

AN OBSERVATIONAL STUDY OF DRUG USE IN UPPER RESPIRATORY TRACT INFECTION IN PATIENTS ATTENDING ENT OUTPATIENT DEPARTMENT IN A TERTIARY CARE HOSPITAL IN KOLKATA

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ABSTRACT

Objectives: To evaluate the drug prescribing pattern in symptomatic URTI in patients attending ENT outpatient department (OPD) in R G Kar Medical College and Hospital, Kolkata.

Methods: A prospective study based on a medication utilization form, designed on the basis of WHO format. The study was conducted in ENT OPD. The study population comprised of all patients with symptomatic URTI attending ENT OPD, RGKMCH. The data were obtained from the prescribing records.

Results: A total of 300 prescriptions were audited. It was found that 63.66% were males, 24.66% belonged to the age group of 26-35 years followed by 20.66% belonging to the age group of 16-25 years. The three most common URTIs diagnosed were otitis media (41%), pharyngitis (30%), and tonsillitis (12%). 594 drugs in total were prescribed to 300 patients (1.98 drugs per prescription). Among them, 60% were generic prescriptions. Antibiotics were prescribed to 74% of patients. The average duration of treatment was 5-7 days. The most frequently prescribed antibiotic was amoxicillin and clavulanic acid (45%) followed by azithromycin (22%). Paracetamol accounted for the majority of analgesic/ antipyretic prescriptions (57%). Antihistaminics were prescribed in 37% of cases. Nasal decongestants were prescribed to 14% patients and mucolytics to 7%.

Conclusion: The study revealed lesser utilization of antibiotics, better percentage of generic prescriptions and duration of antibiotic therapy in comparison to similar studies.

Keywords: Upper respiratory tract infection, Prescribing pattern, Antibiotics.

INTRODUCTION

Upper respiratory tract infections (URTI) are very common in all age groups. They account for 20-40% of outpatient attendance in a general hospital. Pharyngitis, tonsillitis, nasopharyngitis, and otitis media constitute majority of URTIs. These are a major cause of morbidity and result in absenteeism from work. The majority of these URTIs are caused by viruses. Thus, the diseases are usually self-limiting unless complicated by acute otitis media with effusion, sinusitis, and lower respiratory tract infections. Most cases of rhinosinusitis are of viral etiology and thus do not require any antimicrobial therapy [1]. The majority of URTIs, for which antibiotics are prescribed, are presumed to be of viral etiology. Results of different surveys suggest that antibiotic prescriptions are made in approximately 40% cases of rhinopharyngitis. Variability of the antibiotic prescription is attributed to infecting organisms, antimicrobial susceptibility that differs from region to region. Other factors contributing are physician preference, local policies, costs, and lack of local guidelines [2]. Asia is a region where the problem of antibiotic resistance is very prominent. In India, almost 100% of the healthy population carries bacteria that are resistant to ampicillin, trimethoprim, nalidixic acid, and chloramphenicol [3]. If the patient is not very ill, it is better to avoid antibiotics as these are usually ineffective as well as cause potential adverse effects worse than cold symptoms. However, despite a downward trend in antibiotic prescribing activities in recent years, over prescribing still continues to be a problem [4]. Despite several years of use, little is known about how to strike a balance between safe and effective use of antibiotics as well as avoiding development of resistance. Thus, it is imperative to monitor and evaluate drug utilization patterns from around the world from time to time. This would help in suitably modifying prescribing patterns so as to increase therapeutic benefit and decrease risk of adverse drug reactions [5].

Hence, the present prospective study was aimed to evaluate drug utilization pattern of antimicrobials as well as other drugs used in URTI in patients attending ENT outpatient department (OPD) in R G Kar Medical College Hospital (RGKMCH), Kolkata.

METHODS

Place of study

The study was carried out in the OPD of ENT Department, RGKMCH, Kolkata. Interpretation of data will be done in Department of Pharmacology, RGKMCH, Kolkata.

Study design

It was a prospective study based on a medication utilization form, which has been designed on the basis of WHO format.

Ethical consideration

Necessary permission was taken from Institutional Ethics Committee.

Duration of study

Six months including data collection and analysis.

Study population

The study population comprised of all patients with symptomatic URTI attending ENT OPD, RGKMCH. Sampling was purposive. Patients belonging to all age groups were considered.

Inclusion criteria

All patients with symptomatic URTI attending ENT OPD, RGKMCH. Only fresh cases were considered.

