

3-1-2020

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Recommended Citation

Herakal, Kallappa; Sabbu, Rahul; Pavani, Gubba; Hiremath, Doddayya; and Mahendraker, Ashok G. (2020) "Study on Drug Prescribing Pattern in Dermatology Outpatient Department in a Tertiary Care Teaching Hospital," *Manipal Journal of Pharmaceutical Sciences*: Vol. 6 : Iss. 1 , Article 2. Available at: <https://impressions.manipal.edu/mjps/vol6/iss1/2>

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Study on Drug Prescribing Pattern in Dermatology Outpatient Department in a Tertiary Care Teaching Hospital

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Abstract

Irrational usage of medications is becoming a global problem. India majorly faces the concern for the irrational manufacturing, prescriptions and usage of medicines. Skin diseases or dermatology related issues are one of the major contributors to the disease burden. The ultimate goal in dermatological therapy is achieved by prescribing the safest and minimal number of medicines. The objective of the study was to assess the drug prescribing pattern in dermatology outpatient department (OPD) using WHO drug use indicators, to determine patterns of skin diseases and to describe current treatment practices. A cross sectional prospective study was carried out in the dermatology OPD for six months from March 2018 to August 2018. Prescriptions from patients were collected directly by taking images. About five hundred encounters were reviewed. The results revealed that male patients were more: 261 patients (52%). Most patients belonged to the age category of 20-29 years (139 patients) and 10-19 years (94 patients). A total of 1706 medications were prescribed. The average number of medications prescribed were 3.41/prescription. The number of generic drugs prescribed was comparably lower than branded; a total of 29.01% of prescriptions were prescribed with antibiotics. The health facility indicators were assessed by confirming key drug availability. On the whole, 26.9% drugs were prescribed from WHO EDL (essential drug list). It was concluded that fungal infections were the highest presentation and antihistamines were the most commonly prescribed drugs.

Key words: Drug use indicators, EDL, Prescribing pattern, Skin diseases, WHO

Introduction

Skin is the part of integumentary system and is the largest organ of human body. It is exposed to injury by extrinsic factors such as chemical and environmental factors, including infectious agents; and intrinsic factors like genetic, immunological and metabolic factors.¹ Skin diseases in developing

countries, like India, have a serious impact on people's quality of life.²

Dermatology is a discipline where the therapy can be directly administered to the target site.³ Skin diseases get transmitted usually in people who are living under unhygienic and low socio-economic conditions.⁴ The skin disease pattern differs from countries and across different parts within a country.⁵

Rational prescribing is the most desired component in the drug supply-use chain that is required to ensure the rational use of medications and a cost-effective medical care. However, irrational prescribing has been reported as a global problem.⁶

Millions of children and adults suffer and die every year in poorer regions of Asia and Africa from preventable or treatable diseases with inexpensive essential drugs.⁹ India faces problems such as prescribing irrational drug combinations, excessive

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Date of Submission: 01-11-2019, Date of Revision: 04-01-2020
Date of Acceptance: 20-01-2020

How to cite this article: Herakal K, Sabbu R, Pavani G, Hiremath D, Mahendrakar A G. Study on Drug Prescribing Pattern in Dermatology Outpatient Department in a Tertiary Care Teaching Hospital. *MJPS* 2020; 6(1): 3-7.

usage of multivitamins, and unnecessary use of anti-biotics. Incidence of infectious disease in rural communities of India is significantly high because of being socially backward.⁴

Polypharmacy is the most common irrational practice⁷ and irrational drug therapy remains a global phenomenon.⁸ Irrational usage is caused due to lack of knowledge, unrestricted medicines available without prescription, inappropriate promotion and profit motives to sell medicines.⁹ The irrational prescribing in dermatological practice thus can adversely affect the life in majority of patient population.⁶ The consequences of irrational use of medications include ineffective treatment, Adverse Drug Reactions (ADR) and economic burden on the patient and family.⁵ Prescription writing is a scientific art to convey a message from the prescriber to the patient. Use of essential drugs prescribed by generic names is being accentuated by the WHO.¹⁰ These kinds of analysis help to increase the health system standards and help to identify of drug use related issues viz. drug-drug interaction, polypharmacy and ADR.¹¹

This study aims to assess the drug prescribing patterns by obtaining information on demographic characteristics of the patients in dermatology OPD in a tertiary care hospital. Also, the patterns of prescribing practices were described using the World Health Organization/ International Network of Rational Use of Drugs (WHO/ INRUD) drug-use core indicators like the following as a part of the study:

