

# ORIGINAL ARTICLE

## Otitis Media associated symptoms and types in study population

Manoj Kumar Mishra

Associate Professor, Department of ENT, Mayo Institute of Medical Science Barabanki, U.P., India

### ABSTRACT:

**Background:** Middle ear infection also called Otitis media (OM) is inflammation in the middle ear cleft and is accompanied by effusion of fluids into the middle ear due to infection which may be associated with the presence or absence of tympanic membrane perforation. The present study was conducted to determine various cases of OM in study population. **Materials & Methods:** This study was conducted in the department of Ear, Nose and Throat in year 2014. It included 1540 patients of both gender with history of otalgia and otorrhea. History, clinical examinations such as video otoscopy, nasal endoscopy, tympanometry and pure tone audiometry was done. Audiometric threshold of hearing loss was evaluated using pure tone audiometry and the average for the frequencies 0.5, 1, 2, 4 and 8 kHz was recorded. **Results:** Out of 1540 patients, males were 710 and females were 830. The difference was non-significant (P- 1). Age group 1- 15 years consisted of 1080 patients, 15- 30 years had 410 patients and >30 years had 50 patients. The difference was significant (P- 0.01). Acute suppurative OM was seen in 18%, chronic suppurative OM in 52% and OM with effusion was seen in 30% of cases. ASOM was unilateral in 25% and bilateral in 75%, CSOM was unilateral in 45% and bilateral in 55%, OME was unilateral in 65% and bilateral in 35% of cases. The difference was significant (P- 0.01). In ASOM, hearing was normal (48%), conductive hearing loss (18%), sensorineural hearing loss (15%) and mixed hearing loss (19%). In CSOM, hearing was normal (21%), conductive hearing loss (50%), sensorineural hearing loss (14%) and mixed hearing loss (15%). In OME, hearing was normal (24%), conductive hearing loss (28%), sensorineural hearing loss (16%) and mixed hearing loss (32%). The difference was significant (P- 0.01). **Conclusion:** Otitis media is common among children. Hearing loss is one of the common symptoms. Among forms, ASOM, CSOM and OME are common.

**Key words:** Otitis media, otalgia, otorrhea.

Corresponding author: Dr. Manoj Kumar Mishra, Associate Professor, Department of ENT, Mayo Institute of Medical Science Barabanki, U.P., India

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### Introduction

Middle ear infection also called Otitis media (OM) is inflammation in the middle ear cleft and is accompanied by effusion of fluids into the middle ear due to infection which may be associated with the presence or absence of tympanic membrane perforation.<sup>1</sup> It is mostly (90%) seen in younger children less than 2 years of age. The two main types are acute otitis media (AOM) and otitis media with effusion (OME). AOM is an infection of abrupt onset that usually presents with ear pain. In young children this may result in pulling at the ear, increased crying, and poor sleep. Decreased eating and a fever may also be present. OME is typically not associated with symptoms. Occasionally a feeling of fullness is described.<sup>2</sup> Chronic suppurative otitis media (CSOM) is middle ear inflammation of greater than two weeks that results in episodes of discharge from the ear. It may be a complication

of acute otitis media. There can be hearing loss. The hearing loss in OME, due to its chronic nature, may affect a child's ability to learn.<sup>3</sup>

Factors such as demographic, genetic, environmental and infections, allergy, asthma, eustachian tube dysfunction, cleft palate, and adenoid hypertrophy etc are common. According to WHO, OM has led hearing impairment in 42 million people (above 3 years) in the worldwide. Studies around the world have reported that the prevalence of ASOM varies from 2.3% to 20%, CSOM 4% to 33.3% and OME from 1.3% to 31.3%. The prevalence rate of ASOM in India is around 17–20%, CSOM is 7.8% and of OME is not yet known.<sup>4</sup>

The cause of AOM is related to childhood anatomy and immune function. Either bacteria or viruses may be involved. Risk factors include exposure to smoke, use of pacifiers, and attending daycare. It occurs more commonly

among Indigenous peoples and those who have Down syndrome.<sup>5</sup>

The present study was conducted to determine various findings of OM in study population.

**Materials & Methods**

This study was conducted in the department of Ear, Nose and Throat in year 2014. It included 1540 patients of both gender with history of otalgia and otorrhea. All were informed regarding the study and written consent was obtained. Ethical clearance was obtained from institutional ethical committee. General information such as name, age, gender, etc was recorded.

