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Drug Utilization Evaluation in Dermatology Department: A Study in the Ambulatory Care Settings

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ABSTRACT

The main aim of the study is to evaluate the prescribing pattern of drugs prescribed in the ambulatory patients attending the dermatology department. This was a prospective observational study conducted for a period of 6 months. Patients who were receiving treatment in the dermatological outpatient department and willing to participate were included in the study and patients in the inpatient dermatology department and also with other co morbid conditions were excluded from the study. A total of 306 cases were collected and among them, about 112 (36.6%) were males and 194 (63.4%) were females. During the study period, majority of the patients were in the age group of 21-30 years (41.2%). The most commonly prescribed classes were found to be Antibacterial drugs 312 (22.1%) followed by Antifungal drugs 258 (18.3%) and Anti-histamines 206 (14.6%). Among the antibacterial, Antibacterial soaps (35.3%) were more commonly prescribed followed by the antibiotics Mupirocin (12.8%) and Clindamycin (11.9%). In case of Antifungals, Ketoconazole (25.2%) was most commonly prescribed drug followed by Fluconazole (14%) and Clotrimazole (14%). Among the Antihistamine drug class, Levocetrizine (76.2%) was most commonly prescribed followed by Hydroxyzine (12.2%). The drug Prednisolone (26.4%) was most commonly prescribed among Corticosteroids, followed by Mometasone furoate (23.6%) and Hydroquinone (13.1%). It is the responsibility of the clinical pharmacist to perform the drug utilization studies in order to know the drug prescribing patterns and also to know the prevalent disease conditions at a particular point of time. Clinical pharmacist should create awareness regarding the personal and community hygiene which would result in the prevention of dermatological diseases.

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INTRODUCTION

Dermatology is the branch of medicine which deals with the diseases pertaining to skin, nails and hair (Zhen *et al.*, 2014). Skin diseases are the most common disease that burden globally. These are usually chronic and require a life time treatment. In the clinical literature about 3000 varieties of skin diseases were identified while most of them are rarely found (Gupta *et al.*, 2016). They vary from one country to another country and also in different regions within the country. Altogether the skin

disease stands in the 18^{th} position causing health burden worldwide. In 2010 it was the 4^{th} leading cause of nonfatal health burden (Kumar *et al.*, 2016). Various studies stated that the prevalence of skin diseases as 11.16% to 63% in general population. Patients under the age group of second and third decades show higher prevalence with 3.7% to 51.17% (Gupta *et al.*, 2016). The significance of modern therapeutic agents for diagnostic and curative purpose and their contribution to the healthcare sector requires no prominence. But illegitimate use of drugs represents a potential threat to the patients with unnecessary expenses. This prioritizes the review of drug use patterns to ensure safe and effective use of drugs. The international agencies like World Health Organization (WHO) and International Network of Rational Use of Drugs (INRUD) has evolved to promote the appropriate use of drugs by using standard drug use indicators.

The drug use indicators developed by WHO serves the purpose of defining an objective measures in distinguishing the drug use pattern in a country, region (or) individual health facility. These measures in turn allow the health planners, managers and researchers to perform the comparisons of drug use pattern in different areas at different times. The impact of interventions obtained during drug use can be measured using indicators which act as simple supervisory tools. Moreover these indicators help to perceive problems in performance by individual providers in healthcare sector (Maini *et al.*, 2002). Hence in this study we made an attempt to study the prescribing pattern of drugs in the ambulatory patients attending the dermatology department.

MATERIALS AND METHODS

This was a prospective observational study conducted for a period of 6 months at Lalitha Endocare & Skincare Hospital, Rajahmundry. After obtaining the approval from IEC (GSPRJY-IEC/Phar.D./2017/06), all the necessary and relevant information was collected on a previously designed patient data collection proforma. Patients who were receiving treatment in the dermatological outpatient department and willing to participate were included in the study and patients in the inpatient dermatology department and also with other co morbid conditions were excluded from the study.

RESULTS AND DISCUSSION

Prescribing pattern studies are useful to evaluate and suggest the modifications to the prescriber.

