

Middle Ear Infections among Patients Visiting the Department

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Abstract

Background: Assessment of cases of middle ear infections. **Methods:** Sixty-five patients of either gender with middle ear infection were enrolled and parameters such as residence, socioeconomic status (SES), second hand smoking, exposure to household cooking smoke, and upper respiratory tract infections were recorded. **Results:** Common middle ear infection was chronic suppurative otitis media in 36 (55.3%) followed by acute suppurative otitis media in 22 (33.8%) and otitis media with effusion in 7 (10.7%). There was no education in 20%, primary level in 65% and secondary level in 15%, socio-economic status was low in 40%, middle in 35% and high in 25%, house hold smoke was seen in 35% sometimes and in 42% always, 43% were from rural and 57% from urban background and upper respiratory tract infection was seen sometimes in 58% and always in 30%. **Conclusion:** Middle ear infection was mostly seen among 5-15 years with male predominance. Chronic suppurative otitis media was common middle ear infection.

Keywords: Chronic Suppurative Otitis Media, Middle Ear Infection, Socioeconomic Status, Smoking.

INTRODUCTION

Middle ear infections are common in young adults. It is evident that most of the children suffer middle ear infection once till three years of age. Chronic ear diseases result from long standing inflammation in the middle ear.^[1] Most common middle ear infection comprise of chronic suppurative otitis media (CSOM) and otitis media with effusion etc.^[2] According to World Health Organization (WHO) CSOM is a middle ear disease characterized by

discharge through ear that last for at least 2 weeks through a persistent tympanic membrane perforation. On the other hand, otolaryngologists consider discharge more than 6 weeks.^[3] It is recorded that approximately 330 million population is suffering from middle ear infection and age group upto 65 years is commonly affected. It is estimated that about 55-58% people loss their hearing as a result of middle ear infections.^[4]

Otitis media with effusion is a condition characterized by persistency of fluid in the middle ear cavity without signs of suppuration. Low-income countries are affected the most.^[5] Factors such as demographic, genetic, environmental and infections, allergy, asthma, eustachian tube dysfunction, cleft palate, and adenoid hypertrophy etc are common in these patients.^[6] Middle ear infection in children leads to delays in speech, language, and cognitive skills development. A close monitoring of symptoms is essential in children to avoid development of hearing impairment and subsequently mental disorders.^[7] Considering this, the present study aimed at assessing middle ear infections among patients visiting the department.

MATERIALS AND METHODS

Sixty- five patients of either gender visiting the department of otolaryngology were included in the study. All patients were included in the study once their parents agreed to active participation of their wards.

All relevant information was recorded in case history file. Parameters such as residence, socioeconomic status (SES), second hand smoking, exposure to household cooking smoke, and upper respiratory tract infections were recorded. Extensive assessment via video otoscopy, nasal endoscopy, tympanometry and pure tone audiometry was performed by ENT surgeon. Pure tone audiometry was performed for the assessment of

audiometric threshold of hearing loss. Results of the present study after recording all relevant data were subjected for statistical inferences using chi- square test. The level of significance was significant if p value is below 0.05 and highly significant if it is less than 0.01.

RESULTS

Maximum cases were seen in age group 5-15 years (males- 22, females- 13) followed by 15-25 years (males- 12, females- 8) and >25 years (males- 6, females- 4). [Table 1].

Table 1: Age and gender distribution

| Age groups (years) | Male | Female | Total |
|--------------------|------|--------|-------|
| 5-15 | 22 | 13 | 35 |
| 15-25 | 12 | 8 | 20 |
| >25 | 6 | 4 | 10 |
| Total | 40 | 25 | 65 |

Table 2: Type of middle ear infection

| Type | Number (Percentage) | P-value |
|----------------------------------|---------------------|-------------------|
| Acute suppurative otitis media | 22 (33.8%) | Significant <0.05 |
| Chronic suppurative otitis media | 36 (55.3%) | |
| Otitis media with effusion | 7 (10.7%) | |

Common middle ear infection was chronic suppurative otitis media in 36 (55.3%) followed by acute suppurative otitis media in 22 (33.8%) and otitis media with effusion in 7 (10.7%). A

significant difference was observed ($P < 0.05$). [Table 2, Figure 1].

