

**Original Article****Evaluation of Drug Prescribing Patterns and Cost Analysis of Individual Prescription in Dermatology OPD of Rajshahi Medical College Hospital**

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**\*For Correspondence****Abstract**

**Background:** In developing countries skin diseases have a serious impact on peoples quality of life. The prevalence of skin disease in the general population varies from 11.1% to 63%. Different class of drugs and combinational products are available in dermatology for treatment. Intermittent prescription analysis in the form of drug prescribing pattern can improve the quality of prescription.

**Objectives:** To observe the prescription pattern and improving the prescribing practices proposed by the world health organization (WHO), so that they can improve prescribing practices.

**Materials and Methods:** This cross-sectional type of descriptive study was carried out among patients attending the OPD of Dermatology from July 2016 to June 2017 in Rajshahi Medical College Hospital. The relevant data was collected from OPD prescriptions by taking photographs of the prescriptions and details were filled in the predesigned proforma. A total number of 384 prescriptions were collected from the dermatology OPD patients and data was analyzed by SPSS version 16.

**Results:** Among 384 prescriptions, total number of drugs was 1453. The average number of drugs per prescription was found to be 3.8. Prescription with generic name 27.8%. Antibiotics 19.96%, Antihistamine 17.96%, Corticosteroid 14.65%, Antifungal 12.32%, Vitamin 10.12%, Anti-helminthic 9.8%, others 15.3% were the most common class of drugs, dosage forms prescribed were mostly topical 62.63% in the form of ointments, creams, lotions, shampoo, powders.

**Conclusion:** From our study we found that scabies, dermatitis, acne vulgaris, fungal infections and Psoriasis were most common skin disease in this region and Antibiotics 19.96%, Antihistamine 17.96%, Corticosteroid 14.65% were most commonly prescribed drug. Number of drugs per prescription was much higher 3.8 than the recommended limit of 2 approved by WHO and practice of polypharmacy was also commonly seen.

**Key Words:** WHO, Prescription, Antibiotics, Corticosteroids.

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### Introduction

Prescriptions have been used since ancient times for the management of patients<sup>1</sup>. It reflects the instructions given by the prescriber to the patient. But improper prescribing may lead to ineffective and unsafe treatment, exacerbation or prolongation of illness, distress and harm to the patients and higher cost<sup>2</sup>. Now a days, practices in writing prescription have been questionable<sup>3</sup>. Worldwide more than 50% of all drugs are prescribed, dispensed or marketed inappropriately, while 50% of patients fail to take them correctly<sup>4</sup>. In developing countries skin diseases have a serious impact on people’s quality of life and associated with climate, socio-economic status, religions and customs are widely varied in different parts of the country<sup>1,2,5</sup>. The evaluation and assessment of drug prescribing pattern plays an important role in worldwide attention to improve health care delivery system. Prescription order is an important agreement between the physician and the patient<sup>6</sup>. The conference of experts on the rational use of drugs, convened by the World Health Organization (WHO) in Nairobi (Kenya) in 1985 defined that “Rational use of drugs requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time and at the lowest cost to them and their community”<sup>7</sup>. World health organization goal is to help save lives and improve health by ensuring the quality, efficacy, safety and rational use of medicines, including traditional medicine and by promoting equitable and sustainable access to essential medicines, particularly for the poor and disadvantaged<sup>8</sup>. The present study has been undertaken to help the clinicians to take measure for the improvement of prescribing behavior and to prevent prescribing errors and thus promote rational use of medicine.

### Materials and Methods

A prospective cross sectional type of descriptive study was conducted in the Department of Pharmacology and Therapeutics of Rajshahi Medical College Hospital (RMCH), Rajshahi, Bangladesh from July 2016 to June 2017. The research protocol was approved by Institutional Ethics Committee, Rajshahi Medical College and Hospital, Rajshahi. Verbal informed

consent was taken from all patients involved in this study. Total 384 prescriptions were collected between the age of <1->65 yrs.

### Selection criteria

#### Inclusion criteria:

Patients of all age group and both genders suffering from various dermatological disorders.

#### Exclusion criteria:

- Skin disease prescription of indoor patient and follow up patients.
- Unwilling to participate in the study.
- Prescription contains more than one disease.
- Prescription without format was not accepted.

The relevant data was collected from OPD Patients by taking photographs of their prescription prescribed by physicians and details were duly filled in the predesigned proforma. Prescriptions were analysed for following information like drug prescribing pattern of various skin diseases and percentage of different drugs prescribe by different physicians. SPSS-16 was used for statistical analysis. Results were expressed in terms of percentage.

