



## Prescription Pattern of Different Groups of Antibiotics at Out Patient Department of a Tertiary Medical College Hospital in Dhaka City



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### Abstract

**Background:** Drugs prescription pattern is very important at outpatient department in the tertiary care hospital. **Objective:** The purpose of the present study was to evaluate the distribution of patients and antibiotic prescribing trends in OPD of a Tertiary Medical College hospital. **Methodology:** This cross-sectional study was undertaken in the medicine, surgery, gynaecology & obstetrics and paediatrics Out Patient Department of Shaheed Suhrawardy Medical college hospital, Dhaka. The duration of the study period was 5 weeks (25th March, 2017 to 29th April, 2017). The study was designed to obtain information regarding prescribing pattern of drugs by physicians and also to analyze basal information of the prescription. The prescription was observed from the hospital's OPD and few prescriptions were from each unit. **Results:** A total 320 prescriptions were observed from the hospital's OPD where 80 prescriptions were from each unit. The mean age of the patients was 24.50±14.976 years. The most commonly prescribed antibiotics at medicine OPD was Cephalosporin which was 19(51.4%) cases followed by others antibiotics and azithromycin which was 9(24.3%) cases and 8(21.6%) cases respectively. In surgery OPD, the most commonly used antibiotics were flucloxacillin and cephalosporin which was 66(82.5%) cases and 24(30.0%) cases respectively. In Gynae & obstetrics OPD, the most commonly prescribed antibiotics were quinolones which were 23(46.0%) cases. **Conclusion:** In conclusion most commonly used antibiotic are Cephalosporin, azithromycin and Flucloxacillin in different OPD of the hospital. [*Journal of National Institute of Neurosciences Bangladesh, January 2023;9(1):54-58*]

**Keywords:** Drugs Prescription; Pattern; Antibiotics; Out Patient Department; Tertiary Medical College Hospital

### Introduction

Inappropriate drug prescribing is a global problem<sup>1</sup>. Irrational practices include polypharmacy, use of incorrect drugs or ineffective drugs, incorrect use of effective drug, use of combination products which are costlier and offer no advantages over single compounds<sup>2</sup>. Irrational drug use leads to reduction in the quality of drug therapy, wastage of resources, increased treatment cost, increased risk of adverse drug reaction and the emergence of drug resistance<sup>3</sup>.

Drug utilization reviews are useful for obtaining information about drug use patterns and for identifying expensive drugs<sup>4</sup>. Prescribers can only treat patients in a

rational way if they have access to an essential drug list and essential drugs are available on a regular basis. The principal objectives of the National Drug Policy in our country were to make available essential drugs; ensure good quality drugs; control drug prices; ensure rational use of drugs; develop an effective drug monitoring system; improve the standard of hospitals and retail pharmacies and ensure good manufacturing practices<sup>5-8</sup>. However, due to a lack of serious attention to the rules laid down in the drug policy, prescribing behavior of doctors appears to be changing.

Though a number of investigations on prescribing practices have been undertaken in different countries,

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very little data have seriously been looked for in this country<sup>9</sup>. This study finding can be utilized to create awareness among physicians about antibiotic prescribing principles and thereby ensure good quality of drug therapy, to practice rational use of drug and to improve quality treatment<sup>10</sup>. Therefore, the study was undertaken to observe the prescribing patterns in a tertiary level hospital of Dhaka city.

**Methodology**

**Study Settings and Population:** This cross-sectional descriptive type of study was undertaken in the medicine, surgery, gynaecology & obstetrics and paediatrics Out Patient Department of Shaheed Suhrawardy Medical college hospital, Dhaka. The duration of the study period was 5 weeks (25th March, 2017 to 29th April, 2017).

**Study Procedure:** The study was designed to obtain information regarding prescribing pattern of drugs by physicians and also to analyze basal information of the prescription. The prescription were observed from the hospital's OPD and few prescriptions were from each unit. Purposive sampling technique was used to collect data by data collected schedule. New patients attending OPD were included in the study and patients attending emergency outdoors & patient who got admitted were excluded. Parameters present on the prescription such as patient's information (name, age, gender), information of hospital (department, unit), disease diagnosed and drug prescribed to each patient were studied.

