

A STUDY ON THE PRESCRIBING PATTERN OF ANTIMICROBIAL DRUGS IN PATIENTS ATTENDING THE EAR, NOSE, THROAT DEPARTMENT OF A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Objective: The aim of the study is to evaluate the prescription pattern of antimicrobial drugs in the department of ear, nose, throat (ENT) of a tertiary care teaching hospital in Guwahati.

Methods: The present study was conducted in the department of ENT after getting approval from the Institutional Ethics Committee (No MC/190/2007/Pt - 11 December -18/18). It was a prospective observational study for a period of 6 months. Prescriptions were collected from the outdoor and indoor patients of ENT.

Results: In the present study, the majority of the patients were male (64.1%). Mostly, the patients belonged to the age group of 31–60 years (52%). Pharyngitis (20.8%) was the most commonly encountered disease which was reported followed by ear discharge (16.2%) and acute suppurative otitis media (15.8%). Total number of antimicrobial drugs prescribed for 240 patients was 303, amoxicillin-clavulanic acid being the most common (66%). About 89.4% of the drugs were included in the WHO Model List of Essential Medicines, 2019. Majority of the patients were prescribed only one drug.

Conclusion: The drug prescribed commonly for ENT infections was amoxicillin-clavulanic acid combination. Around 71.6% of drugs were prescribed by their brand names. Intervention is needed to promote the use of generic drugs as these drugs are with the same composition and provide the same therapeutic benefit at reasonable price.

Keywords: Ear, nose, throat infections, Antimicrobial drugs, Antimicrobial resistance.

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INTRODUCTION

The otorhinolaryngological infections are quite common in the general population, especially in the children who are more vulnerable. In adults suffering from infections of the ear, nose, and throat (ENT), they can be very serious, if proper treatment is not given within appropriate time. Mostly, the infections are caused by viruses followed by bacterial and fungal infestation as also assessed by Indurkar *et al.* [1]. The symptom manifestation can range from ear discharge, pain, fever, headache, hearing changes, running nose, nasal blockage, throat irritation, dysphagia, and so on.

Weakening of the immune system of the body due to diabetes mellitus and other immune deficiency states may predispose the person to develop these infections. Mostly, the infections of the ear, nose, and the throat resolve on their own, but at times, intervention is needed in the form of drugs.

In today's date, a variety of antimicrobial drugs are available in the pharmacies worldwide to treat these infections. However, over the recent years, it has been observed that the patients have developed resistance to most of the drugs. Antimicrobial resistance leads to higher medical costs, prolonged hospital stay, and increased mortality.

The world urgently needs to change the way it prescribes and uses antimicrobials as was also highlighted by Pradhan *et al.* [2] and Kapoor *et al.* [3]. The present study was conducted to assess the rationality in the prescription of different antimicrobial agents by the treating physicians of the department of ENT.

Even if new medications are developed, without behavior change, antibiotic resistance will remain a major concern as was discussed by Divyashanthi *et al.* [4] and Shyama *et al.* [5].

METHODS

A prospective, observational study was done for a period of 6 months from January 2019 to June 2019 in the department of ENT of a tertiary care teaching hospital in Guwahati after getting approval from the Institutional Ethics Committee (No MC/190/2007/Pt-11/December-18/18). The total number of patients case notes studied was 240. Informed consent was obtained from the patients.

The study was conducted after obtaining permission from the Institutional Ethical Committee.

Inclusion criteria

The following criteria were included in the study:

1. Patients giving informed consent.
2. Patients attending both outdoor and indoor department of ENT.

Exclusion criteria

The following criteria were excluded from the study:

1. Patients presenting with non-infectious conditions (epistaxis, malignancy, and road traffic accident).
2. Pregnant/lactating females.

Data analysis

Descriptive statistical methods in the form of graphs, pie charts, and tables were used to analyze the interpretation from the data findings using MS Word and MS Excel version 2013.

RESULTS

Prescriptions of 240 patients were analyzed during the study period.

Out of 240 patients, the number of patients belonging to <30 years of age was 75, 125 patients belonged to the age group of 31–60 years, and 40 patients belonged to the age group of 61–80 years as shown in Fig. 1.

Among the 240 cases, the most common disease presented was pharyngitis (total number of cases – 50) followed by others as shown in Table 1.

Out of the total 240 prescriptions, the total number of antimicrobials prescribed was 303. Two hundred patients were prescribed amoxicillin-clavulanic acid combination, 59 patients received fluoroquinolones, 31 patients received cefuroxime, 5 patients received clarithromycin, 1 patient received lincomycin, 2 patients received clindamycin, 2 patients received metronidazole, 1 patient received fluconazole, 1 patient received acyclovir, and 1 patient received topical mupirocin.

DISCUSSION

Drug utilization study plays an impressive role in health policy and for quality improvement.

In the present study, 240 prescriptions were studied and all details such as patient particulars, hospital number, age, sex, and name of drug along with its dose, route, duration, and frequency were noted down.

Among the 240 patients, the number of males was 154 (64.1%) and the number of females was 86 (35.8%) as shown in Fig. 2. Similar results were observed in studies done by Ain *et al.* [6].

Age distribution of patients showed that 31.25% of the patients were <30 years, 52% of the patients belonged to the age group of 31–60 years, and 16.6% patients belonged to the age group of 61–80 years.

According to the study, the most common disease presented was pharyngitis (20.8%), followed by ear discharge (16.2%), acute suppurative otitis media (15.8%), chronic suppurative otitis media (12.9%), impacted wax (10%), tonsillitis (7%), rhinitis (6.2%), sinusitis (4%), and so on. However, chronic suppurative otitis media was reported to be the most common disease in studies done by Patel *et al.* [7] and Das *et al.* [8].