### Result

**Table-I: Showing different drugs used in dermatology OPD.**

Drugs	Frequency	Percentage
Antibiotics	290	19.9%
Antihistamine	261	17.9%
Corticosteroid	213	14.6%
Antifungal	179	12.3%
Vitamin	147	10.1%
Anthelminth	143	9.8%
Others	220	15.3%

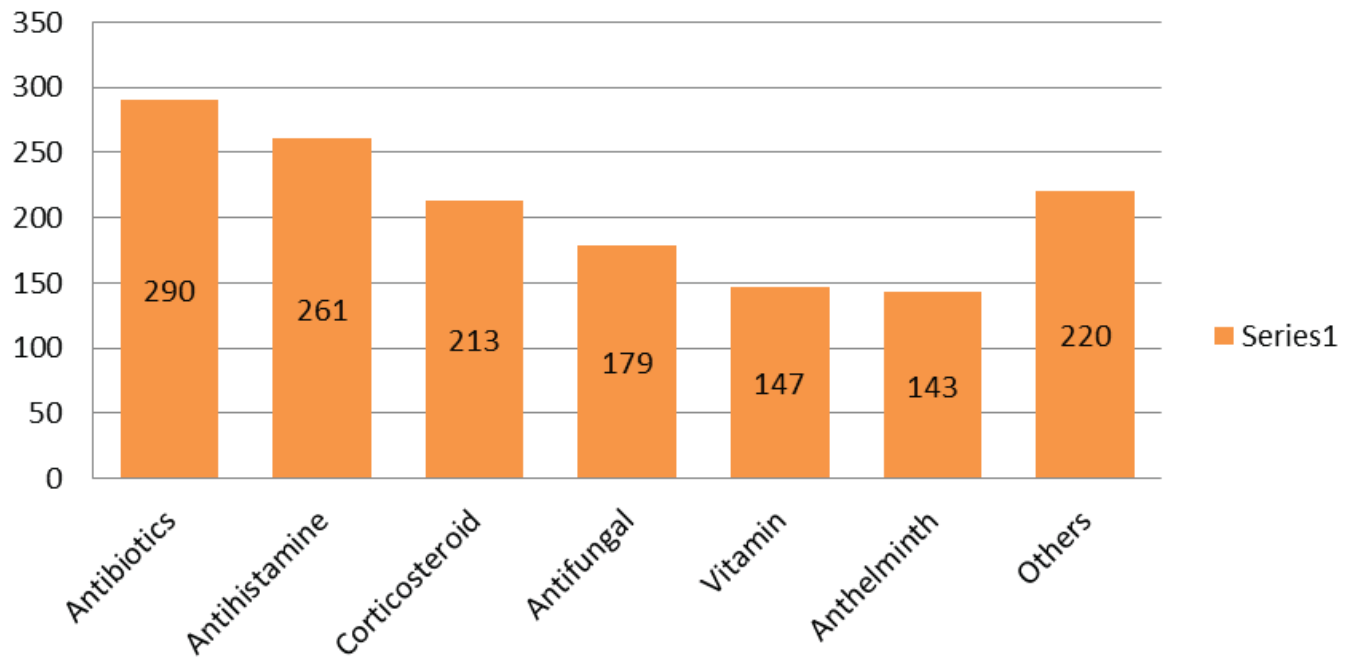
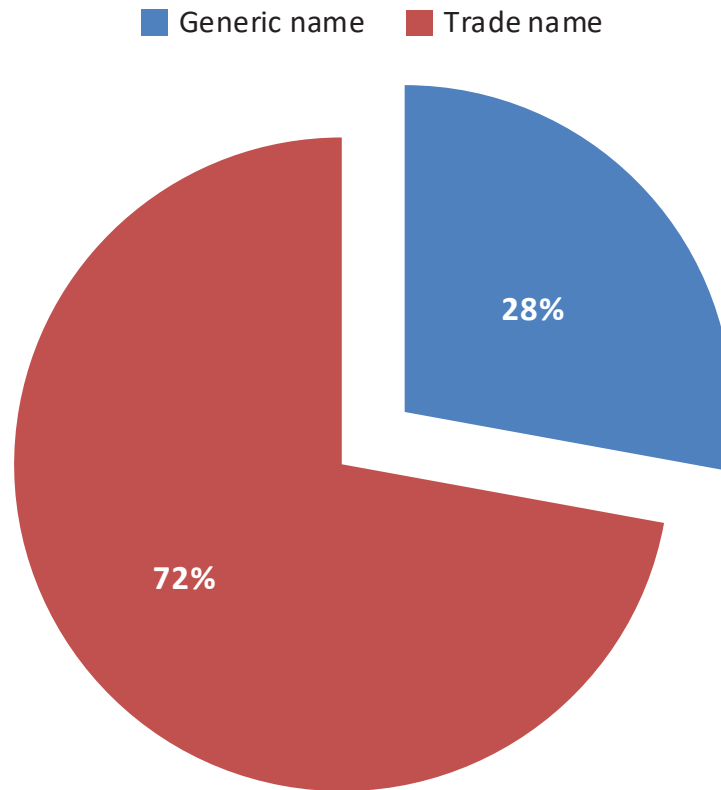


Figure 1: Distributions of most commonly drugs

Table II: Number of drugs per prescription (n=1453)

