

Prescribing Pattern for Skin Diseases in Dermatology OPD of in Boru Meda Hospital, North East, Ethiopia

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ABSTRACT

Introduction: Skin diseases are the major contributors of disease burden in society. The ultimate goal in dermatological therapy is to use the safest and least number of drugs in order to obtain the best possible effect in the shortest period at reasonable cost. The problem gets compounded with the inappropriate and irrational use of medicines. Therefore, periodic prescription audit in the form of prescribing patterns is away to improve irrational prescription. The objective of this study to assess the prescription patterns of dermatological agents in Boru Meda hospital. **Methods:** Hospital based retrospective cross-sectional study in which prescribing patterns of dermatological agents are assessed. A total of 385 samples of patient record prescription from November/1/2016 to December/30/2016, and the sample were selected by systematic random sampling technique. Sample prescriptions were reviewed using structural data collection format. The Collected data was analyzed by using SPSS version 20. **Results:** Regarding sex and age of patients, the maximum numbers were male between the age group of 21-30 years (25.52%) and in female 21-30 years (32.64%). Topical steroids were the most commonly prescribed drugs (25.3%). The prevalence of atopic dermatitis was higher (26.3%, 20.8%) in both male

and female respectively followed by scabies in male with 12.2% and Acne vulgaris (12.9%) in female. Number of drugs per prescription was higher (2.46) than WHO standard (<2). **Conclusion:** The current study reveals that topical corticosteroids were commonly prescribed drugs in the dermatology unit and the prescribing practice imitates incidence of polypharmacy.

Key words: Boru Meda hospital; dermatological agents; prescription patterns

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INTRODUCTION

Skin disease refers to disorders exclusively of the superficial layers of the skin. The commonest skin disorders seen in developing countries are psoriasis and scabies, but they have not been regarded as a significant problem that could benefit from public health measures. Most skin diseases are chronic and require lifetime treatment.^[1] Improved quality of life by enhancing standards of medical treatment at all levels of the health care delivery system. Setting standards and assessing the quality of care through performance review should become part of everyday clinical practice.^[2]

Prescribing patterns studies are useful to monitor evaluate and suggest modifications in prescribers prescribing habits so as to make medical care rational and cost effective. 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 such as, drug-drug interaction, poly-pharmacy and adverse drug reaction.^[3,4] Irrational prescribing has a serious impact on health and economy, resulting in wastage of resource. The patterns of drug use in a hospital setting need to be monitored intermittently in order to analyze their rationality and increase the therapeutic benefits and reduce adverse effect.^[5]

METHODS

Study area and period

Boru Meda Hospital (BMH) is found in Eastern Amhara South Wollo zone, Dessie town, which is found about 411 km away from Addis Ababa, the capital city of Ethiopia. It was established in 1947 EC through the support of missionary organization that was primary focused on dermatology and ophthalmic services. It has a total of 80 beds among these 30 beds is in dermatological ward. The study was conducted from November 01/2016–December 30/2016.

Study design and study population

A retrospective institutional based quantitative cross sectional study was conducted by reviewing prescriptions and the sample were selected by systematic random sampling technique. The Study population of this study was all dermatological patients who were visit BMH, dermatology unit in outpatient department and for whom

medicines were prescribed during study period.

Sampling technique and sample size

Sample size

The sample size for this particular study was calculated using formula for a single population proportion considering the following assumptions: A 95% confidence level, margin of error(0.05) and assume maximum variability ($p=0.5$). These parameters are substituted in the following single population proportion formula:

$$n = \frac{z^2 p(1-p)^2 (1.96)^2 \times 0.5(1-0.5)^2}{(0.05)^2} = 384$$

Where, n =Sample size; p =Proportion of people; d =margin of error (0.05); z =confidence level 95% (*i.e.*, 1.96).

The population of annual dermatological patients at BMH is <10,000, therefore sample size adjustment is needed by using population correction formula:

$$(n_o = [ni / (1 + (ni/N))])$$

Where, N =8400 (total number dermatological patients annually); ni =unadjusted sample size calculated. Sample size n_o =adjusted Sample size; n_o is equal to 367 and 5% for (incomplete information or data) makes the sample size 385.

Sampling technique

After sample size determined, Systematic random sampling

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technique was used to select the sample prescription.

Data collection and data analysis

Well-trained pharmacy personnel collected data on patient prescriptions. The specific types of data necessary to measure the prescription patterns were recorded for each patient prescription and entered directly into an ordinary prescription patterns form. After collection of the data, the data was entered in to SPSS version 20 for analysis.

Quality control

The data was verified by well-trained pharmacy personnel through direct supervision of principal investigators during the data Collection period.