History, clinical examinations such as video otoscopy, nasal endoscopy, tympanometry and pure tone audiometry was done. Audiometric threshold of hearing loss was evaluated using pure tone audiometry and the average for the frequencies 0.5, 1, 2, 4 and 8 kHz was recorded.

Results were subjected to statistical analysis using chi-square test. P value less than 0.05 was considered significant.

**Results**

Table I shows that out of 1540 patients, males were 710 and females were 830. The difference was non - significant (P- 1). Table II shows that age group 1- 15 years consisted of 1080 patients, 15- 30 years had 410 patients and >30 years had 50 patients. The difference was significant (P- 0.01).

Graph I shows that acute suppurative OM was seen in 18%, chronic suppurative OM in 52% and OM with effusion was seen in 30% of cases. Graph II shows that ASOM was unilateral in 25% and bilateral in 75%, CSOM was unilateral in 45% and bilateral in 55%, OME was unilateral in 65% and bilateral in 35% of cases. The difference was significant (P- 0.01). Graph III shows that in ASOM, hearing was normal (48%), conductive hearing loss (18%), sensorineural hearing loss (15%) and mixed hearing loss (19%). In CSOM, hearing was normal (21%), conductive hearing loss (50%), sensorineural hearing loss (14%) and mixed hearing loss (15%). In OME, hearing was normal (24%), conductive hearing loss (28%), sensorineural hearing loss (16%) and mixed hearing loss (32%). The difference was significant (P- 0.01).

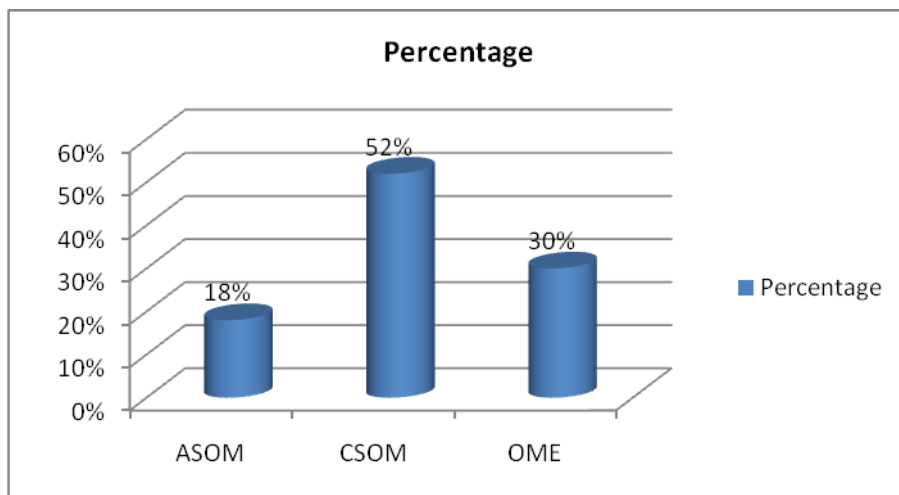
**Table I** Distribution of patients

Total- 1540		
Male	Female	P value
710	830	1

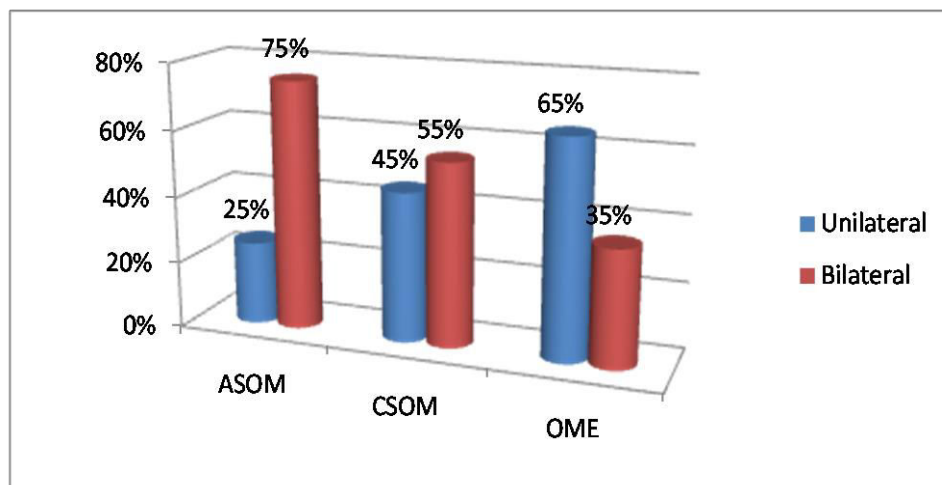
**Table II** Age wise distribution of patients