- Average number of drugs per encounter
- Percentage of drugs prescribed by generic name
- Percentage of antibiotics prescribed
- Percentage of drugs prescribed from WHO EDL
- Percentage of fixed drug combination from WHO EDL⁹

Rational Drug Use (RDU) is defined as “use of an appropriate, efficacious, safe and cost-effective drug given for the right indications in the right dose and formulation, at right time intervals and for the right duration of time”. RDU can be promoted by wide

range of activities like adaptation of the essential drug concept, development of evidence based clinical guidelines, continuous training of health professionals, consumer education, unbiased drug information and stringent regulatory policies.¹¹

The term rational medicine use includes the following:

- Suitable indications based on sound medicinal considerations.
- Right medications considering safety, efficacy and cost effective.
- Appropriate dose, route of administration and dosage regimen.
- Minimum adverse reactions by ensuring no contra-indications
- Proper dispensing
- Patient adherence to therapeutic dosage regimen

Irrational use of medicines is a problem globally which soon needs to be addressed. As per the WHO estimation, more than 50% of medicines are either prescribed/dispensed/sold in-correctly, and the rest 50% of medicines are incorrectly consumed by patients. The over, under or misuse of medications may cause serious health conditions and also lead to wastage of resources.¹² The present study aims to evaluate the prescription pattern of medications in dermatology OPD with the help of the WHO drug usage indicators, to determine patterns of skin diseases and to describe current treatment practices.

Materials and Methods

A prospective observational study was performed in dermatology OPD for a duration of six months, from March 2018 to August 2018, after the approval from the Institutional Ethics Committee of Navodaya Medical College Hospital and Research Centre, Raichur. A total of 500 patients of different age groups visiting the dermatology OPD were a part of this study. A well designed patient data entry form was developed and used for the study. The following information like patient demographic details (name, age, gender, reason for hospitalization, duration of illness, smoking history etc.) and the WHO indicators were included.

Results

Out of the 500 patients enrolled in the study, 261 (52%) were male and 239 (48%) were female. The patients from 20-29 years age group were higher in number followed by 10-19 years, followed by 30-39 years, <10 years, 40-49 years, >60 years and 50-59 years as shown in the Fig 1.

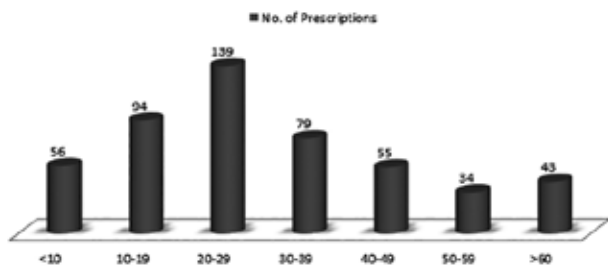


Figure 1: Prescribing pattern according to the age group (N=500)

Total prescribed drugs among 500 prescriptions were 1706. Average number of drugs per encounter was 3.412 and generic drugs prescribed were 13.20%. Antibiotic prescribed was 29.01%, drugs prescribed from the WHO EDL was 26.90% as shown in Table 1.

Table 1: WHO prescribing indicators

| Sl No | Parameters | Out Patient value | Ideal value |
|-------|-----------------------------------|-------------------|-------------|
| 1 | Average number of drugs/encounter | 3.412 | <2 |
| 2 | Generic drugs prescribed | 13.2% | 100% |
| 3 | Antibiotic prescribed | 29.01% | <30% |
| 4 | Injection prescribed | 0.41% | <10% |
| 5 | Drugs prescribed from the WHO EDL | 26.9% | 100% |

In this study of 500 prescriptions, it was observed that 85 patients were diagnosed with fungal skin infections as shown in the Fig 2.

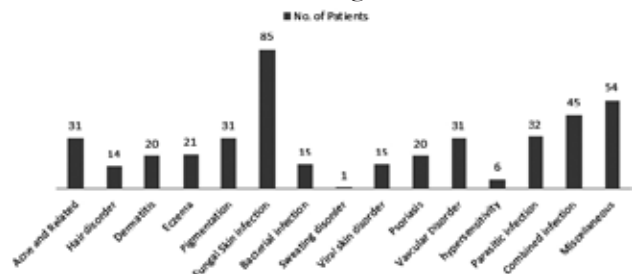


Figure 2: Disease distribution among the study group (N=500)

Among 1706 drugs prescribed, Luliconazole (73) was the highly prescribed topical antifungal agent

and the highly prescribed oral antifungal agent was Itraconazole (72), as shown in the Fig 3.

