16%.

Prevalent Skin Conditions:

Tinea emerged as the most common dermatological condition, accounting for 10.9% of diagnoses, followed by acne vulgaris (8.6%), eczema (7.5%), and psoriasis (4.2%). This is in contrast

to study by Anuj Kumar et al⁽⁴⁾ where the most common diagnosis was acne (17.95%) The prevalence of these conditions aligns with global trends reported in dermatological literature. Additionally, a wide array of less common conditions were identified like pompholyx, keloid, warts, varicella etc, emphasizing the broad spectrum of dermatological diseases encountered in clinical practice.

Prescription Patterns:

H1 antihistamines constituted the most frequently prescribed drug class (54%), indicating their significance in managing allergic and inflammatory skin conditions. Antifungal agents were also prominently prescribed (28%), reflecting the high prevalence of fungal infections such as tinea. This is in line with similar findings by Anuj Kumar et al⁽⁴⁾ where antihistaminics and antifungals formed the majority of drugs prescribed. Steroid usage, while relatively lower (4.3%), underscores their role in managing inflammatory skin conditions cautiously due to associated adverse effects. Notably, the overwhelming majority of prescriptions (95.03%) included topical treatments alongside oral medications, highlighting the importance of multimodal therapy in dermatological management which was in contrast to other studies by Marie et al⁽⁵⁾ and Pathak et al⁽⁴⁾ where oral formulations were majorly prescribed than topical formulations.

Topical Formulations:

Creams were the most commonly prescribed topical formulation (69.2%), followed by lotions (24%) and gels (17.08%) which is similar to a study by Shankpal⁽⁶⁾ et al This preference for creams may be attributed to their ease of application and versatility in addressing various dermatological conditions. Other formulations such as ointments, shampoos, and sunscreens were also prescribed, albeit less frequently, reflecting the diverse therapeutic needs of dermatological patients.

Prescription Characteristics:

The average number of drugs per prescription was 3.32 which was similar to findings by Krishna J et al⁽⁷⁾ indicating the multidrug approach often employed in dermatological management. Other studies showed average number of drugs to be 1.48⁽⁵⁾ which is in accordance with WHO guidelines

(<2). However, the utilization of generic drugs was relatively low (3.32% of prescriptions), suggesting potential opportunities for cost-saving measures and increased access to medications. This was in contrast to a study by R Maini et al⁽⁸⁾ where the generics were 6.98%. Antibiotics were prescribed in approximately one-fifth of cases (21.11%), underscoring their role in managing infectious dermatological conditions. Furthermore, a substantial proportion of prescriptions included topical steroids (45.65%), emphasizing their widespread use in treating inflammatory skin disorders. Percentage of prescriptions done based on EDL were only 3.72% owing to factors like perceived differences in quality and therapeutic effect. other studies demonstrated high number prescriptions based on EDL such as 92.6% by Sumana et al⁽⁹⁾ and 48.84% by Suhaina et al⁽¹⁰⁾

Limitations and Future Directions:

This study has several limitations, including its retrospective nature and single-center design, which may limit the generalizability of findings. Though the sample is drawn from a single OPD, several factors support its broader representativeness which are as follows:

1. Diverse patient demographics: The hospital caters to a large and diverse population drawing patients from different socioeconomic groups, culture and age groups. This diversity helps in capturing a wide range of patient characteristics making it more generalizable.
2. High patient volume : which gives a picture of medication use patterns and health issues
3. Consistency with broader trends: our findings were compared with other national and international multicenter studies and an observations were made on similar health trends and medication usage patterns.
4. We focused on generalizable outcomes rather than outcomes which are unique to our hospital's characteristics.

Additionally, the study did not explore factors influencing prescribing decisions or patient outcomes. Further studies are needed in this area to determine factors determining such prescription trends and their modulation in patient care to bring about maximal therapeutic benefits.

Conclusion

In conclusion, this study offers valuable insights into the demographic profile, prevalent skin conditions, and prescription patterns in a dermatological outpatient setting. It mainly focused on prescribing indicators and adherence to WHO guidelines. The generic prescription, prescription from EDL were low and average number of drugs were high emphasizing the need for rationality in prescription and reducing therapeutic costs. The findings underscore the need for personalised therapeutic approaches, emphasizing the importance of evidence-based practice and holistic patient care in dermatology. Further research is needed to address gaps in knowledge and optimize dermatological management strategies. While it is true

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Conflict of interest: None Declared

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