

## Original Research Article

# Drug utilization pattern in ENT OPD of government tertiary care teaching hospital in Raigarh

Kishore Kumar Y.<sup>1\*</sup>, Chakrapani Cheekavolu<sup>2</sup>, G. Obulesu<sup>3</sup>

<sup>1</sup>Department of ENT, LSLAM Government Medical College and Hospital, Raigarh, Chhattisgarh, India

<sup>2</sup>Department of Pharmacology, <sup>3</sup>Department of Microbiology, Kerala Medical College Hospital, Mangode, Palakkad, Kerala, India

**Received:** 22 May 2017

**Accepted:** 23 June 2017

### \*Correspondence:

Dr. Kishore Kumar Y,

E-mail: [ykishoreent@gmail.com](mailto:ykishoreent@gmail.com)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

**Background:** The prospective, observational study was designed to assess the prescribing pattern of drug usage in ENT outpatient department in various diseases conditions.

**Methods:** Medication utilization Form has been designed based on a WHO format. The patient's details including patient particulars, diagnosis, investigations, drug details and information regarding the indication for prescribing agents.

**Results:** Total 200 prescriptions were analysed, 70% were males and 30 % were females, respectively. The most common disease reported was CSOM in 31 (15.5 %) patients followed by otitis externa 25 (12.5%), pharyngitis 21 (10.5%), URTI patients 20 (10.0%). Antibiotics used were: amoxicillin-clavulanate 200 (57.3%), cefixime 37 (10.6%), levofloxacin 34 (9.74%), cefixime clavulanate 30 (8.59%), cefuroxime 13 (3.72%). The most commonly used NSAID are diclofenac and paracetamol.

**Conclusions:** Prescribing pattern of usage of antibiotics are more compared to other drugs, amoxicillin with clavulanic acid are most commonly prescribed antibiotics in various ENT diseases, usage of brand name are higher than the generic name.

**Keywords:** Antibiotic, Drug utilization, ENT

## INTRODUCTION

Disease of the ear, nose and throat (ENT) is very common problems in adults and children will cause impairment of routine life. It was observed increased global population that, hearing loss is very common especially in children due to upper respiratory tract infections (URTIs). The world health organization (2004) estimated that respiratory infections 94.6 disability adjusted life years lost worldwide.<sup>1,2</sup> The commonly used drugs for the URTI are antibiotics like amoxicillin, amoxicillin+clavulanic acid, cefixime, cefuroxime.<sup>3</sup> The different surveys were showing that antibiotic prescriptions are made in approximately 40% of all

consultations for rhino pharyngitis and in 80% of acute bronchitis.<sup>4</sup> It is very important to analyse and monitor the prescribing patterns of drug used time to time, the basic drug modification in prescribing pattern to improve the therapeutic value and reduces the side effects. These types of studies will help full for medical professionals to prescribing pattern of antibiotic rationally and therefore are extreme needed. Here the present demonstration has been designed to express the usage of antibiotic in ENT department of LSLAM government medical college and hospital, Raigarh, Chhattisgarh, India Based on the study results appropriate interventions at the level of the physician and the Institute can be planned to promote rational use of drugs in our set up.

## METHODS

The prospective, observational study was conducted in 200 patients who visited the OPD of ENT department of LSLAM government medical college and hospital, Raigarh, Chhattisgarh, India in the period of January 2016 to December 2016 after obtaining approval from the institutional ethics committee and medication utilization form has been designed based on a WHO format. The patient's details including patient particulars, diagnosis, investigations, drug details and information regarding the indication for prescribing agents (both topical and oral). The information was compiled and analyzed in consultation with ENT specialist.

### Inclusion criteria

Inclusion criteria of present study were: patient attending ENT OPD and giving consent to participate in the study.

### Exclusion criteria

Patient who were seriously sick (emergency) and IPD patients. Who prescribes indicators:

- Average number of drug prescribed per patient
- Percentage of encounters with an antibiotic prescribed
- Percentage of encounters injection
- Percentage of drugs prescribed by generic name

- Percentage of drug from essential drug list.

## RESULTS

The study was conducted the period of 12 months, based on inclusion and exclusion criteria specified, a total of 200 prescriptions were studied out of 200 patients, 70% were males and 30 % were females, respectively.

Highest number of patients was in the age group of 15-25 years followed by the age group of 5-15 years and 25-30 years (Table 1).

