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PRESCRIPTION PATTERN OF ANTIBIOTICS IN INPATIENTS OF THE OTORHINOLARYNGOLOGY (ENT) DEPARTMENT AT THE TERTIARY CARE HOSPITAL

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ABSTRACT

Aim: The aim of our study is to assess the prescription pattern in patients treated with antibiotics in the inpatient department of E.N.T. **Objective**: To study the prescription pattern of antibiotics used in the patients admitted to the inpatient ward of E.N.T Department of Mandya Institute of Medical Sciences. **Methodology**: This was a Record based Prospective study conducted at the department of E.N.T at MIMS. Data was collected from 100 patients under the inclusion criteria. The patients case records, medication charts were used as a source of data collection. A well designed patient data collection form was used for collecting the details. The information were documented and subjected to suitable statistical methods. **Result:** Total 100 prescriptions who were treated with antibiotics were collected. Male 53% and Female 47%. About 17 different antibiotics were prescribed for the 100 patients who were under the study criteria. The drugs used were Ceftriaxone, Amoxicillin + Clavulanic acid, Amikacin, Metronidazole, Cefotaxime, Ciprofloxacin, Mupirocin, Cefixime, Piperacillin, Clarithromycin, Linezolid, Fluconazole, Neomycin + Clotrimazole, Cefpodoxime, Polymyxin-B, Cefperazone Sulbactam, Silver Sulfadiazine. **Conclusion**: Our study concludes that antibiotics were mostly prescribed in males (53%) than females (47%) and mostly prescribed in the age group between 19-60 years.

INTRODUCTION

Infections of the ear, nose, and throat (E.N.T) are common clinical problems occurring in the General Population.

These diseases may vary from trivial common cold to more complicated suppurative otitis media and its complications. ENT diseases affect all the age groups ranging from children to adults with significant disability-adjusted life-year (DALY) of patient.[2] Diseases of the ear, nose and throat (ENT) affect the functioning of adults as well as children, often with significant morbidity causing impairment of routine life of affected patients. It has been envisaged that with increase in global population, infections remain the most important cause of disease, with upper respiratory tract infections (URTIs) causing hearing loss especially in children. In its World Health Report of 2004, the World Health Organization (WHO 2004) estimated that respiratory infections generated 94.6 disability adjusted life years lost worldwide and were the fourth major cause of mortality, responsible for 4 million deaths or 6.9% of global number of deaths in 2002.[3]

The ears, nose, and throat are adjacent to one another anatomically, similar in histological structure and subject to many of the same diseases.[4] Diseases, injuries, and abnormalities of the ear, nose, and throat (ENT) are the special field of the otorhino - laryngologist.[5] The knowledge of the ear, nose, throat, head and neck diseases is very important because of the type of morbidities which they cause due to impairment of the inherent physiologic functions that usually take place in the head and neck region. These include problems of hearing, breathing, swallowing, phonation, speech, olfaction, taste, protection of the lower respiratory tract and clearance of secretions. Aesthetic problem of the face and psychological problem may occur in neoplasm and neurologic diseases of the head and neck region. In some situations, these morbidities may lead to social embarrassment, occupational, school and economic losses in the community.[6]

ENT infections including non-specific upper respiratory tract infection (URTI), acute bronchitis, sinusitis, and otitis media(OM) are the most common reasons for individuals to seek treatment in the United States and account for up to 75% of all antibiotic use.[7] An upper respiratory infection (URI) is a viral or bacterial infection that affects the nose, throat (pharynx), sinuses, and voice box (larynx) the most familiar upper respiratory infections include the common cold (rhinopharyngitis), infection of the throat (pharyngitis), tonsils (tonsillitis), the maxillary sinuses behind the nose (sinusitis), and the larynx (laryngitis).

Ear infections (acute otitis media) are another manifestation of URI (upper respiratory infection). Mainly ear pain, fullness in ear, hearing loss, ringing in the ears, discharge, nausea, vomiting and vertigo are the symptoms of ear infections. Some others ear diseases are

otitis media with effusion and fluid buildup in the middle ear and chronic suppurative otitis media, a persistent ear infection resulting in tearing or perforation of the eardrum.[8] Ear infections are most common among young children as they have short and narrow Eustachian tube.[9] It can be acute or chronic. Most commonly occurred ear infection is otitis media and otitis externa.