Age group	Number	P value
1-15 years	1080	0.01
15-30 years	410	
>30 years	50	

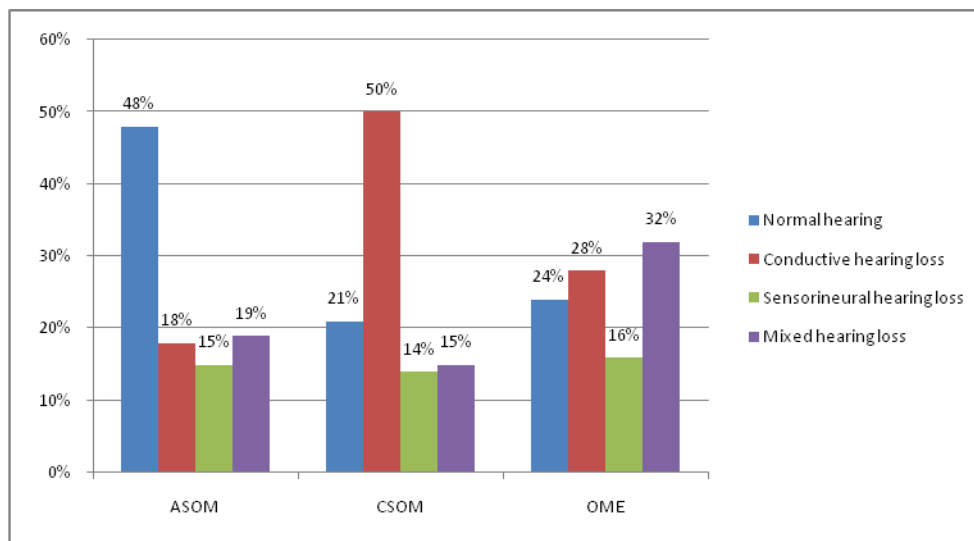
**Graph I** Types of OM



**Graph II** Otosopic findings



**Graph III** Type of hearing loss



**Discussion**

Common symptoms seen in OM are fever, irritability and ear pain. Since an episode of otitis media is usually precipitated by an upper respiratory tract infection (URTI), there are often accompanying symptoms like a cough and nasal discharge. Other symptoms includes discharge from the ear, perforation of the ear drum, chronic suppurative otitis media, tympanostomy tube otorrhea, or acute otitis externa. Trauma, such as a basilar skull fracture, can also lead to discharge from the ear due to cerebral spinal drainage from the brain and meninges.<sup>6</sup> The present study was conducted to determine various aetiological factors leading to OM in study population.

In this study, we included 1540 patients with OM. It included 710 males and 830 females. Age group 1- 15 years consisted of 1080 patients, 15- 30 years had 410 patients and >30 years had 50 patients. This is similar to study conducted by Rupa V et al.<sup>7</sup> In this study, we found that various types were acute suppurative OM (18%), chronic suppurative OM (52%) and OM with effusion (30%). This is in accordance to Casselbrant et al.<sup>8</sup> We found that ASOM was unilateral in 25% and bilateral in 75%, CSOM was unilateral in 45% and bilateral in 55%, OME was unilateral in 65% and bilateral in 35% of cases. Similar results were seen in study by Monasta L et al.<sup>9</sup>

Among various causative factors, dysfunction of the eustachian tube, inflammation of the mucous membranes in the nasopharynx, this can be caused by a viral URTI, strep throat, or possibly by allergies are common. In this study in ASOM, hearing loss was either conductive hearing loss, sensorineural hearing loss and mixed hearing loss. This is similar to results of Deshmukh CT.<sup>10</sup>

Pneumococcal conjugate vaccines (PCV) in early infancy, decreases the risk of acute otitis media in healthy infants. It is recommended for all children. Influenza vaccine is recommended annually for all children.

### Conclusion

Otitis media is common among children. Hearing loss is one of the common symptoms. Among forms, ASOM, CSOM and OME are common.

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