Ethical consideration

The study was approved by chief executive officer, and the head of the pharmacy department in the BMH. A formal letter was written from BMH and given to pharmacy department and also confidentiality of the information obtained from the patient's prescription reviewed throughout the study period was kept.

RESULTS

The study includes a total of 385 patients and overall numbers of male patients were 192(49.9%) while numbers of female patients were 193(50.1%). The maximum numbers of patients were in male between the age group of 21-30 years (25.5%) and in female 21-30 years (32.6%). The minimum numbers of patients were in male between Female >60 years (1.6%) [Tables 1-7].

Most of topical steroids were prescribed by generic name. The number of drugs prescribed by brand name was 18.3% for drugs prescribed in single and 15.6% for drug prescribed in fixed dose combinations. Out of 1104 drugs, topical route 731(66.2%) was the most route of administration. oral route 212(19.2%) was the second most route of administration followed by a combination systemic and local route of administration.

Total number of drugs in 385 patients was found to be 946. Number of drugs per prescription varied from 1 to 7 with average of 3.0. Most of the prescriptions consists of minimum of 2 drugs (180 prescriptions, 46.75%). And the others with 14.80%, 22.60% contain a single drug and 3 drugs respectively.

Disease distribution

Out of 385 patients, prevalence of atopic dermatitis was higher in with (26.3%, 20.8%) both male and female respectively followed by scabies in male with 12.2% and Acne vulgaris (12.9%) in female by emollient (21.2%). Out of total of 905 The drugs prescribed, topical steroids were the most commonly used (25.3%), followed drugs 229 (25.3%) were Among topical drugs, Betamethasone cream/ointment was the most common prescribed drug. The most commonly prescribed drug was ketoconazole shampoo (50.9%) from the anti- fungal and doxycycline (37.7%) from anti-biotic. Out of 385 prescription drugs prescribed 67.5% frequency of application, 56.1% duration of treatment and 54.0% site of applications are specified. Consideration of various parameters while prescribing in the prescription of drugs.

DISCUSSION

The results of this study provide valuable information on the prescribing patterns of doctors for dermatological patients at BMH. Many of the patients seen were in male between the age group of 21-30 years (25.5%) and in female 21-30 years (32.6%). This results

Table 1: Age with Sex distribution of the patients in dermatology unit of BMH (Dessie, 2016)

Age group	Male, n (%)	Female, n (%)
0-10	31(16.2%)	30(15.5%)
11-20	47(24.5%)	53(27.5%)
21-30	49(25.5%)	63(32.6%)
31-40	19(9.9)	22(11.4)
41-50	20(10.4%)	15(7.8%)
51-60	14(7.3%)	7(3.6%)
>60	12(6.3%)	3(1.6%)
Total	192	193

Table 2: Distribution of prescription item in Generic/Brand name in dermatology unit of BMH, 2016

Prescription item	Generic	Brand	Total
Single drug	572(81.7%)	128(18.3%)	700
Combination drug	205(84.4%)	38(15.6%)	243

Table 3: Route of administration number of drugs prescribed in dermatology unit of BMH, 2016

Route of administration	Number	Percentage (%)
Oral	212	19.2%
Topical	731	66.2%
Parenteral	1	0.1%
Combination(systemic& local)	160	14.5%
Total	1104	100%

Table 4: No. of drugs per prescription in dermatology unit at BMH, Dessie, 2016

No. of drugs per prescription	No. of prescription, n (%)
1	57(14.8%)
2	180(46.8%)
3	87(22.6%)
4	42(10.9%)
5	16(4.2%)
6	1(0.3%)
7	2(0.5%)
No. of drugs per prescription	2.46

Table 5: Disease patterns in dermatology unit of BMH, 2016

Disease	Male, n(%) (467)	Female, n(%) (456)	Total
Atopic dermatitis	123(26.3%)	95(20.8%)	218(47.1%)
Acne vulgaris	34(7.3%)	59(12.9%)	93(20.2%)
Nummular eczema	44(9.4%)	48(10.5%)	92(19.9%)
Seborrhic dermatitis	31(6.6%)	45(9.9%)	76(16.5%)
Scabies	57(12.2%)	17(3.7%)	74(15.9%)
Tinea capitis	24(5.1%)	29(6.4%)	53(11.5%)
Allergic contact dermatitis	14(3%)	33(7.2%)	47(10.2%)
Pityriasis alba	23(4.9%)	17(3.7%)	40(8.6%)
Supper infected eczema	22(4.7%)	16(3.5%)	38(8.2%)
Melasma	11(2.4%)	26(5.7%)	37(8.1%)
Psoriasis	13(2.8%)	19(4.2%)	32(7%)
Tinea pedis	27(5.8%)	4(0.9%)	31(6.7%)
Viitiligo	13(2.8%)	16(3.5%)	29(6.3%)
Cellulites	18(3.9%)	10(2.2%)	28(6.1%)
Impetigo	4(0.9%)	17(3.7%)	21(4.6%)
Onchomycosis	9(1.9%)	5(1.1%)	14(3%)