Sinusitis is a common illness of pediatric age group, which can lead to serious complications.[10] Sinus infection is the mostly common disease of nose. Teeny holes that connect nasal passage to sinuses get blocked and causing growth of microorganisms leads to sinus infection.[11] Otitis-media, which is now known to be the most common childhood infection, leads annually to the death of over 50,000 children under 5 years.[12] In other cases nasal conditions may be distressing, as in the case of nasal myiasis/maggots in the nose.[13]

The majority of the antibiotics were prescribed for respiratory and ENT infections with a presumed viral etiology, such as rhino-pharyngitis and acute bronchitis. The results of the different surveys were in agreement showing that antibiotic prescriptions are made in approximately 40% of all consultations for rhino-pharyngitis and in 80% of those for acute bronchitis.[14]

Methods

Record Based Prospective Study. Diseases of the ear, nose and throat (ENT) affect the functioning of adults as well as children, often with significant impairment of the daily life of affected patients. They are a major source of morbidity and absenteeism at work. The vast majority of acute URTIs are caused by viruses.

Details from 100 patients were collected using specially designed case report form to evaluate it. The parameters noted were: Demographic details, Present complaints, and Present history and Medication history etc. Study design was Record Based Prospective Study.

Analysis: Data will be entered in Microsoft Excel and analyzed using Epi-info software. Descriptive statistics like mean, median, percentage, confidence interval will be calculated for univariate analysis. T test and Chi square test will be used for bi variate analysis.

RESULTS

This study was conducted in E.N.T Department of MIMS Teaching Hospital, Mandya. A total of 100 patients admitted in E.N.T department of MIMS Teaching Hospital were enrolled

in the study based on inclusion criteria. The required details from the patient case sheet were recorded in a suitably designed CRF. The patients were categorized based on Age, Gender, symptoms, route of administration and antibiotic prescription. The mean age and standard deviation of the study population was calculated.

Patient Distribution Based on Gender

The case sheet data of 100 patients were analyzed in the current study, out of which 53 were males (53%) and 47 were female (47%).

Table 1: Patient distribution based on gender.

Gender	No. Of patients	Percentage (%)
Male	53	53%
Female	47	47%

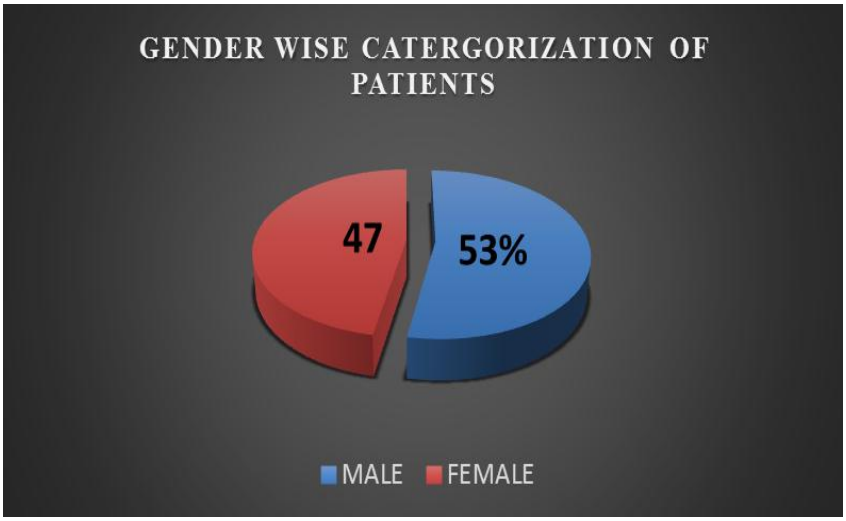

Figure 1: Patient distribution based on gender.

Patient Distribution Based On Age

Among them 23 (23%) belonged to the age group of 3-12 years, 17 (17%) belonged to the age group of 13-18 years, 45 (45%) belonged to the age group of 19-60, and 15 (15%) belonged to the age group of 60 above.

Table 2: Patient distribution based on age.

Age group	No. Of patients	Percentage of Patients (%)
3-12	23	23
13-18	17	17
19-60	45	45
>60	15	15

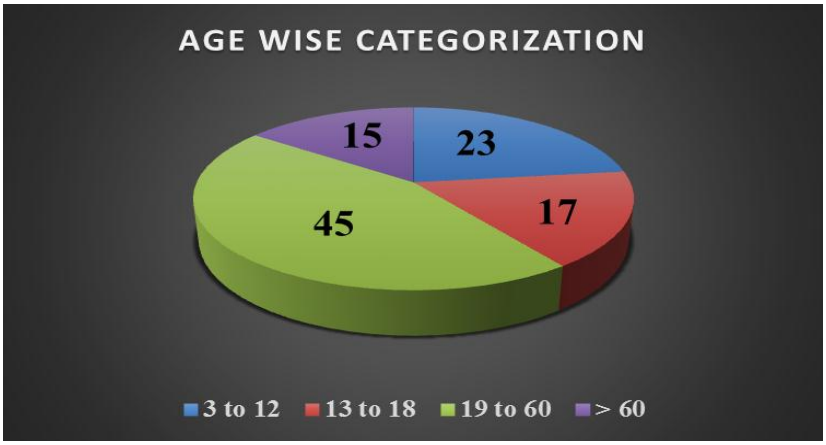

Figure 2: Patient distribution based on age.