Total antimicrobials prescribed for 240 patients were 303. Amoxicillin-clavulanic acid was the most common drug prescribed (66%), followed by fluoroquinolones (19.4%), cefuroxime (10.2%), and clarithromycin (1.6%) and the rest others comprised about 2.6% as shown in Fig. 3. However, fluoroquinolones were the most commonly prescribed antimicrobial drug in other studies done by Yadav *et al.* [9].

All the antimicrobials administered were of the proper dose and frequency and duration of administration were adequate as shown in Table 2.

The percentage of oral antimicrobials prescribed was 79.2% and the rest 20.7% were given by the topical route.

Around 89.4% of antimicrobial drugs administered was included in the WHO Model List of Essential Medicines, 2019 [10,11].

Out of 240 patients, the average number of antimicrobial drugs prescribed per prescription was one in 85.4% of patients, whereas the rest 14.5% of the patients were administered more than 1 antimicrobial drug as compared to the study done by Kshirsagar *et al.* [12].

Hence, the administration of antimicrobial drugs was rational and polypharmacy was not observed.

About 71.6% of the drugs were prescribed in their brand form and 28.3% of drugs belonged to the generic formulation similar to the study done by Padwal *et al.* [13].

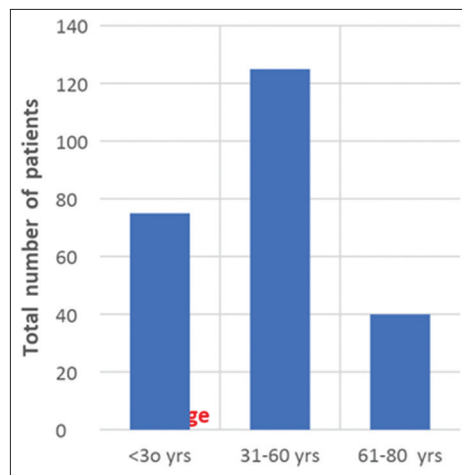


Fig. 1: Age distribution of patients

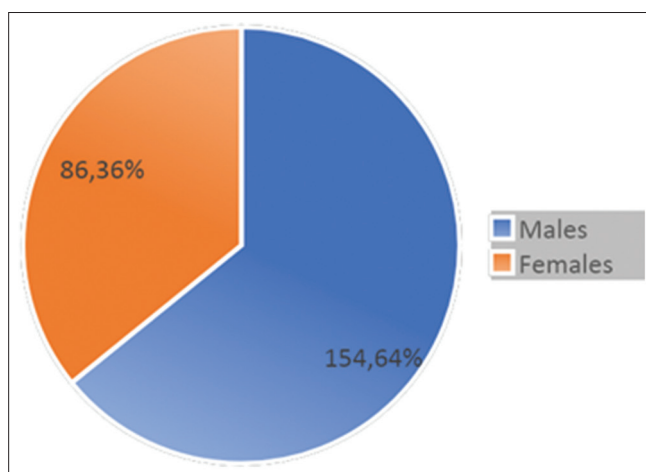


Fig. 2: Showing the gender wise distribution of patients

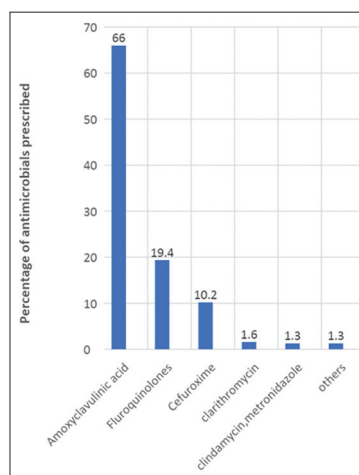


Fig. 3: The percentage of different antimicrobials prescribed

Other medications which were prescribed apart from antimicrobials were hydrogen peroxide gargle, betadine gargle for pharyngitis/ tonsillitis, and diclofenac/aceclofenac for pain relief. Antiallergics such as fexofenadine and mucolytics were also prescribed for seasonal allergies [14].

Table 1: The prevalence of ear, nose and throat diseases

Sl. No.	Disease	Number of cases
1.	Pharyngitis	50
2.	Ear discharge	39
3.	ASOM	38
4.	CSOM	31
5.	Impacted wax	24
6.	Tonsillitis and adenoid hypertrophy	17
7.	Rhinitis	15
8.	Sinusitis	10
9.	Nasal polyp	5
10.	Otitis externa	4
11.	Sialoadenitis	3
12.	Oral cavity ulcer and mucositis	2
13.	Otomycosis	1
14.	Herpetic labialis	1
Total		240

ASOM: Acute suppurative otitis media, CSOM: Chronic suppurative otitis media

Table 2: Table showing the dose, duration and frequency of the commonly prescribed antimicrobials (in adults)

Sl. No.	Drug	Dose/ conc	Duration	Frequency
1.	Tablet amoxicillin-clavulanic acid	625 mg	5 days	TDS
2.	Ofloxacin ear drops	0.3%	7 days	BD
3.	Ciprofloxacin ear drops	4 drops	7 days	BD
4.	Tablet cefuroxime	500 mg	5 days	BD
5.	Tablet clarithromycin	500 mg	7 days	Once daily

TDS: Thrice daily, BD: Twice daily

CONCLUSION

In our study, the most common ENT disease reported was pharyngitis.

Amoxicillin-clavulanic acid which is a penicillin antibiotic was the most commonly prescribed antimicrobial drug for ENT infections followed by fluoroquinolones. Rational use of drugs was observed. The use of generic medicines is recommended as they are cost effective and will increase patient compliance as was also highlighted in other studies done by Erwin *et al.* [15] and Krishnaswamy *et al.* [16].

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AUTHORS' CONTRIBUTIONS

All the authors contributed to the design and implementation of the research.

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