**Statistical Analysis:** Statistical analysis was performed by Windows based software named as Statistical Package for Social Science (SPSS), versions 22.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). Continuous data were expressed as mean, standard deviation, minimum and maximum. Categorical data were summarized in terms of frequency counts and percentages.

**Results**

A total 320 prescriptions were observed from the hospital's OPD where 80 prescriptions were from each unit. The majority of patients were within the age group 18 to 45 years. The mean age of the patients was 24.50 with a standard deviation of 14.976 (Figure I). Out of them 175(54.09%) were female and 145(45.31%) were male patients (Figure II).

Antibiotics prescription patterns were varied in the different OPD of the hospital. In medicine OPD, the prescription pattern of antibiotics was 36 cases. In

surgery OPD it was 80 cases. In the OPD of gynaecology and obstetrics department 49 cases were advised antibiotics. In the OPD of paediatrics

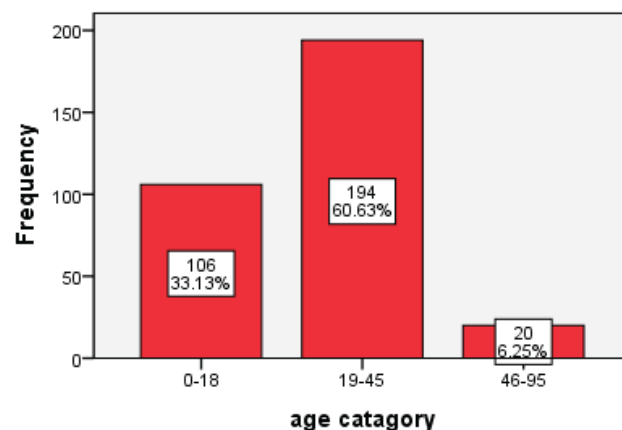


Figure I: Showing the Age Distribution among the Study Population

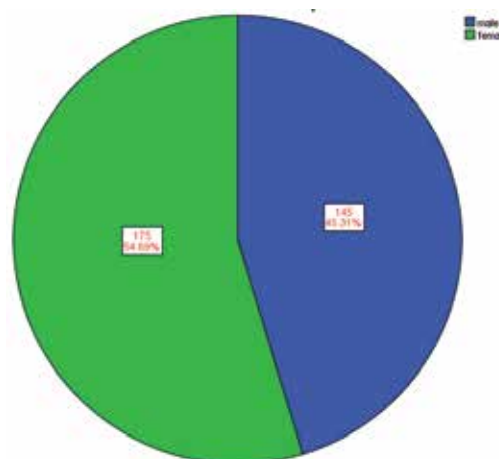


Figure II: Pie chart showing sex distribution of patients

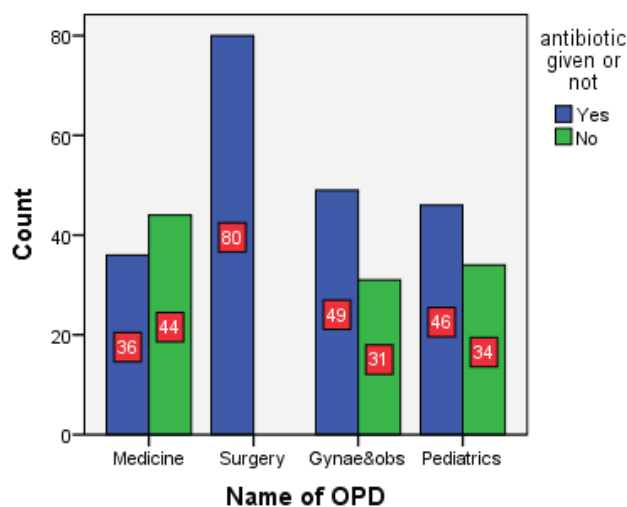


Figure III: Showing the Different Department of OPD

department 46 cases were prescribed antibiotics (Figure III). According diagnosis made by the physicians, various types of patients were attended in OPD of different units of OPD. In medicine unit 25.0% patient were of typhoid and other PUO, 19.0% of peptic ulcer, 12.5% cases of respiratory tract infection 10.0% UTI and rest were of other acute infections. Only 4.0% DM and 6.3% HTN related patients were found. In the surgery, only infected cyst and surgical problem were reported which was 29(36.3%) cases and 51(63.8%) cases respectively. In gynaecology and obstetrics department most of the patients were Pregnancy-related

