



## Prevalence of aural disorders in patients presented to OPD: A hospital case study

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### Abstract

The present study aimed to determine the prevalence of aural disorders in patients presented to OPD in JMC hospital in a rural village Pepla, Meerut, Uttar Pradesh. 80 OPD patients were presented from June 2021 - 2022. Out of these 80 patients, 29 were diagnosed with aural disorders. The prevalence of aural disorders was 36.25%. Prevalence of patients diagnosed with CSOM was 3.44% and those with ASOM was 96.55%. The age range was from 10- 30 years with mean age range of 17.5 years. The age group which is commonly affected with ASOM was between 10 -15 years whereas patient diagnosed with CSOM was of age 6 years. Gender wise prevalence of aural disorders revealed highest prevalence rate among females (65.51%) than males (34.48%). Among the diagnosed aural disorders, patients with ASOM affected were more of females (64.28%) than in males (35.71%). The present study concluded that females were prone to aural disorders than males in rural area.

**Keywords:** Patients, OPD, ASOM, CSOM

### Introduction

Ear diseases are a major health problem in India. Ear infections are the most important reasons of hearing problems in both adults and children. Ear infections happen when virus or bacteria invades your external or middle ear. Recurrent throat infection may also result in middle ear infections. These middle ear infections when not treated properly can result into tympanic membrane perforation, mastoiditis, brain abscess, meningitis etc. Common middle ear infection seen in both children and adults are acute otitis media (AOM). Acute otitis media is defined as an infection of the middle ear and is the second most common pediatric diagnosis in the emergency department following upper respiratory tract infections. It is a spectrum of diseases that includes acute otitis media (AOM), acute suppurative otitis media (ASOM), chronic suppurative otitis media (CSOM), and otitis media with effusion (OME). Although otitis media can occur at any age, it is most commonly seen between the ages of 6 to 24 Months (Mehrali S *et al* 2019) <sup>[12]</sup>. Many predisposing factors are seen in children such as upper respiratory tract infections (Ubukata K, 2018) <sup>[16]</sup> and genetic factors (Mittal R *et al* 2014) <sup>[13]</sup>.

Diseases of the middle ear have inflicted a significant burden on the health system and accounts for almost one third of health care visits made to pediatricians especially in the child's first 5 years of life (Chadha S K, 2014 & Teele D W 1989) <sup>[6, 9]</sup>. Teel *et al* estimated that one third of the visits made to a pediatrician is due to middle ear diseases. Acute otitis media (AOM) is a very common condition and a leading cause of health care visits and antibiotic

prescription (Klein J O, 2000) <sup>[10]</sup>. Chronic suppurative otitis media (CSOM) is an important cause of preventable hearing loss, in the developing world (Berman, S 1995) <sup>[4]</sup> and a serious problem in children in the areas of early communication, language development, auditory processing, psychological and cognitive development, educational progress (Acuin J, 2004) <sup>[11]</sup>.

In 2013, the evidence based guidelines for the diagnosis and management of acute otitis media were updated by the American Academy of pediatrics accentuating the role of clear visualization of the tympanic membrane in the diagnosis of ear infections. (Lieberthal AS *et al*, 2013) <sup>[11]</sup>. Otitis media is clinically diagnosed through otoscopy combining the case history. The diagnostic tools for otitis media available are pneumatic otoscope, acoustic reflexometry and tympanometry. The present study aims to find out the prevalence of aural disorders in patients presented to the OPD of a village based hospital.

### Materials and Method

The current study was carried out from June 2021 to June 2022 in a rural village hospital in Meerut, Uttar Pradesh. The study was granted ethical clearance by the hospital administration of JMC Hospital, pepla. The data of all OPD patients from June 2021-2022 were collected. Data of all age groups of patients were collected. 80 OPD patients were included in the study. All the patients were divided on the basis of age, gender and sex. The examination protocol included:

- History of ear disorder or hearing loss

- Examination of external auditory canal
- Otosopic examination of TM using 3.5 V otoscope.
- Impedence audiometry to assess the status of middle ear

**All assessment procedures were done by experienced audiologists and diagnosed by ENT specialists. The patients were diagnosed on the basis of the following criteria**

- **Chronic suppurative otitis media (CSOM):** History of ear discharge for more than a 2 week with permanent central perforation was the criteria for diagnosing CSOM of tubotympanic type. History of ear discharge for more than 2 weeks with marginal perforation, cholesteatoma were the criteria for diagnosing CSOM of atticofacial type. Type B tympanogram was also one among the criteria.
- **Acute suppurative otitis media (ASOM):** History of acute ear discharge with bulging or inflammation of the tympanic membrane was the criteria. All the patients were cross checked periodically so as to verify the diagnosis. Patients diagnosed with ASOM were continuously monitored or re-examined to know whether the infection have changed into chronic stage.

Prevalence of the occurrence of aural infection was calculated across gender and age groups.

### Results and Discussion

80 samples of OPD patients were collected. Aural disorders were diagnosed in 29 patients. The prevalence of aural disorders was 36.25%. The aural disorders presented to the OPD were chronic suppurative otitis media and acute suppurative otitis media. There was one patient diagnosed with CSOM and 28 patients diagnosed with ASOM. Prevalence of patients diagnosed with CSOM was 3.44% and those with ASOM was 96.55%. The age range was from 10-30 years with mean age range of 17.5 years. The age group which is commonly affected with ASOM was between 10-15 years whereas patient diagnosed with CSOM was of age 6 years. Gender wise prevalence of aural disorders revealed highest prevalence rate among females (65.51%) than males (34.48%). Among the diagnosed aural disorders, patients with ASOM affected were more of females (64.28%) than in males (35.71%).

The detailed case history revealed that the root cause of the aural infections were unawareness of aural disorders. Most of the patients were the residents of nearby village and were following traditional methods of treating acute ear infections such as pouring oil inside the ear etc. Other common causes were insertion foreign objects into the ear which led to ascending infection and left untreated.

According to Ragini Bhatia (2022)<sup>[14]</sup> the estimated prevalence of ear diseases of 11.66% in children of India which is substantial to lead high disease burden to the health sector. The study conducted by Chadha *et al* (2013)<sup>[7]</sup> 15718 school children of the age range between 5-12 years of age in New Delhi showed a high ear disease prevalence of 25.78%. Another study conducted by Chadha *et al* (2006)<sup>[8]</sup> compared the prevalence of ear diseases in 1500 school children of lower and higher socioeconomic strata in New Delhi which revealed that 19.6 per cent prevalence of ear disease in the lower strata of that society compared with

2.13 per cent in higher socioeconomic group. Siddartha, *et al* found association of socio-economic status with ear ailments. They found higher prevalence of ear diseases in lower socio-economic status.

Adhikari *et al.* found otitis media in 13.7% children of rural Nepal and in 10.8% children in urban areas which shows that aural disorders are most often seen in rural village areas. Minja *et al* conducted a study from Tanzania also compared rural and urban populations and found CSOM in 9.44% of rural population as compared with 1.3% in urban Tanzania.

The current study showed acute and chronic suppurative otitis media are significantly more common in females than in males in rural areas. The age range which is more prone to aural disorders were 10-15 years. This result can be a reflection of overall frequency of increase in the spreading of aural disorders in rural areas. A detailed survey of infectious disorders in rural areas should be taken. Effective and proper diagnosis with right treatment should be given. Most importantly proper awareness should be given to the rural residents regarding aural disorders so that we can manage the burden on health sector.

### Conflict of Interest

Not available

### Financial Support

Not available

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