



Prescribing Trends in the outpatient Department in A Rural Hospital in Bangladesh



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Abstract

This study was carried out to find the medicine-prescribing pattern in outpatient department of Medicine, Surgery, Gynecology and Obstetrics in government and private hospitals in Faridpur city, Bangladesh. To see the patterns of prescriptions of 250 patients were collected over a period of three months and analyzed for the average number of drugs per prescription, number of drugs prescribed per prescription, most common diagnosis, most commonly prescribed antibiotics, most commonly prescribed groups of drugs, percentage of drugs prescribed by generic names, percentage of drugs prescribed from Essential Drug List (EDL) of Bangladesh. The average number of medicines per prescription was 4.14 and 48.8% patients were prescribed up to 3 medicines. Only 37.16% drugs were prescribed from EDL of Bangladesh. Percentage of encounters with an antiulcer ant, a NSAID and a multivitamin & mineral prescribed were 29.25%, 18.15% and 9.84% respectively.

It was evident that 73.6% [184] of the prescriptions contained antibiotics. Cefixim and ciprofloxacin were found to be the most preferred antibiotics in physician's prescriptions survey. The diseases, which were seen in the studies, include cough, typhoid, diarrhea, nausea, chronic UTI, RTI, fever and rhinitis. The result of the present survey indicates that antibiotics are widely and inappropriately practiced without following standard guidelines. This is an alarming condition in the health sector of Bangladesh and therefore, the respective authority should take necessary steps to minimize the harmful effects of antibiotics.

Keywords: Prescribing pattern; Essential drug; Antibiotic; Faridpur city; Rational use of drug

Introduction

Knowledge of risk perceptions has demonstrated to be vitally important in understanding how individuals and societies manage the risks of daily life. In medicine perceptions of drug risks are probably to influence patients' treatment decisions, their compliance with treatment regimens, their views on the acceptability of adverse reactions and the drugs that cause them, and their attitudes toward government regulation of medications. Understanding perceptions is a prerequisite for designing better communication materials for patients and the general population [1]. The drug use process can be separated into four fundamental components, namely: prescribing, dispensing, administration/uptake and outcome (efficacy/safety) [2]. The evaluation of medication use is vital for clinical, educational and economic purposes [3]. Monitoring of prescriptions and drug utilization study could distinguish the related problems and give feed backs to the prescriber in order to make awareness for the rational use of drugs [4]. It is therefore necessary to define the prescribing pattern and target the irrational prescribing habit for sending a remedial message [5]. Therefore, the present study has been

undertaken to observe the prescribing patterns of Antibiotics and the usage of these agents in different types of patients with different types of diseases in Faridpur City of Bangladesh.

Materials and Methods

Study area, duration of research project and data collection process. A cross-sectional study was conducted in order to evaluate prescription pattern of antibiotic drugs in patients with various infectious diseases. On the basis of inclusion and exclusion criteria prescriptions were collected from all patients (both male and female) attended the outpatient (OPD) at government and private hospitals in Faridpur city. The study was carried out over 90 days period of April 15th, 2018 to July 15th, 2018. A total of 250 patients were included in the study. New patients attending the outpatient department of Medicine, Surgery and Gynecology and Obstetrics in government and private hospitals in Faridpur city during the study period were considered for analysis. Follow up visits during the study period were included and were counted as separate visits. Patients visiting the emergency department or who got admitted during OPD visit

were not included in the study. The average number of drugs per prescription, number of drugs prescribed per prescription, most common diagnosis, most commonly prescribed antibiotics, most commonly prescribed groups of drugs, percentage of drugs prescribed by generic names, Percentage of prescriptions with injectable preparations., percentage of drugs prescribed from Essential Drug List (EDL) of Bangladesh, The data was expressed as percentage, mean and total numbers.

Results

Table 1: Characteristics, frequency and percentage of patient's variables.

Variables	Characteristics	Frequency (N)	Percentage (%)
Age	≤ 17 years	43	17.2
	18 - 50 years	37	14.8
	> 50 years	170	68
Gender	Male	157	62.8
	Female	93	37.2

Total number of 250 medical case records were collected, scrutinized and analyzed for drug prescription. The majority of the patients were male 157 (62.80%) and 93 (37.2%) patients

Table 3: Number of drugs prescribed per prescription.

