

# DRUG UTILIZATION TRENDS IN ENT OUT PATIENT DEPARTMENT IN A PRIVATE TEACHING HOSPITAL IN BANGLADESH

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## ABSTRACT

*A cross-sectional descriptive study was carried out among individuals attending the ENT out-patient department from 1<sup>st</sup> June 2012 to 30<sup>th</sup> August 2012 in Z.H. Sikder Women's Medical College & Hospital, Dhaka, Bangladesh. The primary aim of this study was to generate up to date information on drug use in the ENT outpatient service of our hospital indications for use. A total of 150 prescriptions were randomly audited at varying time interval from the department of ENT during a three month period. The data was collected in customized proforma. Maximum cases were of otitis media 74(49.33%), sinusitis 24 (16.00%), tonsillitis 15 (10.00%), pharyngitis 14 (09.33%), DNS 14 (09.33%), rhinitis 07 (04.66%), adenoiditis 02 (01.33%). The average number of drugs used in the prescriptions was 2.94%. None of the drugs were prescribed by generic name. All of them were prescribed with trade names. The topical preparations were the most commonly prescribed drugs. Middle and lower income group of patients generally attend out-patient department, the average cost per prescription was 112 taka. The average cost to be high in this group. Educational sessions for the doctors at different levels to encourage prescribing by generic names and on correct writing of prescriptions may be considered. Studies covering a larger number of patients and for a longer time period are required. A greater number of patients can be studied, seasonal variations can be overcome and drug utilization can be measured quantitatively.*

**Keywords:** Drug utilization studies, topical, antimicrobials, NSAIDs, Prescription audit.

(Bangladesh J Physiol Pharmacol 2014;30(2): 41-45)

## INTRODUCTION

Medicine utilization research has been defined by the World Health Organization (WHO) as "the marketing, distribution, prescription and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequence".<sup>1</sup> The assessment of drug utilization is important for clinical, educational and economic purposes.<sup>2</sup> Study of medicine utilization trends are powerful, exploratory tools to ascertain role of drugs in medical practice create a sound and economic basis for health care. Studies on the process of medicine utilization focus on the factors related to the prescribing, dispensing, administering, and taking of medication, and its associated events, covering the medical and non- medical determinants of medicine utilization, their effects as well as studies of how this

relates to the effects of medicine use.<sup>3,4</sup> The characterization of medicine utilization may be extended linking prescription data to the reasons of specific prescribing. They include the concept of appropriateness<sup>5</sup> that must be assessed relative to indication for treatment. Prescribing patterns need to be evaluated periodically to increase the therapeutic efficacy, decrease adverse effects and provide feedback to prescriber.<sup>6,7</sup> Medicine utilization studies and reviews are useful for obtaining information about pattern of medicine use and to identify expensive medicines.<sup>8-12</sup> Prescribing at outpatients is done by various types of health professionals and outpatient clinics deliver therapeutic service to large quarter of patients. Different types of irrationalities were observed both at outpatient of primary care facilities,<sup>13</sup> cost-effectiveness of specific type of care<sup>14</sup> as well as adherence to protocol<sup>15</sup>. Assessment of prescribing pattern in important medical care facilities is of obvious relevance

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to identify problems regarding rational use and to propose interventions.

The objective of the present study was to evaluate and compare patterns of prescribing practice. The primary aim of this study was to generate up to date information on medicine use in the ENT outpatient department of our hospital and indications for use, appropriateness of its use. This would encourage good evidence based practice and facilitate appropriateness of medicines.

## MATERIALS AND METHODS

A cross sectional descriptive study was carried out over a three months period from at a teaching hospital, a tertiary care hospital. The patient and their prescription were used as source of data. A total 150 patients were included in this study. 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 data was collected in customized Proforma in the form of an audit questionnaire. It contained patient particulars, diagnosis, investigations, drug details and information from the prescriber regarding the indication for prescribing agents (both topical and oral), underlying infection, duration of therapy and details of any concomitant medications. Cost of the individual prescriptions worked from prices as given in hospital pharmacy. The data was expressed as percentage and total numbers.

## RESULT

### DEMOGRAPHY

The ENT OPD patients constituted 150 of the total patients attending the hospital OPD between the period of 1<sup>st</sup> June 2012 to 30<sup>th</sup> August 2012. The analysis of demographic data showed that of 150 patients 67 were female and 83 were male.

### PREVALENCE

The incidence of ear affections were the maximum 74(49.33%), followed by throat 24(16.00%) and least were others infection. The various diagnosis for the ear diagnosis were otitis media (acute and chronic), wax. The throat affection (tonsillitis, pharyngitis, mouth ulcers). The distribution of nose affections were infective rhinitis, allergic rhinitis, sinusitis.