Patient Distribution Based On Age In Males And Females

Among the total of 53 male patients in the study, 11 belonged to the age group of 3-12 years, 11 belonged to the age group of 13-18 years, 18 belonged to the age group of 19-60 years, and 13 belonged to the age group of > 60 years which accounted for 11, 11, 18 and 13% of the total study population respectively. Unlike the male study population who belonged to the 4 age groups, the total of 47 female patients in the study fell into the age groups of 3-12 (12), 13-18 (6), 19-60 (27) and >60 (2) and it accounted for 12, 6, 27 and 2% of the total study population gives the distribution of male and female patients based on age respectively.

Table 3: Patient distribution based on age in males and females.

Age group	No. Of male patients	No of female patients
3-12	11	12
13-18	11	6
19-60	18	27
>60	13	2

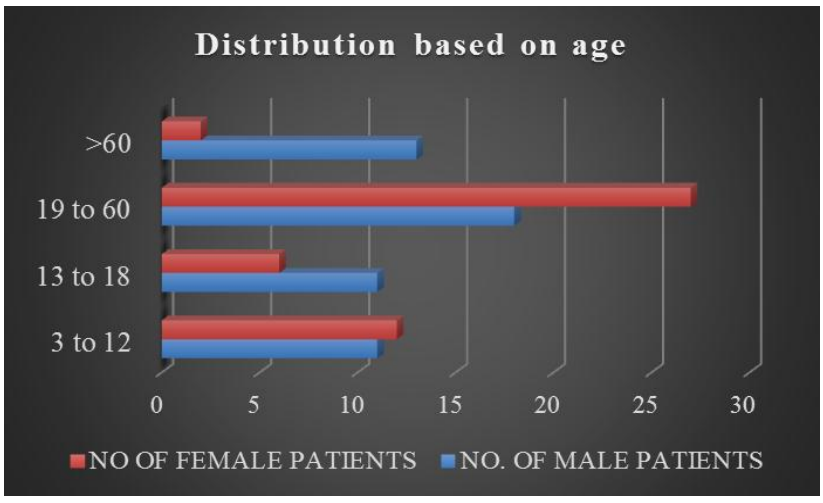

Figure 3: Patient distribution based on age in males and females.

Patient Distribution Based On Symptoms

When the patients symptoms were analyzed, 36 suffered from throat pain, 22 had difficulty in swallowing, 21 has swelling, 15 had fever, 14 had difficulty in breathing, 13 had ear pain, 12 had discharge from ear, 9 had nasal obstruction, 7 had cold/sore throat, 7 had headache, 6 had nostril pain, 5 had cough, 4 had nasal discharge, 3 had bleeding from nose, 3 had tinnitus, 3 had unconsciousness, 3 had hearing problems, 2 had snoring/mouth breathing, 2 had difficulty in talking/speaking/pronunciation.

Table 4: Patient distribution based on symptoms.

Symptoms	No. Of patients	Percentage of patients
Throat pain	36	19.25
Difficulty in swallowing	22	11.76
Swelling	21	11.22
Fever	15	8.02
Difficulty in breathing	14	7.48
Ear pain	13	6.95
Discharge from ears	12	6.41
Nasal obstruction	9	4.81
Cold/sore throat	7	3.74
Headache	7	3.74
Nostril pain	6	3.20
Cough	5	2.67
Nasal discharge	4	2.13
Bleeding from nose	3	1.60
Tinnitus	3	1.60
Unconsciousness	3	1.60
Hearing problems	3	1.60
Snoring/mouth breathing	2	1.06
Difficulty in talking/speaking/pronunciation	2	1.06