Table 1: Categorization of drug classes involved in the study

Drug Class	Frequency (%)
Antibacterial	312 (22.2)
Antifungal	258 (18.4)
Anti-histamine	206 (14.6)
Corticosteroids	144 (10.2)
Cosmetics	92 (6.5)
Emollients	40 (2.8)
Keratolytics	18 (1.3)
Anti-inflammatory	6 (0.4)
Antiviral	4 (0.3)
Others	327(23.3)
Total	1407 (100)

Table 2: Drug utilization pattern of Antibacterials involved in the study

Drug Name	Frequency (%)
Anti-bacterial soaps	110 (35.3)
Mupirocin	40 (12.8)
Amoxicillin + clavulanic acid	27 (8.6)
Azithromycin	25 (8.1)
Benzoyl peroxide	20 (6.4)
Cefalexin	14 (4.5)
Clindamycin	37 (11.9)
Doxycycline	27 (8.6)
Others	12 (3.8)
Total	312 (100)

Such analysis not only improves the standards of medical treatment at all levels in the health system, but also supports in the identification of drug use related problems. The main aim of our study is to provide the prescribing pattern in the ambulatory patients attending the dermatology department. A total of 306 cases were collected and among them, about 112 (36.6%) were found to be males and about 194 (63.4%) were found to be females. In this study, females with dermatological diseases were more predominant than males and this result was similar to the studies carried out by Kumar *et al.* (2016); Sarkar *et al.* (2003); Sajith and Lokhande (2014).

Figure 1 represents the age wise distribution of patients involved in the study. During the study period, majority of the patients were found in the age group 21-30 years (41.2%) and this result was similar to the studies done by Saleem *et al.* (2012); Tegegne and Bialfew (2018); Sajith and Lokhande

Table 3: Drug utilization pattern of Antifungals involved in the study

Drug Name	Frequency (%)
Amorolfine	10 (3.8)
Bifonazole	1 (0.4)
Cetaphic dam lotion	5 (1.9)
Cicloperox	2 (0.8)
Cicloproxamine	1 (0.4)
Climbazole	4 (1.6)
Clotrimazole	36 (14)
Eberconazole	1 (0.4)
Fluconazole	36 (14)
Griseofulvin	1 (0.4)
Itraconazole	19 (7.4)
Ketoconazole	65 (25.2)
Luliconazole	21 (8.1)
Miconazole	4 (1.6)
Minoconazole	1 (0.4)
Prictone olamine	1 (0.4)
Seratoconazole	28 (10.7)
Symcalmin	1 (0.4)
Terbinafine	21 (8.1)
Total	258 (100)

(2014).

The mean age of the patients who were observed with the dermatological diseases was observed to be 28.42 (+/- 13.72) years. The average number of drugs per prescription was found to be 4.6 drugs. Most commonly observed diagnosis in our study was found to be Tinea followed by Acne.

Table 4: Drug utilization pattern of Antihistamines involved in the study

Drug Name	Frequency (%)
Bepotastine	4 (1.9)
Desloratadine	13 (6.3)
Ebastine	4 (1.9)
Fexofinadine HCl	3 (1.5)
Hydroxyzine	25 (12.2)
Levocetrizine	157 (76.2)
Total	206 (100)

Table 1 represents the categorization of drug classes involved in the study. Among the 306 prescriptions, a total of 1407 drugs were found with 38 different classes. Among them, the most commonly prescribed classes were found to be Antibacterial drugs 312 (22.1%) followed by Antifungal drugs 258 (18.3%) and Anti-histamines 206 (14.6%). Among the 1407 drugs prescribed in the prescription, 645 (45.8%) were prescribed orally and 762 (54.2%) were prescribed topically. Thereby in this study, topical agents were more frequently prescribed when compared to oral agents.

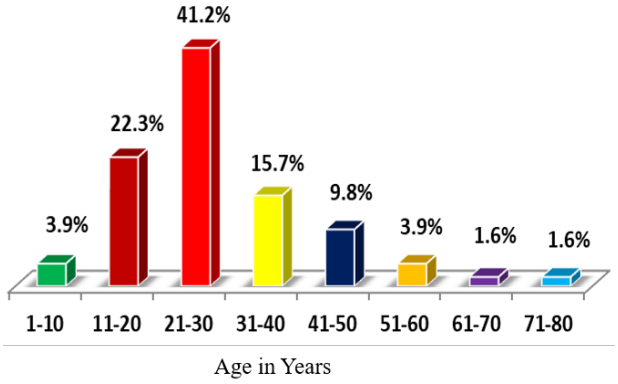

Figure 1: Age wise categorization of cases involved in the study

Table 2 represents the list of drugs which comes under the class of Antibacterials. Antibacterial soaps (35.3%) were more commonly prescribed followed by the antibiotics Mupirocin (12.8%) and Clindamycin (11.9%). Antibiotics were the most commonly prescribed drugs in the dermatology department in the present study. According to the pharmaceutical industry monitoring data, about 5% of the prescriptions were prescribed with antibi-