### AVERAGE NUMBER OF DRUGS PRESCRIBED

The average number of medicines used in the prescriptions was 2.94 %. About 23 prescriptions containing 04 medicines, 94 prescriptions had 03 and 33 prescriptions had 02 medicines. None of the medicines were prescribed by generic name. All of them were prescribed with trade names. The common categories of

medicines prescribed to ENT outpatients are as shown in the Table No. I

**Table-I**  
*Medicines prescribed*

Medicines	Percentage
Antiallergics	134 (30.30%)
Antibiotics	109 (24.66%)
Topical preparation	94 (21.26%)
NSAIDS	54 (12.12%)
Multivitamins	30 (6.78%)
Antiulcers	21 (4.75%)

### ANTIALLERGICS

The antiallergics used were as Cetrizine, Fexofenadine, Loratidine, Chlorpheniramine, Pheniramine.

### ANTIBIOTICS

The antibiotics commonly prescribed were Macrolides 79, Amoxicillin 24, Fluroquinolones 20 and Cephalosporin 13. The Macrolides commonly prescribed were Azithromycin, erythromycin and Roxithromycin. Sparfloxacin was the common Fluroquinolone used. Ciprofloxacin was used in 4 cases. Amoxicillin was used alone, and in combination with Clavulanic acid. The most commonly used cephalosporins was cefuroxime.

**Table-II**  
*Antibiotics prescribed*

Name of the Medicine	Percentage
1. Macrolids -Azithromycin -Erythromycin -Roxithromycin	79 (58.08%) 54 (64.35%) 13 (16.45%) 12 (15.18%)
2. Penicillins -Amoxicillin + Clavulanic acid -Amoxicillin	24 (17.64%) 18 (75%) 06 (25%)
3. Fluoroquinolones -Sparfloxacin -Ciprofloxacin	20 (14.70%) 16 (80%) 04 (20%)
4. Cephalosporins -Cefuroxime -Cefaclor	13 (09.55%) 11 (84.61%) 02 (15.38%)

### TOPICAL PREPARATIONS

The topical preparation used were gentamicin, ciprofloxacin, clotrimazole, steroid combination drops (dexamethasone, betamethasone in combination with neomycin, clotrimazole). The ear softeners also used. Antiseptic mouth washes were also prescribed.

## ANALGESICS

The analgesics used were Ibuprofen + Paracetamol, Diclofenac, Paracetamol.

## DURATION OF THE PRESCRIPTION

The minimum duration of the prescription was 5 days. The duration for 18 prescription was for 15 days. 32 prescriptions were prescribed for 10 days. 91 were given for 7 days and another 9 for 5 days.

## COST

The total amount spent on these prescriptions was 16,800 taka. The average cost per prescription was 112 taka.

## DISCUSSION

A prescription by a doctor may be taken as an indication of the doctors' attitude towards the disease and the role of medicines in its treatment. With regard to the average number of medicines per prescription, the value found in the present study was 2.94. In similar studies conducted, the lower values found were 1.65 in Zimbabwe,<sup>16</sup> Jordan 2.3,<sup>17</sup> Brazil 2.4,<sup>18</sup> India 2.7<sup>19</sup> and Nepal 2.91.<sup>20</sup> The average (mean) number of medicines per prescription is an important parameter while doing a prescription audit. A hospital based study in India had reported a mean number of two medicines.<sup>21</sup> The mean number of medicines prescribed in this study was more than other studies reported in the literature.<sup>22-23</sup> It is preferable to keep the mean number of medicines per prescription as low as possible since higher figures always lead to increased risk of interactions, development of bacterial resistance and increased cost.<sup>24-25</sup> The number is however, higher than that reported in previous studies.<sup>9,10,26</sup> Maximum cases were of otitis media 74 (49.33%), sinusitis 24 (16.00%), tonsillitis 15 (10.00%), pharyngitis 14 (9.33%), DNS 14 (9.33%), rhinitis 07 (04.66%), adenoiditis 02 (01.33%).<sup>24,25</sup> In another study, most patients reported with URTI (32.56%), CSOM (18.3%), sinusitis (6.28%), tonsillitis (5.75%), furuncle (4.71%). Pharyngitis (3.66%), abscess (3.14%), ASOM (2.61%) and miscellaneous (19.37%).<sup>27</sup> In another study in India, maximum cases were of otitis media 21 (20.51%), wax 19 (18.62%), tonsillitis 16 (15.68%), infective rhinitis 5 (14.7%).<sup>28</sup> The common categories of medicines prescribed to ENT outpatients were antiallergics 134 (30.30%), antimicrobials 109 (24.66%), topical preparation 94 (21.26%), NSAIDS 54 (12.12%). This study shows a high use of antiallergics, which seems justified in the ENT OPD. The antiallergics used were as Cetirizine, Fexofenadine, Loratidine, Chlorpheniramine and Pheniramine, of which Loratidine were maximum prescribed medicine from the second generation non sedating antihistamines. In this study, it was observed that the average prescribing frequency of antimicrobials per prescription was mostly Macrolides 79 (58.08%),