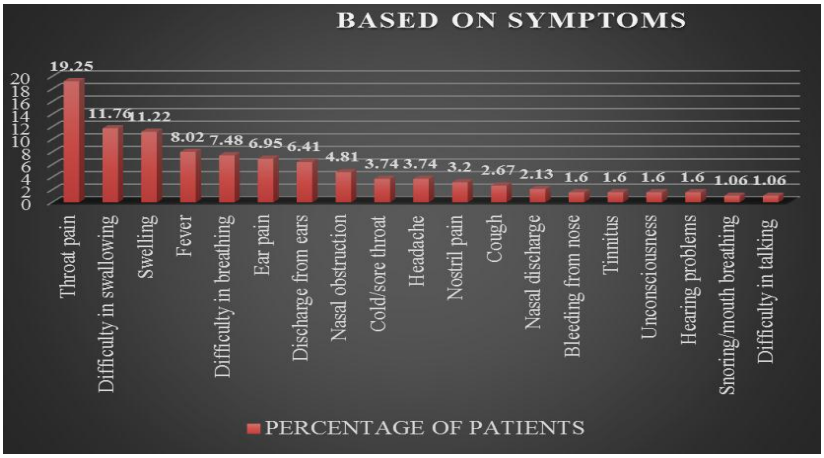

Figure 4: Patient distribution based on symptoms.

The Division of Cases Based on Ear Nose Throat

EAR : 20

NOSE : 19

THROAT : 61

Table 5: Patient distribution based on ear nose throat.

E.n.t category	Male	Female
Ear	12	8
Nose	12	7
Throat	29	32

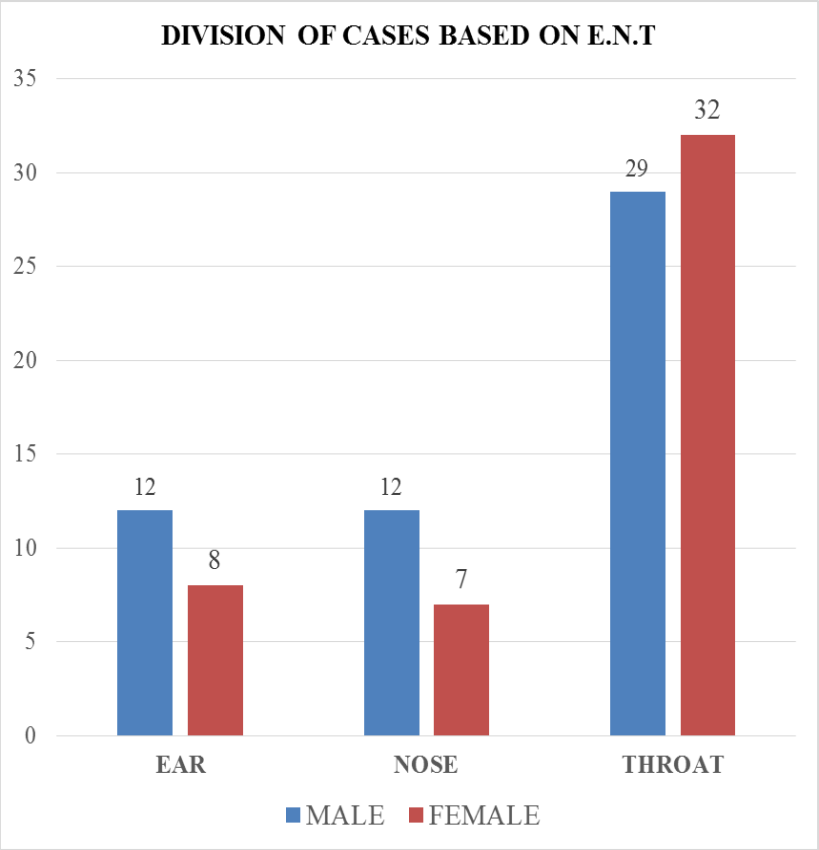

Figure 5: Patient distribution based on ear nose throat.

Based on Route of Antibiotics Prescribed

Among the 100 prescriptions, it has been seen that prescriptions contained different routes of antibiotic prescription. The antibiotics were mainly prescribed by intravenous route, Oral route, topical route and by drops (Ear and Nasal drops).

Table 6: Patient distribution based on route of antibiotics prescribed.

