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Original Research Article

Retrospective Hospital Data Based Study on Acute Otitis Media: A Tertiary Care Centre Experience

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ABSTRACT

Background: Acute otitis media (AOM) falls under the spectrum of Otitis media which is an inflammatory condition of the middle ear. Middle ear diseases have a significant burden on our health system and poses as an important cause of morbidity especially in the paediatric population. The Eustachian tube (ET) connects middle ear and nasopharynx and plays an important role in fluid drainage from middle ear as well as in maintaining middle ear pressure. Dysfunction in the ET, either anatomical or physiological causes AOM. Patients may present with a wide spectrum of symptomatology which maybe localised or both localised and systemic symptoms and signs. The study was done to see the prevalence and the pattern of distribution of AOM with respect to age, sex, presenting complaints and laterality in patients attending ENT OPD, NMCH, Nagaon.

Methods: This was a 2 years hospital based retrospective cross-sectional study conducted over 268 patients attending the Department of ENT at Nagaon Medical College Hospital, Nagaon and diagnosed as a case of Acute Otitis Media.

Results: Most patients with AOM belonged to the age group within 15 years (38.3%). 51.1% patients were male while 48.9% were female with Male: female ratio being 1.04:1. Earache was the commonest symptom which was seen in 79.5% cases followed by fever (73.5%) and hearing impairment 38.4%. AOM was more common in winter season in our study (38.4%) as compared to rainy and summer seasons. Maximum cases presented were unilateral (81.3%) compared to cases presenting in both ears (18.7%). Most of the patients presented with congested tympanic membrane (60.1%) while 14.9% presented with perforation of tympanic membrane.

Conclusion: AOM is a common middle ear disorder and an important health concern causing significant morbidity in all age groups. The major risk factors that contribute to the prevalence of AOM are sub- standard living conditions, overcrowding, exposure to smoke, and limited access to medical care. Hence early education on risk factors, diagnosis and management may reduce the disease burden of AOM, thus preventing hearing loss.

Keywords: Acute Otitis Media, Eustachian Tube, Earache, Hearing Impairment.

INTRODUCTION

Middle ear diseases have a significant burden on our health system and a major public health problem in context of developing countries in case of paediatric population.[1] Middle ear diseases are spectrum of diseases which includes acute otitis media (AOM), chronic suppurative otitis media (CSOM), and otitis media with effusion (OME).[2]

Acute otitis media (AOM) is defined as "the rapid onset of signs and symptoms of inflammation in the middle ear". A patient who has repeated episodes of AOM on three separate occasions in a period of the last 6 months or four or more occasions in the last 12 months is defined as a case of Recurrent otitis media.[3] Acute otitis media is most commonly seen in the age group of 6 to 24 months although it can occur in any age group.[4]

Eustachian tube (ET) is a very important structure which connects middle ear and nasopharynx. It plays important role in fluid drainage from middle ear and maintaining middle ear pressure. AOM is caused by

anatomical or physiological dysfunction in the ET. Inflammation in the ET prevents fluid drainage from the middle ear cavity turning the sterile middle ear fluid to purulent effusion that is characteristic of AOM.[5,6,7] Patients may present with localised symptoms or with both localised and systemic symptoms and signs. Otalgia, otorrhea, reduced hearing, aural fullness, fever, irritability, anorexia, vomiting and diarrhoea are usual symptoms and signs. On otoscopic examination, tympanic membrane may appear opaque and bulged out or there may perforation with discharge Pneumatic otoscopy may show restricted tympanic membrane mobility.[8]

Being a developing country, sub- standard living conditions, overcrowding, exposure to smoke, and limited access to medical care are the major risk factors that contribute to the prevalence of AOM The prevalence and overall burden of AOM varies according to geographic distribution. Inspite of this, there is a dearth of data from India in this regard and the data available is sporadic. Management of AOM includes strict observation, symptomatic therapy and antibiotic treatment if necessary.[1]

Aims and Objectives

1. To study the prevalence of Acute otitis media in patients attending ENT OPD, NMCH, Nagaon.
2. To study the pattern of distribution of Acute otitis media with respect to age, sex, presenting complaints and laterality.

MATERIALS AND METHODS

This was a 2 years hospital based retrospective cross-sectional study conducted over 268 patients attending the Department of ENT at Nagaon Medical College Hospital, Nagaon and diagnosed as a case of Acute Otitis Media from May 2023- April 2025.Patients with Otitis media with effusion, Chronic Otitis Media and AOM with complications were excluded from the study. Data were entered into excel sheets and statistical analysis was done using Microsoft Excel 2019.

RESULTS

In the present study, 268 patients with Acute Otitis Media were evaluated.

The patients in this study ranged from the age group of 1 month to 60 years. The majority of the patients were seen in the age group within 15 years (38.3%), followed by 31–45 years (26.2%).

Sl. No.	Age (Years)	No.	Percentage
1.	<15 yrs	103	38.3%
2.	16 yrs- 30 yrs	57	21.4%
3.	31 yrs- 45 yrs	70	26.2%
4.	> 45 yrs	38	14.1%
	Total	268	100%

Table 1: Distribution of Cases According to Age

While 137 (51.1%) patients were male, 131 (48.9%) were female with Male: female ratio is 1.04:1.

