Original Research Article

Studying drug prescription pattern of dermatology OPD of an Indian tertiary care hospital- a prospective, observational, cross-sectional study

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ABSTRACT

Background: Studying prescription patterns helps prescribers to provide rational and cost-effective medical care. Drugs prescribed for skin disorders by a specialist differ in terms of numbers and the selection of drug class, necessitating periodic prescription audits and drug utilization studies.
Methods: This prospective, cross-sectional, observational study was conducted at the dermatology department OPD of Government Medical College, Aurangabad (Maharashtra, India) from January 2021 to May 2021. Digital records of prescription were collected from the hospital management information system (HMIS).
Results: N=5338 prescriptions were analysed, 40.89% of patients were from the 21-35 years age group. Polytherapy was 62.96% and monotherapy 36.99%. Drugs prescribed by generic names were 18% and brand names were 82%. Topical drugs constituted 71.67% followed by systemic drugs 28.32% of total prescriptions and the average injectables prescribed per encounter was 0.33%. Antifungals were most prescribed followed by steroids. The average number of drugs prescribed was 1.85 per encounter and the percentage of antibiotic prescriptions was 17.70%.
Conclusions: The current study showed that WHO DUS indicators were followed. The results reflect rational prescription of drugs within the available resources.

Keywords: Drug utilization studies, Generic names, Prescription patterns, WHO drug use indicators

INTRODUCTION

One of the main group of diseases that have a serious impact on the patient's quality of life are skin diseases. They are common in India where climate, socio-economic status, religion, and customs are widely varied in different parts of the country.[1] Skin being the largest organ of human body, is also exposed to injuries such as metabolic, genetic, immunological, and extrinsic factors such as environmental, chemical, infectious agents, and so are many systemic diseases diagnosed through skin conditions.[2] All these factors have made skin diseases the fourth leading cause of non-fatal health conditions worldwide, Also, about 2% of all OPD consultations constitute dermatological diseases worldwide.[3]

The main factor that plays a crucial role in providing good health care and in the treatment of serious health conditions is the quality of prescribed medications.[4] The study of prescribing patterns is a part of the medical audit which intends to make medical care rational and cost-effective through monitoring, evaluating, and suggesting modifications if necessary.[5] To enhance the therapeutic efficacy, minimise the adverse effects, feedback to clinicians and optimise the cost of treatment, periodic auditing of prescriptions in the form of drug utilisation studies is essential.[6]

Deficiencies in the rational use of medicines were observed in many studies. Most of the drugs were prescribed by brand names and the number of drugs prescribed from the Hospital formulary was very low.[7]

The present study was planned to understand the prescription pattern in dermatology department of Government Medical College, Aurangabad catering services as a tertiary care hospital for Marathwada region of Maharashtra.

METHODS

This was a prospective, cross-sectional, observational study. The study site was department of dermatology, Government Medical College, Aurangabad, Maharashtra. Informed consent was not applicable as there was no direct involvement of the patients. A blanket consent was obtained from the head of the department of dermatology to use available data for DUS.

Case records of all patients attending dermatology OPD with skin diseases between January 2021-May 2021 were included in the study. Incomplete patient data were excluded from the study. The study was started after the Institutional Ethical committee's (IEC) approval. All case records coming under inclusion criteria were studied. For investigating drug use in health-care facilities the World Health Organization guidelines recommend at least 300 encounters in a cross-sectional survey.

Digital data of prescriptions was obtained from the hospital management information system (HMIS), details of treatment taken by the patient were recorded. The data obtained was analysed in Microsoft Excel and categorical data expressed as percentage.

RESULTS

A total of 5338 prescriptions were analysed. The male: female ratio was 1.2 as depicted in (Figure 1).
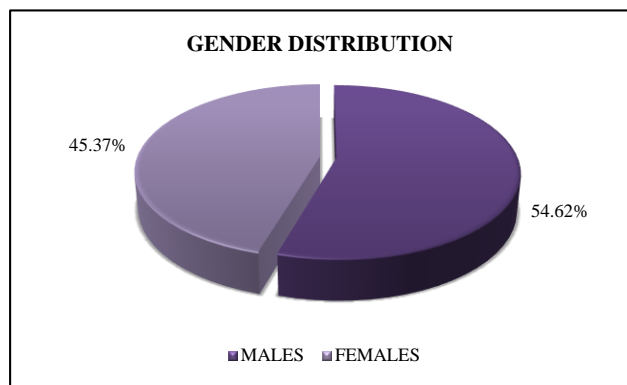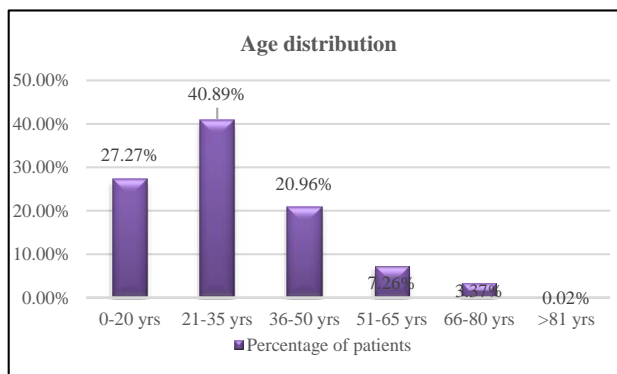

Figure 1: Gender distribution.