Table 6: Category of drugs prescribed at the dermatology unit of BMH (Dessie, 2016)

Drug category	No. of drug	Percentage
Topical steroid	229	25.3%
Emollient*	192	21.2%
Anti-biotic	149	16.5%
Antifungal	113	12.5%
Systemic steroid	29	3.2%
Antihistamine	24	2.7%
Vitamins	3	0.3%
Anti-viral	2	0.2%
Others**	164	18.1%
Total	905	100%

*Emollient like: liquid paraffin, white petrolatum ointment, Neiva cream;

**Others such as: salicylic acid powder, urea powder, metronidazole powder

Table 7: Various parameters in the prescriptions of drug in dermatology unit of BMH, 2016

Parameters	No. of prescriptions on which specified	Percentage (%)
Frequency of application	260	67.5 (%)
Duration of treatment	216	56.1 (%)
Site of application	208	54.0 (%)

were compare with in the past study done in Ayder referral hospital, which were maximum numbers of patients in male between the age group of 11-20 years (32.14%) and in female 11-20 years (31.63%).^[6] Number of drugs per prescription varied from 1 to 7 with average of 2.46. Most of the prescriptions consists of minimum of 2 drugs (180 prescriptions, 46.8%). And the others with 14.8%, 22.6% contain a single drug and 3 drugs respectively. This study showed the incidence of polypharmacy. Polypharmacy is the use of an excessive number of inappropriate medicines. Average number of drugs per prescription reported in this study was very low as compared to studies by Sarkar *et al.* and Narwane *et al.* where average number of drugs prescribed were lesser than 3 drugs per prescription *i.e.*, 2.7 and 2.64/prescription respectively.^[7,8]

This study showed that atopic dermatitis (26.3%) and (20.8%) was the most common dermatological condition in the dermatology unit in both male and female respectively, Followed by scabies (12.2%) in male and acne vulgaris (12.9%) in female. different findings were also reported from study carried out in India the study showed fungal disease was the most common.^[9] From the total of 1104 drugs prescribed, Topical corticosteroids were accounts for 731 (66.2%) followed by emollient (21.2%). This finding was similar with topical corticosteroids in Ayder referral hospital study and different from a study done by Bijoy *et al.* and Ashok *et al.* in India where Anti fungals were the most commonly prescribed.^[9,10]

It is important that drugs should be prescribed in their generic names to avoid confusion and minimize the costs. But the result of the current study showed 18.3% of a single drug and 15.6% of drugs in fixed dose combinations were prescribed with brand name. This finding was different with the study done by ayder referral hospital study showed that 94.57% of a single drug and 100%of drugs in fixed dose combination were prescribed with brand name.^[6]

The higher percentage of nonproprietary prescriptions in

outpatients invokes the problem of the vast expenditure on such drugs and their availability in the hospital pharmacy. Many patients attending a hospital as out-patients belong to the lower socio-economic status and would have to buy nonproprietary drugs from a low price. But he/she would have to buy proprietary drugs from high price and other relevant pharmacy outlets. Lack of trust in the quality of generic drugs could be the reason why brand names were highly prescribed. Among the total number of drugs prescribed, most of them were prescribed by topical (66.2%) followed by oral routes (19.2%) and the second most route of administration were a combination of systemic and local route of administration (14.5%). The reason for a high percentage of topical drugs being prescribed is that topical route has minimum side effects hence is the preferred route of administration in dermatology. The use of fixed-Dose combinations may help to bring down the cost and improve compliance. According to Salwa Omer *et al.* study combination route of administration (systemic and local) was highly prescribed with a prevalence of 67.2% followed by oral route which was prescribed for 25.3% of cases.^[11]

Frequency of application was specified only in 67.5% of prescriptions and duration of treatment and site of application was also steted in 56.1% and 54.0% of prescriptions respectively. This finding were similar with the study done by Ayder referral hospital, Ashok *et al.* and Sweileh.^[6,9,12]

CONCLUSION

The current study reveals that average number of drugs per prescription was high (2.46) and topical corticosteroids were commonly prescribed drugs in the dermatology unit. This finding also showed that atopic dermatitis was the most prevalent disease condition.

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