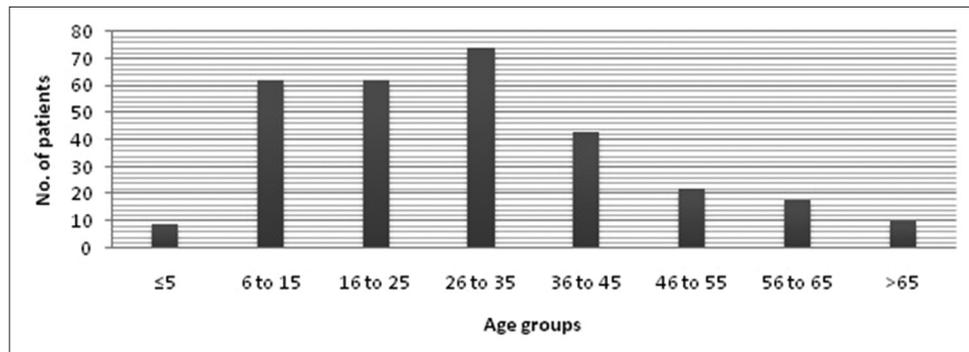


Fig. 1: Age distribution

Exclusion criteria

Follow-up cases of URTI were excluded, so were patients with complicated URTI.

Procedure

Data source

The required data were obtained from ENT surgeons' prescribing records. The prescriptions were obtained from the patients after their exit from the ENT surgeon's chamber. The investigators did not interfere with the patients' treatment assigned by the ENT surgeon.

Parameters for evaluation

The present study followed some WHO/INRUD indicators in addition to some other useful indicators. The parameters included gender distribution, average age range of patients, type of infection, average number of drugs per prescription, average number of antibiotics per prescription, total number of drugs prescribed from WHO as well as national list of essential medicines.

RESULTS

A total of 300 prescriptions were intercepted, and data noted in a period of 6 months. Among them, 171 patients were male, and 129 were female. The highest number of cases was in the age group of 26-35 years. During the study, it was found that among the 300 subjects, otitis media (41%), pharyngitis (30%), and tonsillitis (12%) were the most commonly encountered URTI (Table 1 and Fig. 1).

A total of 594 drugs prescribed to 300 patients. The mean number of drugs per prescription was 1.98. 81.9% of drugs were prescribed from National List of Essential Medicines (Table 2 and Fig. 2).

Antibiotics, analgesics/antipyretics, and antihistaminics accounted for the majority of prescribed drugs (Fig. 3).

Among the antibiotics, co-amoxiclav was most prescribed (45%) followed by azithromycin (22%), levofloxacin (9%), cefpodoxime (8%), cotrimoxazole (6%), ciprofloxacin (5%), cefuroxime (4%), and cefixime (1%) (Figs. 4 and 5).

DISCUSSION

Prescription by a doctor may be taken as a reflection of physician's attitude to the disease and role of the drug in treatment. It also provides an insight into the nature of health care delivery system [6]. The emerging problem of antibiotic resistance has become a major threat to the medical field. Excessive and inappropriate use of antibiotics has been a major contributor to this ever growing problem. The majority of URTI are caused by viruses which do not require antibiotics [7].

Demographic characteristics showed that the percentage of males suffering from URTI was more than females, which goes in accordance

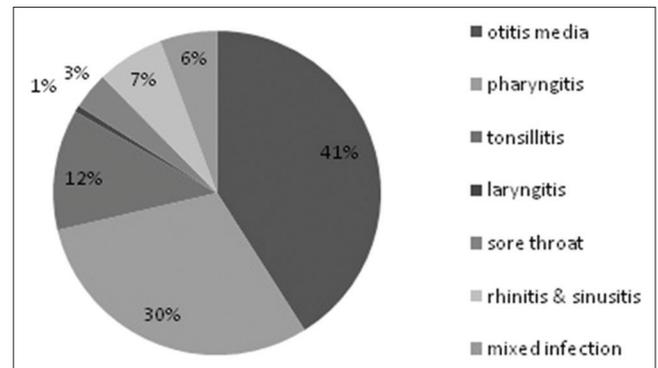


Fig. 2: Clinical diagnosis of cases

Table 1: Sex distribution

Sex	Number of cases	Percentage
Male	171	57
Female	129	43

Table 2: Prescribing indicators

Parameter	Number
Total number of prescriptions analyzed	300
Total number of drugs prescribed	594
Average number of drugs per encounter	1.98
Percentage of drugs prescribed by generic name	60%
Percentage of encounters with an antibiotic prescribed	74%
Percentage of drugs from WHO and national list of essential medicines out of the total number of drugs prescribed	56.5%, 81.9%
Percentage of encounters with an injection prescribed	0%

with some previous studies [8,9]. The majority of the patients were of the age group of 26-35 years. Few studies show majority of patients falling in other age groups [10]. Average number of drugs per prescription (1.98) observed was lesser than other similar studies [11]. The lower number of drugs noted is a welcome sign and needs to be encouraged. This increases compliance to therapy, lowers cost of treatment, and decreases risk of drug-drug interactions [12,13]. 60% of drugs were prescribed in generic, which resulted due to stringent prescribing rules laid down by the state government as well as setting up of fair price shops in tertiary care hospitals. Prescription from the essential list of medicines was significantly higher, 56.5% from WHO list and 81.9% from National List of Essential Medicines. This was largely due to the inclusion of a good number of prescribed drugs like cetirizine into the above-mentioned lists. Both these factors led to the lesser cost of therapy. Antibiotics were prescribed to 74% of patients, which is a matter of concern. It increases the cost of treatment as well as chances bacterial resistance [14].

