

Antibiotic Uses in the Outpatient Department: Study in a Teaching Hospital

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Abstract

Original Research Article

Background: The availability of essential drugs (medicines considered indispensable for the treatment of a disease) and the affordability of the common people are crucial for the successful functioning of any health system. **Objective:** The aim of the study was to evaluate antibiotic uses in the outpatient department by using INRUD indicators. **Methods:** This study was analytical cross-sectional descriptive study was carried out among 300 prescription collected from individuals at the outpatient's department (OPD) of medicine, surgery, gynaecology and obstetrics from July 2011 to June 2012 in Mymensing medical college and hospital, Mymensing, Bangladesh. The study population was comprised of all the patients of OPD of Medicine, surgery, Gynecology and obstetrics. Patients who were visited the emergency, patients who transferred to another department, patient who got admitted during OPD visit and who expired were excluded from the study. **Results:** A total 300 prescriptions were analyzed during study period. Among the 300 patients, 180 (60.0%) were female and 120 (40.0%) were male. A total 902 individual drugs were prescribed for 300 drugs encounters, giving an average of 3.01 and the average number of drugs per prescription was found to be highest (3.05) in the gynecology and obstetrics OPD and the lowest (2.97) in the surgery OPD. It was also estimated that the average number of drugs per prescription was 3.00 in the medicine OPD. **Conclusions:** Special attention needs to be given to outpatient department where significant irrational prescribing in the terms of polypharmacy and relative absence of the directions about the use of drugs was evident.

Keywords: Prescribing; Dispensing Practices; Outpatient Department.

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INTRODUCTION

A baseline survey, conducted in 1992 on the use of drugs at some public-sector PHC facilities in rural Bangladesh, found that the availability and use of essential drugs were very low and irrational, and over-prescribing of drugs was common [1]. Since then, a minimum number of studies have been conducted to track the changes over the years and guide practitioners. This study aimed at fulfilling this knowledge gap by investigating the availability and rational use of drugs and the affordability of the common people in both rural and urban PHC facilities in the country. This is expected to help the policy-makers/practitioners to understand the present situation and take remedial measures to reach the poor with 'quality drugs at low cost' [2]. The availability of essential drugs (medicines

considered indispensable for the treatment of a disease) and the affordability of the common people are crucial for the successful functioning of any health system [3]. It is also an important factor to prevent bypassing of primary health care (PHC) facilities by the common people [4]. In Bangladesh, the National Drug Policy (NDP) 1982 was instrumental in improving the supply of essential drugs of quality at an affordable price, especially in the early years [1]. Essential drugs list (EDL), approved by the Government, and initially identified 150 drugs with controlled prices. Due to the policy of buying raw materials from international competitive markets under the new policy, the prices of essential drugs fell sharply in the subsequent years. During 1981- 1991, the retail prices of drugs increased by 20% in the local market [1]. Evidence showed that

essential drugs were not often available, especially in the government health facilities. Besides, the irrational use of drugs, such as over-prescribing, prescribing of multiple drugs, use of unnecessary expensive drugs, and overuse of antibiotics and injections were observed [4]. The concept of essential medicines has also been adopted by many international organizations, including the United Nations Children's Fund (UNICEF) and the Office of the United Nations High Commissioner for Refugees (UNHCR), as well as by nongovernmental organizations and international non-profit supply agencies [5]. Many of these organizations base their medicine supply system on the Model List. Lists of essential medicines also guide the procurement and supply of medicines in the public sector, schemes that reimburse medicine costs, medicine donations and local medicine production, and, furthermore, are widely used as information and education tools by health professionals. The model list serves as a baseline for further modification [5]. The selection of essential medicines is only one step towards the improvement of the quality of health care; selection needs to be followed by appropriate use. Each individual should receive the right medicine, in an adequate dose for an adequate duration, with appropriate information and follow-up treatment, and at an affordable cost. Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately, while 50% of patients fail to take them correctly. Moreover, one third of the world's population lacks access to essential medicine [6]. The medical practitioners need to keep themselves updated through attending seminars, conferences, and other continuing professional development programmes. These programmes should not be supported by pharmaceutical industries, as often there is conflict of interest. They should look for independent publications or drug information centers for drug-related information, but not from the pharmaceutical representatives [6].

OBJECTIVE

The aim of the study was to evaluate antibiotic uses in the outpatient department by using INRUD indicators.

METHODS

This study was analytical cross-sectional descriptive study was carried out among 300 prescription collected from individuals at the outpatient's department (OPD) of medicine, surgery, gynaecology and obstetrics from July 2011 to June 2012 in Mymensing Medical College and Hospital, Mymensing, Bangladesh. The study population was comprised of all the patients of OPD of Medicine, surgery, Gynecology and obstetrics. Patients who were visited the emergency, patients who transferred to another department, patient who got admitted during OPD visit and who expired were excluded from the study. Statistical analysis of the results was obtained by

using window-based computer software devised with Statistical Packages for Social Sciences (SPSS-22).