Azithromycin, 54 (64.35%), Erythromycin 13 (16.45%), Roxithromycin 12 (15.18%). It was further observed that antimicrobials were prescribed to patient with infective etiology, which is low. Mostly, the antimicrobials were prescribed for diseases like otitis media, tonsillitis, pharyngitis, infective rhinitis, allergic rhinitis and sinusitis. The use in these conditions seems justifiable as most of these conditions are viral or bacterial in origin. Schwartz et al pointed out that despite the concern over injudicious use of AMAs in acute purulent rhinitis; it was observed 77% of the prescribers continue to prescribe AMAs in this condition.<sup>28</sup> The antibiotics commonly prescribed were Macrolides, Amoxicillin, Fluroquinolones and Cephalosporin. The Macrolides commonly prescribed were Azithromycin, erythromycin and Roxithromycin. Sparfloxacin was the common Fluroquinolone used. Ciprofloxacin was used in 4 cases in the subjects though low but is generally not indicated in treatment of ENT infections. Amoxicillin was used alone, and in combination with Clavulanic acid which though is low but is not a rational FDC as per WHO guidelines. The prescribed cephalosporins were cefuroxime and cefaclor in two subjects. However, our study was confined to the ENT OPD while the Pakistani and the Indian studies were carried out in different OPDs.<sup>29-30</sup> It will be difficult to compare our data with that obtained from the studies. The commonly used FDC were NSAIDS+ Decongestants 41 (53.24%), Diclofenac + Paracetamol 16 (20.77%), and Ibuprofen + Paracetamol 12 (15.58 %). These figures seem quite appropriate for an ENT OPD. However, due to different patient populations the values are not comparable. The percentage of drugs prescribed by generic name was 0% in the study which is very much less than that reported in studies conducted in Cambodia (99.8%),<sup>31</sup> India(73.4%)<sup>32</sup> and Nepal (21.3%)<sup>33</sup>. The most common reasons for not prescribing generic name in Bangladesh may be tradition, marketing of medicine in trade names and divertive drug promotion techniques of the pharmaceutical companies. In this study, pain is the commonly experienced symptom among the patients. NSAIDS used along with antiulcerent drugs. The average cost per prescription was 112 taka for 10 days duration. Our study had a number of limitations. The study was carried out over a three month period and seasonal variations in disease and prescribing patterns may not have been taken into account. One hundred and fifty patients/prescriptions were randomly selected for analysis and these may not have been representative of the patient population attending the ENT OPD during the study period. The number of medicines prescribed in the prescriptions is low. The patients' knowledge of the correct dose, proper time to take the medicine, whether the medicine is to be taken before or after food and the proper method of applying topical preparations were not ascertained. The prescribers were aware of the study and this may have influenced prescribing habits. Percentage of encounters

with an antibiotic and an injection prescribed was low. This is a welcome sign and has to be encouraged. Educational interventions to improve prescribing were tried and found effective to improve prescribing at different levels and categories of prescribers.<sup>12-14</sup> Such studies are necessary to obtain baseline data on drug use and create a database for comparison with future studies. Implementation of educational programs to change the attitude of prescribers for improving medicine utilization is the demand of present scenario. Standard Therapeutic Guidelines can be formulated for the common ENT infections and followed universally, which would promote rational use of medicines especially antimicrobials.<sup>33</sup> Nevertheless, regular prescription audit monitoring with reviewing of prescribing pattern in indoor and outdoor patients at varying time interval in a particular location, would give the feedback on the rational use of medicines.

## CONCLUSION

The mean number of drugs was low. There was no generics prescribed and efforts to encourage prescribing by generic name should be initiated. The average cost seems to be high. Percentage of encounters with antibiotic prescribed is satisfactory for the condition. This is a welcome sign and has to be encouraged.

## ACKNOWLEDGEMENTS

The authors acknowledge the Vice-Principal of Z.H. Sikder Women's Medical College & Hospital for administrative support and cooperation during survey.

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