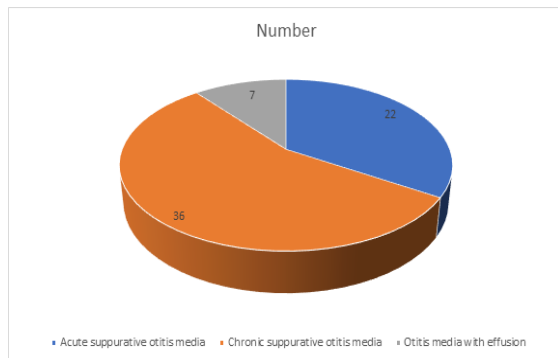


Figure 1: No of Middle ear infection

Table 3: Assessment of parameters

| Variab les | Paramet ers | Percent age | P value |
|------------------|---------------|-------------|------------------------|
| Educati on | No educatio n | 20% | Significa nt <0.05 |
| | Primary | 65% | |
| | Secondar y | 15% | |
| SES | Low | 40% | Non-significa nt >0.05 |
| | Middle | 35% | |
| | High | 25% | |
| House hold smoke | Never | 23% | Non-significa nt >0.05 |
| | Sometim es | 35% | |
| | Always | 42% | |
| Residen ce | Rural | 43% | Non-significa nt >0.05 |
| | Urban | 57% | |
| URTI | Never | 12% | Signific ant <0.05 |
| | Sometim es | 58% | |
| | Always | 30% | |

There was no education in 20%, primary level in 65% and secondary level in 15%, socio- economic status was low in 40%, middle in 35% and high in 25%, house hold smoke was seen in 35% sometimes and in 42%

always, 43% were from rural and 57% from urban background and upper respiratory tract infection was seen sometimes in 58% and always in 30%. A significant difference was observed ($P < 0.05$). [Table 3].

DISCUSSION

Middle ear infection or chronic otitis is common ear problem among young population. The main types are acute otitis media (AOM), chronic suppurative otitis media (CSOM) and otitis media with effusion (OME).^[8] AOM is characterized by sudden onset that usually presents with ear pain. It leads to pulling at the ear, increased crying, and poor sleep-in children. Apart from it, decreased eating and fever are other findings.^[9] A feeling of fullness is observed in otitis media with effusion (OME). A routine visit to ENT surgeon may be helpful in assessment of cases. A timely intervention may be fruitful in preventing permanent hearing loss.^[10] The present study aimed at assessing middle ear infections among patients visiting the department.

In this study we enrolled 65 patients starting from 5 years of age. It comprised of 22 males and 13 females in age group 5-15 years, 12 males and 8 females in 15-25 years and 6 males and 4 females >25 years. Mishra et al,^[11] included 1540 patients with males 710 and females 830. Age group 1- 15 years had 1080 patients, 15- 30 years had 410 patients and >30 years had 50 patients. 18% had acute suppurative OM, 52% had chronic suppurative OM 30% had

OM with effusion. In 25% of cases, ASOM was unilateral and in 75% it was bilateral whereas CSOM was unilateral in 45% and bilateral in 55%, OME was unilateral in 65% and bilateral in 35% of cases. In ASOM, there was conductive hearing loss in 18%, sensorineural hearing loss in 15% and mixed hearing loss in 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%).

We found that common middle ear infection was chronic suppurative otitis media in 36 (55.3%) followed by acute suppurative otitis media in 22 (33.8%) and otitis media with effusion in 7 (10.7%). Mukara et al,^[12] in their study on 810 children age ranged 8-59 years observed that the prevalence of middle ear infections was 5.8% and in 4% it included cases of chronic suppurative otitis media. Patients living in urban area had less chances of getting infected as compared to those living in rural area ($P < 0.05$) but household smoke was the contributory factors among urbans. Parents were unlikely to know that their child had an ear infection.

In this study it was found that there was no education in 20%, primary level in 65% and secondary level in 15%, socio-economic status was low in 40%, middle in 35% and high in 25%, household smoke was seen in 35% sometimes and in 42% always, 43% were from

rural and 57% from urban background and upper respiratory tract infection was seen sometimes in 58% and always in 30%. It is found that in United States, the cost of otitis media is more than \$5 billion. It is seen that indigenous children are much more likely to be diagnosed with severe ear infection and to suffer repeated or multiple episodes than non-indigenous children. The cases of middle ear infection are higher among those with limited access to medical care, lower socioeconomic status (SES), and remote living conditions ultimately resulting to early childhood hearing loss. Yiengprugsawan et al,^[13] found that number of repeated ear infections showed strong dose-response relationships with subsequent hearing problems among non-indigenous children but not statistically significant among indigenous children.

CONCLUSION

Middle ear infection was mostly seen among 5-15 years with male predominance. Chronic suppurative otitis media was common middle ear infection.

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