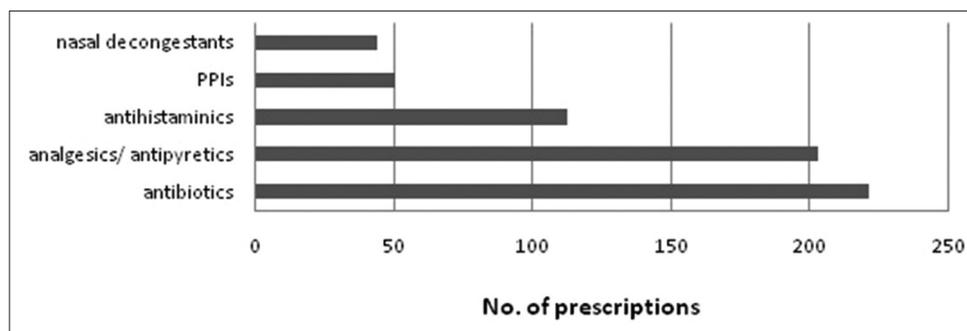


Fig. 3: Five most commonly prescribed groups of drugs

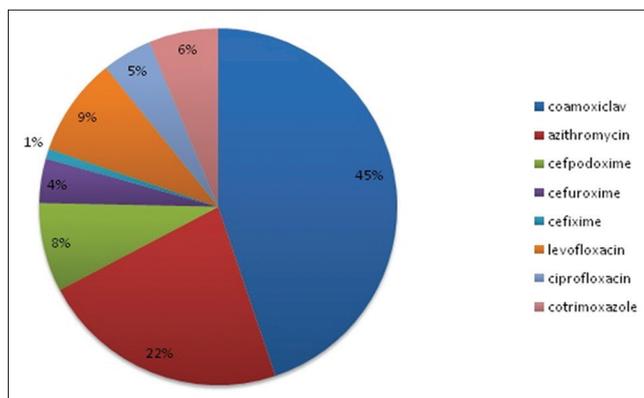


Fig. 4: Distribution of antibiotic prescription

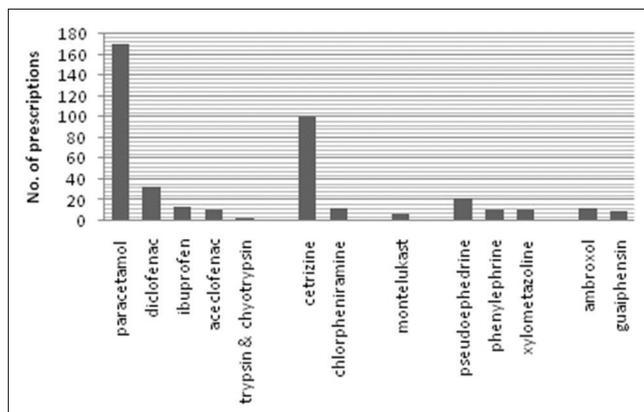


Fig. 5: Distribution of prescription of symptomatic drugs

Among the antibiotics, beta-lactams were most prescribed (45%) followed by macrolides (22%), quinolones (14%), cephalosporins (13%), and cotrimoxazole (6%). This goes in accordance with a study by Ain *et al.* [15]. However, a study in Nepal conducted by Das *et al.* reported ciprofloxacin (23.85%) was preferred, followed by amoxicillin (20.06%), a combination of ampicillin + cloxacillin (9.17%) [16]. Use of broad spectrum antibiotics should be limited to circumstances where their broad coverage is required. Else they can result in colonization of resistant organisms in the body. Furthermore, adverse effects occur relatively frequently.

Antihistaminics were prescribed to about 37% of patients although literature offers very little support for the use of antihistaminics for the common cold [17].

Irrational prescribing of drugs is a common problem among medical practitioners. One of the ways to rectify this is to conduct training

courses and workshops on pharmacotherapy and rational drug use [18].

Our study had a few limitations. Period of the study was just 6 months. Thus, only a limited number of prescriptions were audited. The study was unicentric, so the results cannot be considered representative of the population. Further, the absence of hospital antibiotic policy precluded assessing the quality of prescriptions.

CONCLUSION

The study revealed a lesser number of drugs prescribed per encounter as well as a lower rate of antibiotic prescription compared to previous studies. Higher rates of generic prescription and more drugs prescribed from essential drug list were observed.

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