RESULTS

Three hundred (300) prescriptions were analyzed during the study period. The average number of drugs per prescription was 3.01 and the range was from 1-7. The drugs were prescribed by brand names in these cases of 882 drugs (97.78 %) and by generic name is 20 cases (2.21 %). Hundreds of the 902 drugs prescribed were combination preparation and 27.71 % of the drugs prescribed were from the essential drug list of Bangladesh. More than 90 % of drugs prescribed in the medical OPD during the period of the study were from WHO essential drug list. A total of 300 prescriptions were analyzed during the study period. Among the 300 patients, 180 patients (60%) were female and 120 patients (40%) were male. The age distribution of patients the age group 20-29 years accounted for the highest number 33.33% and more than 90 years of age accounted for the lowest number 0.33% of patients followed by 23.33% less than 20 years of age, 20% between 30 and 39 years, 9.67% between 40 and 49 years, 9% between 50 and 59 years, 2.00% between 60 and 69 years, 1.67% between 70 and 79 years and 0.67% between 80 and 89 years. Out of 300 prescriptions, peptic ulcer disease [31] (10.33%) was the most common and also patients came with the complaints of lower abdominal pain, vaginal whitish discharge was diagnosed as pelvic inflammatory diseases was the second most common followed by low back pain, urinary tract infection, viral fever, COPD, cut/Injury, headache, uterine prolapse, diarrhoea were 6.67%, 5%, 5%, 3.33%, 3.33%, 2.67%, 2.67%, 2.0% respectively. There was about 169 (56.33%) prescriptions have written the diagnosis and rest of 131 (43.67%) prescription did not have any diagnosis written. The missing diagnoses were classified as 'diagnosis not written. At least one antibiotic was prescribed in 100 (33.33%) of the 300 encounters. The most commonly prescribed antibiotic was ciprofloxacin 40(13.33) followed by azithromycin, cefuroxime, metronidazole, amoxicillin, levofloxacin, cefixime, flucloxacillin, cephadrine & Ofloxacin were 12.67%, 10% 6%, 4%, 3%, 2.67%, 2% 1.67% and 1.67% respectively. At least one antibiotic was prescribed in 100 (33.33%) of the 300 encounters. The most commonly prescribed antibiotic was ciprofloxacin 40(13.33) followed by azithromycin, cefuroxime, metronidazole, amoxicillin, levofloxacin, cefixime, flucloxacillin, cephadrine & Ofloxacin were 12.67%, 10% 6%, 4%, 3%, 2.67%, 2% 1.67% and 1.67% respectively.

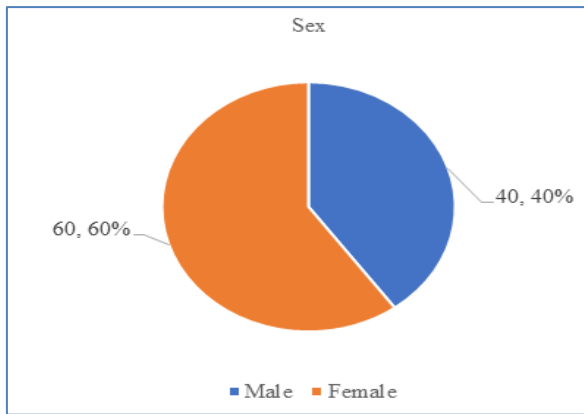


Fig-I: Distribution of study population according to sex.

Table-I: Distribution of study population according to age.

Age Distribution	n=300	%
< 20 Years	71	23.66
20 years to 29 years	100	33.33
30 years to 39 years	60	20.0
40 years to 49 years	29	9.67
59 years to 59 years	27	9.0
60 years to 69 years	6	2.0
70 years to 79 years	5	1.67
80 years to 89 years	2	0.67

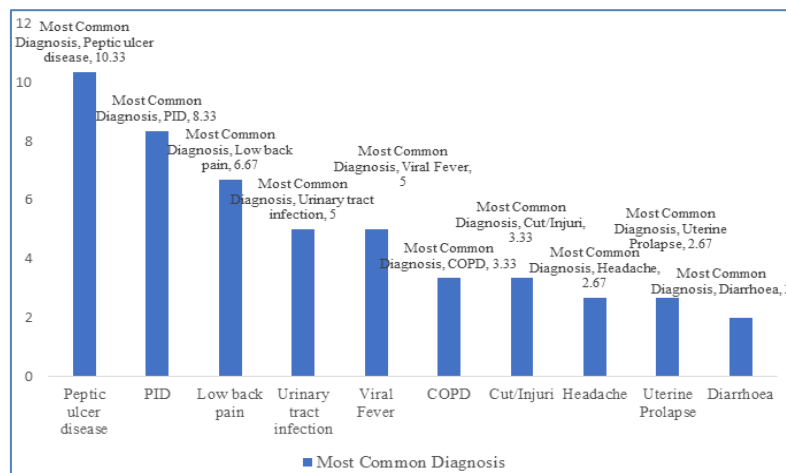


Fig-II: Demonstrate and distribution of study population according to most common diagnosis.