Prescription Containing Number of Drugs	Number of Prescriptions	%	Total number of Drugs	Average Number of Drugs Per Prescription	% of drugs Prescribed with		
					Generic Name	Antibiotics	Injectable
One	6	2.4	1036	4.14	1.93% [20 drugs]	28.08% [291 drugs]	2.32% [24 drugs]
Two	42	16.8					
Three	122	48.8					
Four	69	27.6					
Five	6	2.4					
Six	3	1.2					
Seven	2	0.8					

Total number of drugs in our prescription was 1036. Among these, the most prescribed drugs were of acid related preparations (29.25%). Then the second most prescribed drugs were antibiotics (28.09%) Table 4.

Table 4: Most commonly prescribed groups of drugs.

Diagnosis	Number of drugs N = 1036	(%)
Antiulcerants	303	29.25
NSAIDs	188	18.15
Antibiotics	291	28.09
Multivitamins & multimineral	102	9.84
Antihistamines	52	5.02

At least one antibiotic was prescribed in 184 (73.6%) of the 250 encounters and 77 prescription contain single antibiotic with other drugs. The most prescribed antibiotic was of cefixime 67 (23.02%). Then the second most prescribed antibiotics ciprofloxacin (17.87%) Table 5.

were female with 14.80% of them aged between 18-50 years Table 1.

Among 250 patients, we found that majority of the patients were victim of gastrointestinal tract infection (51.2%). Other patients suffered from orthopedic disorder (26.0%), respiratory tract infection (8.0%), ENT infections (8.0%) and urinary tract infection (6.8%) respectively. These data are shown in Table 2.

Table 2: Most common diagnosis outpatients.

Diagnosis	Number of cases N=250	(%)
Gastroenterology	128	51.2
Orthopedic disorder	65	26
Respiratory tract infection	20	8
ENT infections	20	8
Urinary tract infection	17	6.8

In this research project, A total of 1036 individual drugs were prescribed for 250 drug encounters, giving an average of 4.14. The range of drugs per encounter varied from 1-7. There was not a single prescription wherein no drug was prescribed. Moreover, very few drugs were prescribed by generic name (1.93%). These data are represented in Table 3.

Table 5: Most commonly prescribed antibiotic.

Generic name Of Antibiotic	Total Number of antibiotic N=291	Percentage (%)
Cefixime	67	23.02
Ciprofloxacin	52	17.87
Cefuroxime	48	16.49
Levofloxacin	34	11.68
Flucloxacillin	28	9.62
Amoxicillin	23	7.9
Others	39	13.4

Among 1036 drugs only twenty drugs (1.93%) were prescribed by generic names. It was also seen that out of 250 prescriptions only 385 drugs (37.16%) were prescribed from the EDL of Bangladesh Table 6.

Table 6: Drugs prescribed from EDL of Bangladesh.

Drugs	Total number of drugs N=1036	(%)
Included within EDL	385	37.16
Excluded from EDL	651	62.83

The present study also shown that omeprazole 58% and multivitamin with mineral 52% were prescribed among essential and non-essential drugs. The five most commonly prescribed drugs, which were included within or excluded from the EDL [6] of Bangladesh Table 7.

Table 7: Five most commonly prescribed drugs, which were included within or excluded from the EDL of Bangladesh.

Drugs	Number of prescriptions	(%)
Included within EDL		
Omeprazole	145	58.00%
Paracetamol	120	48.00%
Ferrous salt + Folic acid	75	30.00%
Metronidazole	65	26.00%
Ciprofloxacin	52	20.80%
Excluded within EDL		
Multivitamin with mineral	102	40.80%
Ranitidine HCl	85	34.00%
Cetirizine HCl	83	33.20%
Calcium carbonate	69	27.60%
Cefixime	67	26.80%

Discussion

A prescription that is given by a doctor or physician is taken as an indication of the doctor or physician’s attitude towards the disease and the role of drugs in its treatment [7]. The central priority of health care system is providing the right medicine to the right people at the right time [8]. The source of data in these study 250 medical cases was collected and the percentages of male and female patients were 62.80% and 37.20%. Most of the patients were above 50 years old. Similar results were obtained from the previous study, which was conducted by Khan et al. [9]. This prospective study was conducted on 4800 patients who visited the OPD and IPD of ENT department of Teerthanker Mahaveer Medical Hospital and Research Centre of North India. Their result indicated that higher percentage of male person suffering from different infections.