diseases and vaginal discharge which was 20(25.0%) cases in each followed by UTI and DUB which were 11(13.8%) cases and 8(10.0%) cases respectively (Table 1).

The most commonly prescribed antibiotics at medicine OPD was Cephalosporin which was 19(51.4%) cases followed by others antibiotics and azithromycin which was 9(24.3%) cases and 8(21.6%) cases respectively. In surgery OPD, the most commonly used antibiotics were flucloxacillin and cephalosporin which was 66(82.5%) cases and 24(30.0%) cases respectively. In Gynae & obstetrics OPD, the most commonly

Table 1: Clinically Diagnosed Cases of attended at Different OPD

Diseases	Medicine	Surgery	Gynae & Obs	Paediatrics
PUD	15(18.8%)	-	1(1.3%)	17(21.3%)
Viral fever	3(3.8%)	-	-	2(2.5%)
Typhoid/PUO	20(25.0%)	-	-	1(1.3%)
DM	3(3.8%)	-	-	-
Respiratory tract Infection	10(12.5%)	-	3(3.8%)	32(40.0%)
UTI	8(10.0%)	-	11(13.8%)	1(1.3%)
HTN related	5(6.3%)	-	-	-
Infected cyst	-	29(36.3%)	-	-
Surgical problem	-	51(63.8%)	-	-
Pregnancy-related	-	-	20(25.0%)	-
DUB	-	-	8(10.0%)	-
Vaginal Discharge	-	-	20(25.0%)	-
Others	16(20.0%)	-	17(21.3%)	27(33.8%)

Table 2: Name of Antibiotics Prescribed at Different OPD

Name of OPD	Name of Antibiotics				
	Azithromycin	Cephalosporin	Quinolones	Others	Flucloxacillin
Medicine	8(21.6%)	19(51.4%)	3(8.1%)	9(24.3%)	0(0.0%)
Surgery	0(0.0%)	24(30.0%)	13(16.3%)	9(11.3%)	66(82.5%)
Gynae & obs	14(28.0%)	10(20.0%)	23(46.0%)	27(54.0%)	0(0.0%)
Pediatrics	21(45.7%)	9(19.6%)	11(23.9%)	5(10.9%)	0(0.0%)

Table 3: Name of Drugs Prescribed in Different OPD

Drugs	Medicine	Surgery	Gynae & Obs	Paediatrics
Paracetamol	35(43.8%)	7(8.8%)	1(1.3%)	20(25.3%)
Antispasmodic	11(13.8%)	0(0.0%)	18(22.5%)	5(6.3%)
Antiulcer drug	77(96.3%)	79(98.8%)	51(63.8%)	25(31.6%)
Antihypertensive	3(3.8%)	0(0.0%)	0(0.0%)	0(0.0%)
Sedative/Anxiolytic	10(12.5%)	1(1.3%)	1(1.3%)	1(1.3%)
Others	66(82.5%)	23(28.8%)	41(51.3%)	109(138.0%)
NSAID	1(1.3%)	72(90.0%)	3(3.8%)	0(0.0%)
Antifungal	0(0.0%)	0(0.0%)	26(32.5%)	0(0.0%)
Vitamins/Minerals	0(0.0%)	0(0.0%)	60(75.0%)	19(24.1%)

prescribed antibiotics were quinolones as well as other groups of antibiotics which were 23(46.0%) cases and 27(54.0%) cases respectively (Table 2).

There were some frequently used drugs reported in this study. In medicine OPD these were antiulcer drug, paracetamol and antispasmodic which were 77(96.3%) cases, 35(43.8%) cases and 11(13.8%) cases respectively (Table 3).