Young adult population (21-35 years) was 40.89%, followed by patients less than 20 years (27.27%) (Figure 2).

Among total prescriptions analysed, antifungals were the most prescribed drug class (41.02%) followed by steroids (10.66%) and antibiotics (9.78%). Drugs prescribed as
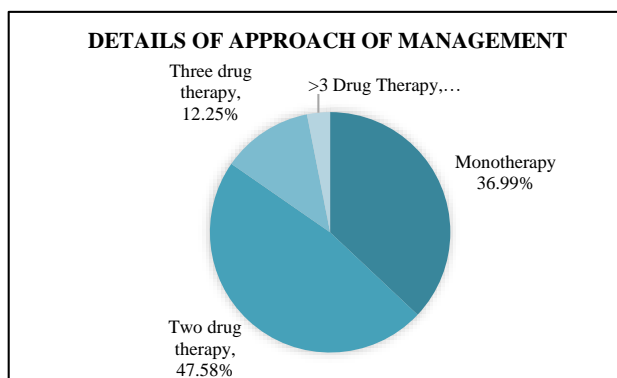
FDC (fixed dose combinations) were 4.44%. As shown in Figure 3.

Figure 2: Age distribution.
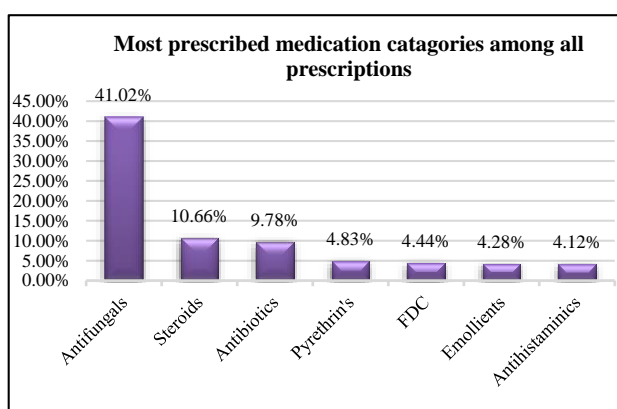
Figure 3: Most prescribed medication categories among all prescriptions.

Figure 4: Details of approach of management.

Approach of management was by polytherapy, in which maximum prescriptions constituted of two drug therapy (47.58%) and 36.99% of patients were prescribed monotherapy, details described in Figure 4.

In the patients managed by monotherapy, antifungals were prescribed more (33.53%), followed by steroids (14.95%), the details of the most common single drug prescriptions are given in Table 1.

Table 1: Details of most common drug classes and drugs prescribed in monotherapy.

Class of drugs	Percentage	Names of drugs	Percentage
Antifungal drugs	33.53	Clotrimazole	31.39
		Bifonazole	21.76
		Miconazole	16.62
		Ketoconazole	8.97
		Itraconazole	7.38
		Luliconazole	7.31
Steroids	14.95	Clobetasone	52.66
		Desonide	22.89
		Fluticasone	10.65
		Mometasone	3.55
		Prednisolone	3.55
Antibiotics	14.15	Fusidic acid	43.76
		Clindamycin	31.30
		Mupirocin	20.12
		Soframycin	1.59
Pyrethrins	14	Pyrethrins	100
Emollients	5.88	Liquid paraffin	67.96
Antihistaminics	3.90	Diphenhydramine	76.47
		Hydroxyzine	22.35
FDC	3.35	Clobetasol + salicylic acid	50.38
		Betamethasone + fusidic acid	27.39

Table 2: Most prescribed medication categories among two drug prescriptions.

Two drug Combination	Drug names		Percentage
Antifungal drug combinations	Itraconazole + bifonazole	20%	60.5
	Itraconazole + clotrimazole	17%	
	Miconazole + itraconazole	17%	
	Miconazole + terbinafine	6.5%	
Anti-histaminic + Antifungals	Hydroxyzine + miconazole	4%	
Antibiotics + Retinoids	Clindamycin + 0.1% (adapalene)	3%	

Antifungal drug combinations were prescribed to 60.5% of patients receiving two drug therapy as shown in Table 2.
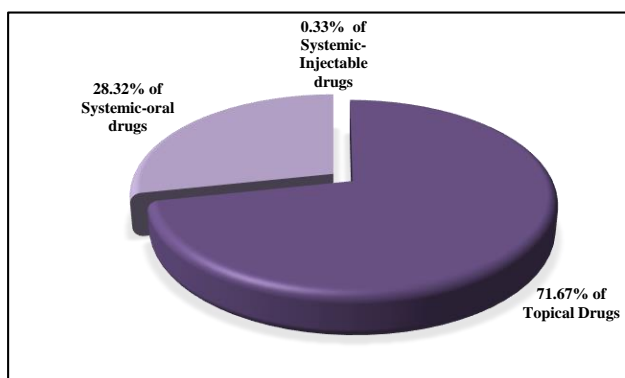
Figure 5: Routes of drug administration.