Name of the drug	Intravenous	Post oral	Topical	Drops
Ceftriaxone	84	-	-	-
Amoxicillin + Clavulanic acid	-	54	-	-
Amikacin	24	-	-	-
Metronidazole	20	-	-	-
Cefotaxime	10	-	-	-
Ciprofloxacin	-	4	-	5
Mupirocin	-	-	6	-
Cefixime	-	5	-	-
Piperacillin	4	-	-	-
Clarithromycin	-	3	-	-
Linezolid	-	3	-	-
Fluconazole	-	2	-	-
Neomycin + Clotrimazole	-	-	2	-
Cefpodoxime	-	1	-	-
Polymyxin-B	1	-	-	-
Cefperazone Sulbactam	1	-	-	-
Silver Sulfadiazine	-	-	1	-

CONCLUSION

Our study concludes that the prescription of antibiotics were mostly seen in the male population and in the age group in which it was mostly used, was the patients classified into the age group of 19-60 years and it's least use was recorded in the age group of >60 years. Unlike the number of males and females in the total study population, the age group 19-60 contained more female patients whereas the age group >60 contained more male patients. The patients presented the complaints, where 36 suffered from throat pain, 22 had difficulty in swallowing, 21 has swelling, 15 had fever, 14 had difficulty in breathing, 13 had ear pain, 12 had discharge from ear, 9 had nasal obstruction, 7 had cold/sore throat, 7 had headache, 6 had nostril pain, 5 had cough, 4 had nasal discharge, 3 had bleeding from nose, 3 had tinnitus, 3 had unconsciousness, 3 had hearing problems, 2 had snoring/mouth breathing, 2 had difficulty in talking/speaking/pronunciation.

REFERENCES

1. Guru Prasad N.B, Kulkarni Dhananjay, Rajasekhar C.H, Rajesh D, Raghavendra A.Y, Vinodraj K, et al. A study of prescription pattern of antimicrobial usage in ear, nose and throat infections of a rural teaching hospital. Journal of Evolution of Medical and Dental Sciences, Nov, 2014; 13407-13414.
2. Sudhir L Padwal, Madhuri D Kulkarni, Vinod S Deshmukh, Jyoti R Patil, Swapnil S Jadhav, Asha D Jadhav. Drug use pattern in the ear, nose, throat outpatient department of

a rural tertiary-care teaching hospital. Department of Pharmacology, SRTR Govt. Medical College, Ambajogai, District Beed, Maharashtra, India.

3. African Journal of Pharmacy and Pharmacology, 15 October, 2011; 5(14): 1732-1738, Available online at http://www.academicjournals.org/AJPP DOI: 10.5897/AJPP11.451 ISSN 1996-0816 ©2011 Academic Journals. Patterns of prescription of antimicrobial agents in the Department of Otorhinolaryngology in a tertiary care teaching hospital Farhan Ahmad Khan1*, Sheikh Nizamuddin2 and Mohammad Tariq Salman3.
4. Human Journals Research Article July 2018; 12. Issue:4 © All rights are reserved by Mathew George et al. Analysis of Drug Utilization Pattern of ENT Infections in Paediatric Patients.
5. Diseases of the Ear, Nose, and Throat, 9: 127-139.
6. An audit of Ear, Nose and Throat diseases in a tertiary health institution in South- western Nigeria. Ayotunde James Fasunla1, &, Musa Samdi1, Onyekwere George Nwaorgu1.
7. http://dx.doi.org/10.18203/2319-2003.ijbcp20150373. Bhat GMN, Holla R, Kamath PSD. A study of prescription pattern in the drug therapy of ear, nose and throat infections at a tertiary care hospital in Mangalore. Int J Basic Clin Pharmacol, 2015; 4: 686-9.
8. Begum MM, Uddin MS, Rahman MS, Nure MA, Saha RR, Begum T, et al. Analysis of prescription pattern of antibiotic drugs on patients suffering from ENT infection within Dhaka Metropolis, Bangladesh. Int J Basic Clin Pharmacology, 2017; 6: 257-64.
9. Ear infections-Healthline.2017 www.entearinfections%27s%healthline.com
10. Paediatric-sinusitis.2017 www.ent/stu2/sinusitis%31d%healthline.com
11. Lunde PKM, Baksaas I. Epidemiology of Drug Utilization-Basic Concepts and Methodology. Acta Medica Scandinavica, 1987; 222: 7-11.
12. Rovers MM, de Kok IMCM, Schilder AGM: Risk factors for otitis media:. International Journal of Paediatric Otorhinolaryngology, 2006; 70: 1251-1256.
13. Kuruvilla G, Albert RRA, Anand J, Ranjith VT, Selvakumar P: Pneu- mocephalus: a rare complication of Journal of Ethnobiology and Ethnomedicine, 2006, 2: 54 http://www.ethnobiomed.com/content/2/1/54
14. Needham A, Brown M, Freeborn S. Introduction and audit of general practice antibiotic formulary. J R Coll Gen Pract, 1988; 38: 166–7. [PMC free article] [PubMed]