We observed that in the data of this research project, most of the patients were suffering from gastrointestinal disorders (51.20%) and orthopedic disorder (26.00%). It is important to note that drugs should be prescribed in their generic names to avoid confusion. In this study the average number of prescribed drugs were 4.14 and drugs were prescribed by generic name is 1.93%. It also showed that 80.08% patients were given three or more drugs. The variation in results may be due to difference in characteristics of health care delivery system, morbidity and

mortality characteristics in the population. Since, WHO has recommended that average number of drugs per prescription should be 2.0 [10], the results of the study reflect polypharmacy which may lead to adverse drug reactions, increase the risk of drug interactions, dispensing errors, decrease adherence to drug regimens and unnecessary drug expenses.

Antiulcerant drugs, 207 prescriptions (69%) were found and the omeprazole [148 prescriptions (49%)] was the most commonly prescribed of this class. The present observation remarked that 73.60% prescription contained antibiotic drugs along with other drugs. Among 41.85% prescription contained single antibiotic drug and 58.15% contained two antibiotic drugs. No prescription contained more than two antibiotic drugs. Prescriptions among which antibiotics that lie under Cefixime, Ciprofloxacin were most commonly prescribed. Similar results were obtained from the previous study, in Iran (61.9%) [11]. In another study by Biswas et al revealed that mostly prescribed drugs were also antibiotics (49.22%) [12]. According to WHO 15- 25% of prescriptions with antibiotics are expected, where infectious diseases are more prevalent [13]. In a 3rd world developing country like Bangladesh, prevalence of infectious diseases is higher than the developed countries. That is why; in this study the antibiotic utilization rate was higher than that of developed countries. However, this result does not indicate that the prescription pattern was better than in other countries.

The WHO recommended target for injection exposure is 10% or less [14]. In this study, the percentage of prescription with an injection encountered was 2.32% which is less than in Nepal (3.1%) [15], Zimbabwe (13%) [16] and India (13.6%) [17]. so, the observed proportion of injectable drugs prescribed may be considered acceptable according to WHO recommendations. Minimum use of injections is preferred, and this reduces the risk of infection through parenteral route and cost incurred in therapy [15]. It also showed that out of 250 prescriptions 102 (40.80%) had at least one multivitamin and multimineral prescribed which was not enlisted in EDL. The justification for this practice is not clear. However, some patients and doctors believe that the multivitamin supplement may induce or enhance the patient’s appetite or relief from weakness. In this study, the percentage of drugs prescribed from EDL of Bangladesh was 43.16%. The possible reason for this lower value could be the prescribers lacking the understanding the importance of essential drug concept. The low rate of prescribing from EDL of Bangladesh may be also contributed by excessive use of multivitamin and multiminera, antiulcerant (Ranitidine) and antihistamine [Cetirizine HCl], which are not enlisted in EDL of Bangladesh. So that the higher percentage of non-essential drugs in this study is responsible for inappropriate use of medicines.

Conclusion

Physician is often considered to be God and therefore when a doctor gives an antibiotic to a patient, it is taken without question.

However, a doctor is often pressurized to give antibiotics for a variety of reasons. It could be due to the pressure of making a patient well as soon as possible, or the fear of losing patients to another doctor. Patients often demand powerful treatments, and then there is the industry pressure and incentive schemes, and, most importantly, the doctor's own clinical judgment skills. To be fair, many doctors work with inadequate and unreliable investigational facilities. This may promote the use of combination antibiotics and defensive medicine. From the result of this study, it can be concluded that inappropriate drug prescribing, inappropriate use of drugs and irrational prescribing of antibiotic are major problems. Therefore, there is a need strict enforcement and adherence to existing regulations regarding antibiotic practices. To overcome these problems, the drugs control authorities should be better equipped and more vigilant to cope with the present situation. Health professionals and drug manufacturers should be more committed in order to achieve the goals of the National Drug Policy of Bangladesh.

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