Table 5: Drug utilization pattern of Corticosteroids involved in the study

Drug Name	Frequency (%)
Avobenzone	3 (2.1)
Betamethasone	1 (0.7)
Clobetasol	7 (4.8)
Deflazocort	6 (4.2)
Desonide	3 (2.1)
Finasteride	2 (1.4)
Fluocinole	5 (3.5)
Halobetasol propionate	16 (11.1)
Hydrocortisone	5 (3.5)
Hydroquinone	19 (13.1)
Lapixyl	1 (0.7)
Mequinal	1 (0.7)
Mometasone furoate	34 (23.6)
Prednisolone	38(26.4)
Niacinamide	3 (2.1)
Total	144 (100)

otics by the United States dermatologists which may contribute to antibiotic resistance (Jesitus, 2013; Jaiswal *et al.*, 2017).

Table 3 represents the list of drugs which comes under the class of Antifungals. Among the Antifungal drugs, Ketoconazole (25.2%) was most commonly prescribed drug followed by Fluconazole (14%) and Clotrimazole (14%). Our results were similar to studies done by Saleem *et al.* (2012); Tegegne and Bialfew (2018).

Table 4 represents the list of drugs which comes under the class of Anti-histamines. Among the Antihistamine drug class, Levocetrizine (76.2%) was most commonly prescribed followed by Hydroxyzine (12.2%) and this result was similar to the studies done by Kumar *et al.* (2016); Gupta *et al.* (2016); Saleem *et al.* (2012).

Table 5 represents the list of drugs which comes under the class of Corticosteroids. The drug Prednisolone (26.4%) was found to be the most commonly prescribed drug among Corticosteroids, followed by Mometasone furoate (23.6%) and Hydroquinone (13.1%).

CONCLUSIONS

In our study, females were found to be more pre dominant with dermatological diseases when compared to males. The most commonly prescribed drug classes were found to Antibacterials followed by Antifungals and Antihistamines. The most commonly prescribed drug in our study was found to be Levocetrizine. The most frequently prescribed route of administration was found to be topical compared to oral. Periodic evaluation of the prescribing pattern of the drugs can improve the quality of prescriptions. It is the responsibility of the clinical pharmacist to perform the drug utilization studies in order to know the drug prescribing patterns and also to know the prevalent disease conditions at a particular point of time. Clinical pharmacist should create awareness regarding the personal and community hygiene which would result in the prevention of dermatological diseases.

Conflict of Interest

None.

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REFERENCES

Gupta, S., Khan, W., Krishna, A. 2016. Pattern of skin diseases and common drugs prescribed in dermatology OPD of an Indian tertiary care hospital. *International Journal of Basic & Clinical Pharmacology*, 6(1):203–203.

Jaiswal, M., Chakrawarty, R., Sanat, S., Devender, S. 2017. Study on prescription pattern of antibiotics in Dermatology OPD of a tertiary care teaching hospital of tribal region of India. *International Journal of Biomedical Research*, 8(08):491–496.

Jesitus, J. 2013. Dermatologists contribute to overuse of antibiotics. *Derm Times*.

Kumar, A. K. P. M., Mohan, L., Dikshit, H. 2016. Study of Drug Utilization Pattern for Skin Diseases in Dermatology OPD of an Indian Tertiary Care Hospital - A Prescription Survey. *Journal of Clinical & Diagnostic Research*, 10:1–05.

Maini, R., Verma, K. K., Biswas, N. R., Agrawal, S. S. 2002. Drug utilization study in dermatology in a tertiary hospital in Delhi. *Indian Journal of Physiology and Pharmacology*, 46(1):107–110.

Sajith, M., Lokhande, S. P. 2014. Prevalance of Various Skin Disorders and Prescribing Pattern of Antihistamines in Tertiary Care HospitaL. *Pune. International Journal of Pharma Sciences and Research*, 5:73–77.

Saleem, M., Dilip, C., Nishad, V. 2012. Assessment of drug prescribing patterns in dermatology outpatient department in a tertiary care hospital. *Indian Journal of Pharmacy Practice*, 4(3):62–68.

Sarkar, C., Das, B., Sripathi, H. 2003. Drug prescribing pattern in dermatology in a Teaching Hospital in Western Nepal. *Journal of Nepal Medical Association*, 41(141):241–6.

Tegegne, A., Bialfew, F. 2018. Prescribing Pattern for Skin Diseases in Dermatology OPD at Borumeda Hospital, North East, Ethiopia. *Pain Studies and Treatment*, 06(01):1–8.

Zhen, N. Y., Julian, C., V 2014. Dermatology: Handbook for medical students & junior doctor. *British Association of Dermatologists*.