Number of drug per prescription	Frequency	Percent
One drug	7	1.8
Two drug	48	12.5
Three drug	135	35.2
Four drug	88	22.9
Five drug	65	16.9
Six drug	25	6.5
Seven drug	12	3.1
upto nine drug	4	1
<b>Total</b>	<b>384</b>	<b>100</b>
<b>Mean ± SD</b>		<b>3.78</b>



**Figure 2: Distributions of drugs in respect to generic & trade name**

### Discussion

The present study allowed us to get information about the skin disease profile, pattern of drug prescribed and cost of drug per prescription in dermatology OPD in RMCH and also the standard prescription pattern according to WHO core drug prescribing indicator. In context to the average number of drugs per prescription, the value found in the present study was 3.7. Similar study conducted in other countries, where the values found were lower than the present study. In India, it was 2.4 (Saleem M et al<sup>9</sup>, Yunate et al<sup>10</sup>), 2.7 (Narwane SP et al<sup>11</sup>), 2.6 (Manjusha et al<sup>12</sup>), 3.2 (Arun patil<sup>13</sup>) The values were found higher than the current study 4.1 (Gupta et al<sup>14</sup>), 4 (Mezgebe et al<sup>15</sup>), 3.8 (Nusrat noor<sup>6</sup>). This difference might be due to variation in health care delivery system, socioeconomic condition and severity of skin disease, patient’s expectation, demand of quick relief mortality and morbidity criteria of the population. According to WHO, the average number of drugs per prescription should be 1.6-1.8. There was evidence of poly pharmacy.

The range of drugs per prescription varied from (1-9). There was no single prescription without prescribing any drug. One drug was prescribed in 7 (1.8) %, two drugs 48(12.5) %, three drugs 135 (35.2%), four drugs 88 (22.9%), five drugs 65 (16.9%), six drugs 25(6.5%), seven drugs 12 (3.1%), more than seven up to nine drugs 4 (1%) among 384 prescriptions. In the present study percentage of drugs prescribed in generic name was (27.87%) and trade name was (72.13%). This is comparatively higher than other study. Sarkar C, Das B, Sripathi H<sup>16</sup> showed that the generic name was 16.6% and brand name was 83.4%. The prescribing of drug by their generic names could minimize the cost and thus increase prescription compliance.

In the present study, most commonly prescribed drug was antibiotics (19.96%), Antihistamine (17.9%), corticosteroid (14.65%), Antifungal (12.3%), Vitamin (10.12%), Anthelminthic (9.8%), others (15.3%). Our study showed that antibiotics (19.9%) that is higher (31.9%) in Manjusha et al<sup>12</sup>. Less in (17.6%) Gupta S et al<sup>14</sup>. Sultana F<sup>17</sup> (15.9%), Yunate et al<sup>10</sup> (16.9%).

According to WHO (15-25%) prescriptions with antibiotics are expected in most of the developing countries where infectious diseases are more prevalent. So our study shows within the range of WHO. Antihistamine was second common prescribed drug 17.96% which is higher than Gupta. S. et al<sup>14</sup>. (15.9%), Yunate. AH et al<sup>10</sup>. (15.62%), Manjusa et al<sup>12</sup>. (17.3%). Corticosteroid and its combination were prescribed in (14.6%) of prescription which was higher than Gupta.S. et al<sup>14</sup>. (9.4%), Yunate. AH et al<sup>10</sup>. (9.9%), Narwane et al<sup>11</sup>. (5%). This percentage is higher than other study because of scabies and dermatitis was more common disease. Antifungals prescribed were (12.3%) which was nearly similar to Narwane et al<sup>11</sup>. but higher in Gupta.S et al<sup>14</sup>. (19.4%), Among the antifungal fluconazole was most commonly used as a topical and oral route due to less adverse effect. Ketoconazole also use as a shampoo for tinea capitis. Vitamins were (10.1%) among 384 prescriptions which was higher than Yunate AH et al<sup>10</sup>. (4.93%), this is higher due to prescribe antibiotic to prevent vitamin deficiency. This study findings showed the average cost of drug was 849.3 tk per prescription which was higher than Sharker SK et al<sup>18</sup>.(487 INR) and Narwan et al<sup>11</sup>.(135 INR). In the present study, per prescription cost was higher due to maximum cost spent on antibiotics, immune modulators (tecrolimus), combined preparations, higher cost of dermatological products and full course of treatment takes about 1-2 months whereas other studies showed 7 days treatment cost only.

### Conclusion

This study is mainly focused on the prescribing pattern of drugs in dermatology out-patient department in RMCH. This study reveals that antibiotics (19.96%), antihistamine (17.96%), corticosteroid and its combination (14.65%), antifungal (12.32%) were most common class of drugs prescribed in RMCH. Drugs were most commonly prescribed in trade name (72.13%) and topical dosages forms (62.63%). Number of drugs per prescriptions was 3.8 which is the higher than the recommended limit of 2 approved by WHO and Practice of poly pharmacy was also commonly seen.

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