Prescriptions with brand names were 82% and generic were 18%. Topical drugs were prescribed in 71.67% of total prescriptions (Figure 5).

Table 3: WHO-DUS Prescribing indicators.

Prescribing indicators	Counts and percentage
Total number of prescriptions analysed	5338
Total number of drugs prescribed	9907
The average number of drugs per encounter	1.85
Drugs prescribed by generic name	18%
Drugs prescribed from the essential drugs list (India)	22.5%
Drugs prescribed from the essential drugs list (WHO)	15.83%
Total number of prescriptions with an antibiotic	17.70%
Total number of prescriptions with an injection	0.33%

WHO-DUS prescribing indicators were analysed, detailed in Table 3.

Table 4: Pattern of skin diseases.

Diseases	Percentage
Tinea group	10.97
Acne	7.96
Scabies	1.72
Eczema	1.66
Psoriasis	1.46
Melasma	1.46
Ulcer	1.19
Vitiligo	0.84
Xerosis	0.80
Alopecia	0.76
Dermatitis	0.76
Urticaria	0.63
Leprosy	0.61
Furuncle	0.50
Keloid	0.50
Folliculitis	0.37
Herpes group	0.35
Wart	0.26
Miliaria	0.16
Striae	0.13
Impetigo	0.09
Pityriasis	0.05

Pattern of skin diseases revealed the commonest condition as Tinea group of infections followed by others as shown in Table 4.

DISCUSSION

Practices in the treatment can be reflected in the prescription given by a doctor.[8] Major determinants of a prescription are availability, affordability, quality, rationality, and completeness. A study that includes these components is drug utilization study. It also provides an insight into the nature of health care at that facility.[6] Of the 5338 prescriptions examined, the number of males (54.62%) were more than the number of females (45.37%). Similar data was noted in the study conducted by Gupta et al and Vakade et al.[3,9]

Most patients (40.89%) comprised young adult populations of the age group 21-35 years, followed by patients less than 20 years (27.27%). In a study by Pathak et al, more than 50% of patients were in the age group of 21 to 40 years which was like the results noted in our study.[6] While analysing drug use pattern, in a study by Gupta et al most common classes of drugs prescribed were antifungals, antibiotics, anti-histaminics and corticosteroids.[9] Contrasting results were noted in our study where the most common drug class prescribed was antifungals, followed by steroids and antibiotics. Different results were found in study by Indrani et al, here the most common drug class prescribed was anti-histaminics, anti-fungals and steroids.[5] The variations in results could be attributed to differences in the pattern of skin diseases in India as it is influenced by the developing economy, socio-economic conditions, varied climate, industrialization, access to primary health care, and different religious rituals and cultural factors.

Maximum number of patients received combination therapy (62.96%) followed by monotherapy (36.99%). A similar pattern was noticed in the study of Vakade et al, whereas, polypharmacy (≥4 drugs in a prescription) were about 30.76% in a study by Gupta et al whereas in our study 3.09% patients (receiving ≥4 drugs per prescription).[3,9] 82% of drug prescriptions were by brand names and 18% were generic. These are same as results found in the study by Narwane, wherein 16.6% of drugs were prescribed by generic name and the remaining 83.4% were prescribed in brand names.[7] In the study of Vakade et al drugs prescribed by generic names were <1%.[3] Aimee et al reported 54% prescriptions with brand names and 46% generic names.[10] The preferred route of administration was found to be through topical drugs which were 71.67% of total prescriptions followed by systemic oral route and 0.33% injectable form. Amiee et al reported that oral tablets were most prescribed followed by topical agents.[10] Similar results were found in studies done by Patil et al. Topical agents have less systemic side effects and dermal/local absorption of the drug, because of which they might be preferred more.[11] The average number of drugs per encounter was 1.85, which was less than the WHO standard (<2).[12] In line with our study results, a study done by Narwane et al also showed similar results i.e., 2.7/prescription.[7] A study done by Pathak et al had an average number of drugs per prescription of 5.13 which was very high.[6] In our study, we also noted a pattern in skin diseases, in which the Tinea group infections accounted for 10.97% of total patients diagnosed followed by acne at 07.96%. A similar trend was observed in the study by Gupta where most patients accounted for Tinea infection 15.25% and acne 12.36%.[9]

Strength of the study

We have analysed prescriptions through HMIS digital data records of the institute. The standards of entries in the modules of HMIS made us available complete details of prescriptions.

Limitations

There are some limitations to our study. We analysed the data of 5 months. Covering all seasonal skin diseases is further required.

CONCLUSION

The current study showed that WHO-DUS indicators were followed. The study results reflect rational prescription of drugs within the available resources.

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