The present study observed that, the most common disease reported was CSOM in 31 (15.5%) patients followed by otitis externa 25 (12.5%) patients, pharyngitis patients 21 (10.5%), URTI patients 20 (10.0%) as in Table 2.

Antibiotics used in present study as follows amoxicillin-clavulanate 200 (57.3%) patients followed by cefixime 37 (10.6%), levofloxacin 34 (9.74%), cefixime clavulanate 30 (8.59%), cefuroxime 13 (3.72%) patients and remaining drugs usage was less (Table 3). The other than the antibiotics, the most common drugs used was a phenylephrine, paracetamol, levocetirizine, mucolyte, diclofenac, multivitamin. The most common NSAID used was diclofenac and paracetamol and antibiotic was amoxicillin-clavulanate.

**Table 1: Pattern of data of ENT patients.**

Parameters	Results
Total no. of sample	200
Total no. of OPD sample	200
Age group	5-30 years
<b>Gender distribution</b>	
Male	70%
Female	30%
<b>Diagnosis</b>	
Ear disease	105
Nose and throat disease	95
Total drug prescribed	700
Average drugs/prescription	3.30
Total antibiotic prescribed	349
Average antibiotic/prescription	1.68
No. of topical antibiotic prescribed	91
Poly-pharmacy practice	30%
Injectable prescribed	5%
Commonly prescribed antibiotic in present study	Amoxicillin+clavulanic Acid
Antibiotic prescribed from essential drug list (WHO)	74%
Encounters with brand names	100%
No of other concomitant medication prescribed	302
Common concomitant medication prescribed (other than antibiotic)	Phenylephrine+paracetamol+levocetirizine combination, mucolyte, diclofenac, multivitamin

**Table 2: Patient disease profile.**

Diagnosis	Male patients	Female patients	Total (%)
Otitis externa	13	12	25 (12.5)
Tonsillitis	10	09	19 (9.5)
Vestibulitis	05	06	11 (5.5)
ASOM	07	08	15 (7.5)
Candidiasis	05	00	05 (2.5)
Furunculosis	10	09	19 (9.5)
Otomycosis	09	08	17 (8.5)
Sinusitis	08	09	17 (8.5)
CSOM	16	15	31 (15.5)
Pharyngitis	11	10	21 (10.5)
URTI	11	09	20 (10.0)
<b>Total</b>	<b>105</b>	<b>95</b>	<b>200 (100)</b>

ASOM: Acute suppurative otitis media, CSOM: Chronic suppurative otitis media, URTI: Upper respiratory tract infection.

**Table 3: Antibiotics used present study.**

Drug class	Antibiotics	Number	Percentage (%)
<b>Beta-lactams</b>	Amoxicillin-clavulanate	200	57.3
	Amoxicillin-dicloxacillin	4	1.14
	Cefixime	37	10.6
	Cefixime-clavulanate	30	8.59
	Cefodoxime-clavulanate	2	0.57
	Cefuroxime	13	3.72
	Cefpirome	3	0.85
<b>Fluoroquinolones</b>	Levofloxacin	34	9.74
	Ciprofloxacin	5	1.43
	Ofloxacin	4	1.14
	Ornidazole/ofloxacin	3	0.85
<b>Lincosamides</b>	Azithromycin	5	1.43
<b>Macrolides</b>	Clindamycin	4	1.14
<b>Antifungals</b>	Clotrimazole	3	0.85
	Fluconazole	2	0.57
<b>Total</b>		<b>349</b>	<b>100</b>

## DISCUSSION

The Drug prescribing in ENT practice, the therapeutic approach for ENT infections is empirical. The present study reveals that the general trends of prescribing pattern of antibiotic in the OPD of ENT department. A total number of 200 patient prescriptions were analysed and the demographic data showed that percentage of males suffering from ENT infections was more than females. Earlier study findings were also reported that the higher percentage of males suffering from ENT infections.<sup>5,7</sup> In the present study, we are demonstrated and analysed out of 200 patients, total number of drugs prescribed was 700 and total antibiotics were 349. Average number of drugs per prescription was 3.30 and average antibiotic prescribed per prescription was 1.66. 258 antibiotics were prescribed by oral route and topical route prescribed by 91. In a similar study reported antimicrobial agents prescribed in outpatient services of ENT department.<sup>6,7</sup> In the present study, male patients were encountered more