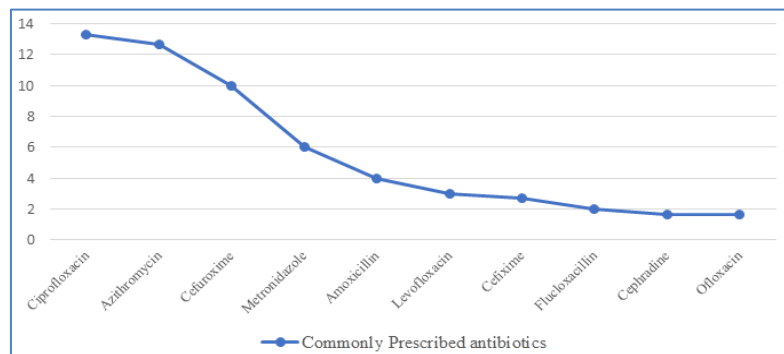


Fig-III: Distribution of study population according to commonly prescribed antibiotics

DISCUSSION

A prescription by a doctor may be taken as a reflection of physician’s attitude to the disease and the role of drugs in its treatment. It also provides an insight into the nature of the health care delivery system. There was an uneven gender distribution with predominance of females (male to female ratio 1:1:5 among patient given drugs) at the MMCH outpatient department. This predominance of female patient was not in agreement with the result of other studies in developing countries [7]. The age distribution of the patient showed that young patient 20-29 years constitute: the highest number (33.33%) visiting the OPD which was

comparable with the result: in a study in Nepal [8]. In the current study a total 78.33% of patients visited the OPD from the low and middle income group. The finding could be attributed to poverty which is a major risk factor for poor health outcomes. 60% female patients seen in this study, majority them were house wives 35 %. 20% of the attending patients were students. The reason behind the 20% student might be due to more consciousness amongst students. Current study figure 3.01 drugs per encounter is higher than the recommended limit of 2.0. Similar findings have been reported in other Indian studies and from Burkina Faso Cambodia, Ethiopia, Ghana, Morocco, Nepal, Nigeria,

Pakistan, Tanzania, Zimbabwe. In the present study three or more drugs were prescribed in 64% of the prescriptions which increase the risk of drug interactions, of dispensing errors and of the patient not knowing the dosage schedules. Increasing generic prescribing would rationalize the use and reduce the cost of drugs. The current study figure is 6.67%, which is very much less than that reported in other studies conducted in Cambodia (99.8%), Zimbabwe (90%), India (73.4%) and Nepal (21.3%). However lesser figure of antibiotics prescribing (17.5%-35.4%) has been reported in Bangladesh, Lebanon, Nepal and Tanzania. Higher figure is reported in a study in Iran 61.9% [9]. It was observed that newer and older generation of antibiotics was prescribed equally. The most common older generation was ciprofloxacin 13.33% Metronidazole 6%. Most common newer generation antibiotics were Azithromycin (12.67%) and cefuroxime (10%).

Of special note is the patient's name, which must be filled in, as more family members are often under treatment at the same time and also to avoid a mix up of medicines. So importance of labeling must not be ignored in Bangladesh since other developing countries like Laos, Zimbabwe, India and Nepal have already introduced such. In the study, only 53.33% key drugs were available in the medicine store or in the hospital pharmacy. A similar figure of 54% has been reported from Bangladesh [4] in another study, a higher figure of 86.6% from Cambodia and an optimal figure of 100% from Ethiopia. Prescribers can only treat patients in a rational way if essential drugs are available on a regular basis. One way of indicating the overall availability of essential drugs is to identify a short list of specific drugs (less than 15) that are essential to treat common problems (WHO 1993). The model list of key drugs for testing drug availability.

CONCLUSION

Current study reveals that despite all the efforts taken by the government and the WHO, the pattern of prescription in terms of completeness and rationality remains poor. There is an urgent need to develop standards of drug prescribing and develop ways and means to ensure that they are adhered to. Special attention needs to be given out patient department where significant irrational prescribing in terms of polypharmacy and relative absence of the directions about the use of drugs was Evident. This could be done by making it mandatory for the prescribers to attend regular continuing medical education (CME), so as to update their knowledge. A check on the influence of pharmaceutical companies and their representatives needs to be maintained in the Hospital outdoor to minimize their influence on the drug prescription. All these measures would go a long way in providing optimal, low cost, and effective medicines to the patients.

Limitations of the study

This was a single center study with limited sample size. So, the result might not reflect the scenarios of the whole country.

RECOMMENDATION

Antibiotic uses in Bangladesh are very crucial at present. Government should give special attention to the outpatient department where irrationally prescribing antibiotic without proper direction. Study also recommends multi-centre study with large sample size.

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