### Discussion

In a developing country like Bangladesh, the cost of health care is a key cause for concern<sup>11</sup>. The practitioners should be made aware of the importance of combination therapy in the treatment of certain infections so that the chance of resistance development can be ameliorated to the most possible extent. Many studies have implicated that antibiotics are among the major group of drugs, which cause adverse drug reactions<sup>12</sup>.

Bangladesh has made substantial progress in drug manufacturing since the promulgation of 'Drug Control Ordinance-1982' but irrational use, inappropriate prescribing and unjustified self-medication of antibiotics often increase the cost of therapy and the risk of the emergence of resistant organisms<sup>13</sup>. Many doctors in Bangladesh are prescribing antibiotics irrationally without taking into consideration the clinical test in most cases. Subsequently, the patients are not completing the complete dosage regimen of antibiotics, if it is given in cold and general fever or even in other complicated infectious diseases<sup>14</sup>.

The study of prescribing pattern of antibiotics infers to monitor, evaluate, and suggest modifications in the practitioner's prescription habits so as to make patient care reasonable and effective<sup>15</sup>. The knowledge about antibiotic utilization patterns is necessary for a constructive approach to problems that arise from multiple antibiotic usages. It is extremely important that institutions and hospitals should have an antibiotic policy and ensure that the best choices are made by individual prescribers<sup>11</sup>. A highly representative data aid the prescribers in rational antibiotic use and can improve the quality of patient care. This further envisages the need for the current study.

The most commonly prescribed antibiotics at medicine OPD was Cephalosporin which was 19(51.4%) cases followed by others antibiotics and azithromycin which was 9(24.3%) cases and 8(21.6%) cases respectively. In surgery OPD, the most commonly used antibiotics were flucloxacillin and cephalosporin which was

66(82.5%) cases and 24(30.0%) cases respectively<sup>9</sup>. In Gynae & obstetrics OPD, the most commonly prescribed antibiotics were quinolones as well as other groups of antibiotics which were 23(46.0%) cases and 27(54.0%) cases respectively. In our research it was found that cephalosporin accounted 31.78% of total antibiotic prescriptions which is high as compared to the study conducted in Nepal and Turkey but low than India<sup>9-11</sup>. The highest uses were by cefixime, cefuroxime and ceftriaxone for respiratory infections and other infections. This probably explains why ceftriaxone and cefixime have abnormally high resistances<sup>7</sup>. Acute respiratory infection was the condition associated most frequently with prescription antibiotic use, a result which substantiates findings from other Asian countries<sup>12</sup>. The results are also consistent with findings in China, where low-severity illness was a major reason for giving children antibiotics<sup>15</sup>. This is probably a result of aggressive marketing policies of Bangladeshi Pharmaceutical Company on the physicians combined with inadequate knowledge of current treatment guidelines. The highest prescribed quinolones were levofloxacin, sparfloxacin and ciprofloxacin which is high compared to study conducted in India and Nepal<sup>13,15</sup>.

### Conclusion

In conclusion the prescription pattern of antibiotics are highest in surgery OPD followed by gynaecology and obstetrics and paediatrics OPD. The medicine OPD is less frequently prescribed antibiotics in the OPD. The most commonly prescribed antibiotics at medicine OPD is cephalosporin followed by others antibiotics and azithromycin. In surgery OPD, the most commonly used antibiotics are Flucloxacillin and cephalosporin. In Gynae & obstetrics OPD, the most commonly prescribed antibiotics are quinolones as well as other groups of antibiotics.

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**Contribution to authors:** Sultana A had involved in protocol preparation, data & sample collection and literature search and

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#### Data Availability

Any inquiries regarding supporting data availability of this study should be directed to the corresponding author and are available from the corresponding author on reasonable request.

#### Ethics Approval and Consent to Participate

Ethical approval for the study was obtained from the Institutional Review Board. As this was a prospective study the written informed consent was obtained from all study participants. All methods were performed in accordance with the relevant guidelines and regulations.

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