compared to females. In contrast, another study reveals that, female patients are suffering from ENT infection were more than their male counterparts.<sup>8</sup> The maximum ENT infections are more prevalent in young adults in the age group of 15-30 years and similar finding were reported in previous studies.<sup>7,9</sup> Macrolides, antifungals, and lincosamides are least commonly used drugs in present study and this was accordance with who was earlier found of most common class of agents used were beta-lactams, followed by quinolones.<sup>7</sup> We have found that the therapy given was based on clinical knowledge and experience and was empirical, but rational in accordance with the literature available. An average number of drugs per prescription are an important finding for assessing rationality. Hence, it is necessary to keep the mean number of drugs per prescription as low as possible to reduce the risk of drug interactions, development of bacterial resistance and cost of drugs per prescription.<sup>10-12</sup> The present study analysed that to

improvement is required in the prescribing patterns of ENT diseases to depreciate use of drugs. It was found that maximum of the drugs were prescribed in their brand names, highlighting physicians' trust over brand names despite knowing the low cost of generic drugs. Usage of generic drugs is helpful to decreasing the cost of therapy and avoiding medication errors.

## CONCLUSION

Present study reveals that usage of antibiotics are maximum compared to other drugs, amoxicillin with clavulanic acid is the most commonly prescribed antibiotics for various acute and chronic ENT infections, usage of brand name are more than the generic name.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

## REFERENCES

1. Khan FA, Nizamuddin S, Salman MT. Patterns of prescriptions of the antimicrobial agents in the department of otorhinolaryngology in a tertiary care teaching hospital. *Af J Pharm Pharmacol.* (2011);5(14):1732-8.
2. Grace NN, Bussmann RW. Traditional management of ear, nose and throat (ENT) diseases in Central Kenya. *J Ethnobiol Ethnomed.* 2006;2:54.
3. Ramachandra K, Sanji N, Somashekhar HS, Acharya A, Sager JK. Trends in prescribing antimicrobials in tertiary hospital for upper respiratory tract infection. *Int J Pharmacol Clin Sci.* 2012;1:15-8.
4. Needham A, Brown M, Freeborn S. Introduction and audit of general practice antibiotic formulary. *J R Coll Gen Pract.* 1988;38:166-7.
5. Sivakumar P, Razak TA, Perumal P. Drug utilization of antimicrobial in ENT patients. *Asian J Pharmaceu Clin Res.* 2011;4(1):22-3.
6. Das BP, Seth A, Rauniyar GP, Sharma SK. Antimicrobial utilization pattern in outpatient services of ENT department of tertiary care hospital of Eastern Nepal. *Kathmandu University Med J.* 2005;3(12):370-5.
7. Ain MR, Shahzad N, Aqil M, Alam MS, Khanam R. Drug utilization pattern of antibacterial used in ear, nose and throat outpatient and inpatient departments of a university hospital at New Delhi, India. *J. Pharm Bioallied Sci.* 2010;2(1):8-12.
8. Naik HG, Khanwelkar CC, Kolar A, Desai R, Gidamudi S. Drug utilization study on antibiotics use in the upper respiratory tract infection. *Int J Recent Trends Sci Technol.* 2014;10(2):299-302.
9. Khan FA, Nizamuddin S. Drug utilization patterns of antimicrobial agents in the outpatients department Of ENT in a tertiary care teaching hospital of North India. *JAPHR.* 2011;1(2):22-30.
10. Nies SA. Principles of therapeutics. In: Gilman GA, Rall WT, Nies SA, Taylor P, eds. *The pharmacological basis of therapeutics.* 8th ed. New York; Pergamon Press; 1990: 62-83.
11. Atanasova I, Terziivanov D. Investigations on antibiotics in a hospital for a one-year period. *Int J Clin Pharm Ther.* 1995;33:32-3.
12. Till B, Williams L, Oliver SP, Pollans PI. A survey of inpatient antibiotic use in a teaching hospital. *S Afr Med J.* 1991;8:7-10.

**Cite this article as:** Kishore Kumar Y, Cheekavolu C, Obulesu G. Drug utilization pattern in Ent OPD of government tertiary care teaching hospital in Raigarh. *Int J Otorhinolaryngol Head Neck Surg* 2017;3:1042-5.