Sl. No.	Gender	No.	Percentage
1.	Female	131	48.9%
2.	Male	137	51.1%

Table 2: Distribution of Cases According to Gender

The most common presenting symptom in cases of AOM was earache (79.5%) followed by fever (73.5%). Hearing impairment was seen in 38.4% of total cases. Paediatric patients also presented with other symptoms like restlessness and decreased feeding.

Sl. No	Symptoms	No. of Cases	Percentage
1.	Earache	213	79.5%
2.	Fever	197	73.5%
3.	Ear discharge	64	23.9%
4.	Nasal discharge	152	56.7%
5.	Hearing impairment	103	38.4%

Table 3: Distribution of Cases According to Symptoms

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AOM was more common in winter season in our study (38.4%) as compared to rainy and summer seasons.

On consideration of the laterality of ear affected in AOM, maximum cases presented were unilateral (81.3%) compared to cases presenting in both ears (18.7%).

Sl. No.	Laterality of AOM	No. of Cases	Percentage
1.	Unilateral	218	81.3%
2.	Bilateral	50	18.7%
	Total	268	100%

Table 4: Distribution of Cases According to Laterality

On examination, most of the patients presented with congested tympanic membrane (60.1%) while 14.9% presented with perforation of tympanic membrane. Tympanic membrane perforation can occur at any age but is most frequently observed in younger patients, in whom infection is common.

Sl. No.	Signs	Percentage
1.	Normal TM	2 (0.75%)
2.	Congested TM	161 (60.1 %)
3.	TM perforation	40 (14.9%)
4.	Bulging TM	95 (35.4%)

Table 5: Distribution of Cases According to Signs

DISCUSSION

Acute otitis media falls under the spectrum of Otitis media which is inflammatory condition of middle ear. AOM more commonly affects children more as compared to adults and usually presents with fever and otalgia. AOM has an important health concern at early life as well as in adults. Our study included 268 patients with Acute Otitis Media. Majority of the patients in our study were seen within 15 years of age (38.3%), followed by 31–45 years age group (26.2%). Infants and Children are more vulnerable to develop AOM as compared to adults which is chiefly attributed to the anatomical predisposition. Young children have shorter, more flexible and horizontal ET that allows pathogens to enter middle ear with relative ease from nasopharynx. AOM has higher prevalence rates in infants and children as supported by other studies and it is concordance with our study.[9,10] Adults make up less than 20% of patients presenting with acute otitis media.[11]

While 137 (51.1%) patients were male,131 (48.9%) were female with Male: female ratio is 1.04:1. Khan et al. observed that out of all patients with AOM, 55.02% were male and 44.98% were female. Other studies also showed male preponderance over females.[9,10,11]

As far as symptoms at presentation were concerned, the most common presenting symptom was earache (79.5%) followed by fever (73.5%). Hearing impairment was seen in 38.4% of total cases.[11,12] In our study, Paediatric patients also presented with other symptoms like restlessness and decreased feeding. Infants and young children frequently experience fever, headache, irritability, cough, rhinitis, listlessness, anorexia, vomiting, diarrhoea, and pulling at the ears as the symptoms of AOM as seen in study by Ramakrishnan et al.[13] while adults may also experience tinnitus and vertigo as AOM symptoms.[11] AOM should be diagnosed in a patient if moderate to severe bulging of TM is present or new onset ear discharge is seen not secondary to otitis externa. The diagnosis may also be made with mild bulging of TM with ear pain or intense TM erythema.[14]

In our study AOM cases were more common in winter season (38.4%). as compared to rainy and summer seasons. In the winter season, there are more cases of upper respiratory tract infections. This in turn causes infection to travel from nasopharynx to middle ear causing otitis media. M. Santoshi Kumari et al. had similar observations as seen in our study.[9] If we see the laterality of ear affected in AOM, maximum cases presented were unilateral (81.3%) as compared to bilaterality. The study results are in accordance with the earlier study carried out by M. Santoshi Kumari et al.[9]

In our study, majority of the patients presented with congested tympanic membrane (60.1%). Perforation of tympanic membrane was found in 14.9% cases. Most of these were very small and present in the pars tensa. Tympanic membrane perforation may occur at any age.

However, it is more commonly observed in younger patients due to higher incidence of infection in this age group. This is in accordance with the findings of P. Marchisio et. al who stated that the incidence of AOM with spontaneous tympanic membrane perforation varies between 5% and 30%.[15]

CONCLUSION

Our study was a retrospective study where 268 patients with AOM were studied. Children are more commonly affected with AOM. The most common presenting symptom was earache and male gender had slightly higher incidence of AOM. AOM is a common middle ear disorder and an important health concern causing significant morbidity in all age groups. Recurrent episodes of acute otitis media may lead to conductive and sensorineural hearing loss. As AOM is more commonly seen in younger age group, regular screening of children in the schools should be done. Each and every case with positive findings should be referred to ENT specialist for timely diagnosis and treatment to prevent morbidities. The major risk factors that contribute to the prevalence of AOM are sub- standard living conditions, overcrowding, exposure to smoke, and limited access to medical care are. To reduce the disease burden, educating on possible risk factors of the disease may be a preventive strategy.

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