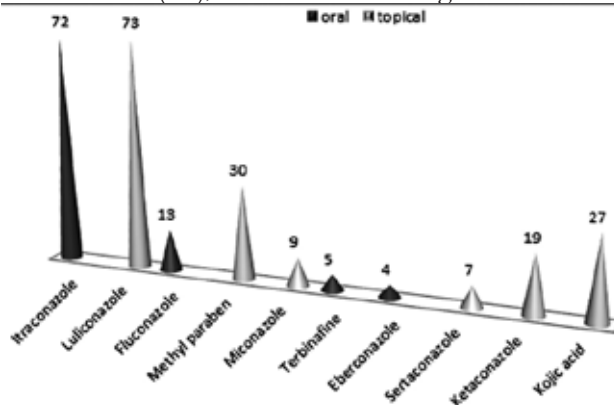


Figure 3: Antifungal and combination prescribed (N=500)

Among 1706 drugs prescribed, fusidic acid was the highly prescribed topical antibiotic (66) and azithromycin (41) was the highly prescribed oral antibiotics as shown in the Fig. 4.

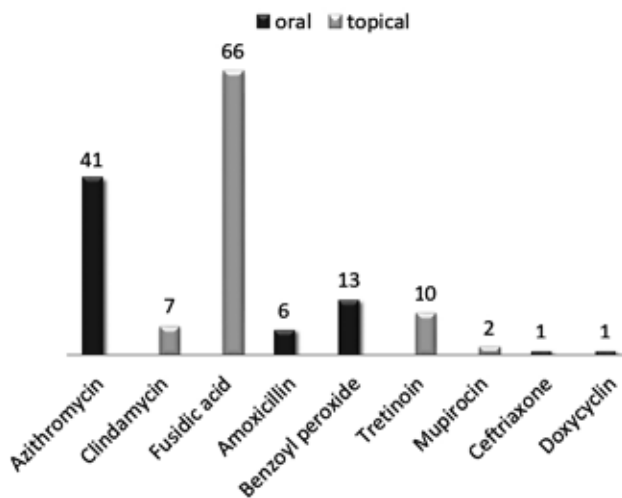


Figure 4: Antibiotic and combination prescribed (N=500)

Discussion

From the study of 500 prescriptions during the duration of six months in a tertiary care teaching hospital, it was found that the most commonly affected population with skin diseases is male patients (52%). This is because males are more exposed to the causative factors of skin diseases when compared to female patients. The results were in concordance with the study done by Saleem et. al. ³ Skin diseases were found to occur mostly in the age group between 20-29 years, when compared to people of other age groups. In addition to this, the most prescribed drug classification was found to be antihistamines. These

results were similar to the study done by Saleem et. al.³, as majorly dermatological problem such as fungal, scabies, eczema were associated with itching.

An average number of drugs/medications per encounter is a main parameter for educational intervention in prescribing practices. The number of drugs varied from 1 to 8 with an average of 3.412 drugs/encounter which is higher than 2 (WHO recommended limit).¹³ It was similar to the study done by Nazima et. al.¹⁵ This study showed the incidence of polypharmacy. It revealed that the quantum of drugs prescribed from the WHO EDL was only 26.9%. It is less in comparison to the study done by Upadhyay et. al.¹⁴ Judicious use of antibiotics is important to prevent drug resistant bacterias. The percentage of prescription with an antibiotic prescribed was 29.01% which is correct with those specified by the WHO, it was less when compared to the study done by Bharti et. al.¹⁶

An immediate need of the hour is also to reduce usage of injections to prevent infections like HIV and other blood borne pathogens. In the present study, the magnitude of injection used was observed to be 0.41%, which is within the WHO standards.¹³ Although the hospital where the study was conducted had no EDL for reference, it was observed that 26.9% of the drugs prescribed were from EDL.

Conclusion

Irrational prescribing could be overcome by following ideal prescription writing. In the present study, the average number of drug/prescription was considerably higher than the WHO recommended prescribing indicators. Generic drugs prescribed were very low and suggests the considerable increase in generic drug prescribing which has benefit of cost effectiveness. The percentage of injection use was low. Most drugs prescribed did not meet the WHO EDL. The results, thus, indicate that prescribing pattern of medications in the out-patient departments of hospitals should be considerably improved. This study also encourages similar studies to be performed in other healthcare facilities to promote rational drug usage and also a routine audit of prescriptions could help to improve use of drugs thus improving health care quality.

Conflict of Interest

No conflict of interest.

Acknowledgements

We express our sincere thanks to Shri S R Reddy, Chairman, Navodaya Educational Trust, Dr Ashok Mahendrakar, Medical Superintendent, NMCH & RC, Raichur and Dr H Doddayya, Principal, NET Pharmacy College, Raichur and HOD of Dermatology ward, NMCH & RC for supporting our research work.

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