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Original Research Article

Evaluation of Otitis Media in patients of rural background attending OPD of a tertiary Medical Institute

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ABSTRACT

Introduction: Otitis media can cause a mild to moderate hearing loss, due to the fluid interfering with the transmission of sound through to the inner ear. It can often affect the tympanic membrane causing it to retract or become inflamed. Poor hearing retards development of speech and impacts adversely upon mental ability and self confidence resulting into social burden. Condition of CSOM and hearing retardation seems to be a "tip of iceberg" in rural area people of villages hence this study. **Methods**: This study was carried out as a Cross Sectional Analytical study. 100 Randomly selected Patients Coming to the ENT Clinics / OPD were evaluated in this study . Evaluation was also performed in Audiology Units. Study included thorough history taking, General & Otological examination , tuning fork examination (for screening) & pure tone audiometry **Results:** We noted that there was significant difference in Clinical features in Patients coming to attend OPD , Otorrhoea being most common presenting feature . On examination the majority of finding recorded was CSOM with safe perforation Audiological examination-at a glance showed mild to moderate conductive hearing loss in maximum patients. **Conclusion:** Discharging ears are grossly neglected in our society .Prevalence rates of CSOM are variable depending on different social strata, different racial groups and different study groups. There is a need to take immediate measures for prevention and control of Otitis Media in all age groups of people living in rural areas . Awareness campaigns about the common causes, complications and correct practices are recommended.

Keywords: Otitis Media , rural , OPD, CSOM, Audiometry.

Introduction

Otitis media is inflammation of the middle ear. This is most commonly caused by the buildup of fluid behind the ear drum, as a result of a blockage to the Eustachian tube[1]. Otitis media is more common in children, as their Eustachian tube is shorter and more horizontal than adults and is made up of more flaccid cartilage, which can impair its opening [2]. Otitis media can cause a mild to moderate hearing loss, due to the fluid interfering with the transmission of sound through to the inner ear. It can often affect the tympanic membrane causing it to retract or become inflamed [3]. The fluid can cause the tympanic membrane to bulge and become inflamed and occasionally the tympanic membrane will perforate. There are three common types of otitis media, acute purulent otitis media, otitis media with effusion and chronic suppurative otitis media [4].The etiology and pathogenesis of otitis media are multifactorial and include genetic, infections, allergy, environmental, social & racial factors and eustachian tube dysfunction. It can present itself in different forms because of large variations in the nature of the disease. This could range from "silent otitis media" with clinically undetectable middle ear pathology to late stage intracranial life threatening complications like brain abscess.According to a World Health Organization survey, 42million people worldwide (older than 3 years) have hearing loss. The major cause for hearing retardation is otitis media,[5] which is second only to common cold as a cause of infection in childhood. It is estimated that about 90% of people have at least one episode of otitis media by 2 years of age. For children less than 15 years old, the most frequent diagnosis made in clinical practice is otitis media[6]. Children from developing countries having unfavorable environments witness an extraordinarily high incidence of severe episodes of otitis media with frequent perforation of tympanic

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membrane and persistent suppurative discharge and necrotizing process in the middle ear, including destruction of ossicles. Children from lower socioeconomic groups being more vulnerable to otitis media, they have to be given special care to prevent hearing retardation. Otitis media gradually and silently affects the hearing process, which, in turn, adversely affects mental status, socialization and education in such children. After every episode of otitis media in children, fluid persists in the middle ear for weeks to months. This leads to conductive hearing loss. Poor hearing retards development of speech and impacts adversely upon mental ability and self confidence resulting into social burden. Condition of CSOM and hearing retardation seems to be a "tip of iceberg". WHO proclaims prevalence rate of CSOM in India is 2%; whereas, prevalence rate; Ahmed M. Alabassi et.al reportedly prevalence rate of 25%[7,8].Prevalence of hearing retardation is more worse, ICMR on multi centric centre's report says 7% prevalence rate[9]. According to WHO, 42 million peoples are suffering from hearing retardation, which includes baby older than 3 days[7].Amit K Verma et al reported prevalence rate of 71.6% hearing retardation in Northern India. Hence to explore various epidemiological factors of Otitis Media we conducted this study[10].

Methodology

This study was carried out as a Cross Sectional Analytical study. 100 Randomly selected Patients Coming to the ENT Clinics / OPD were evaluated in this study .Evaluation was also performed in Audiology Units. Consent was taken from Patients Study included thorough history taking, General & Otological examination, tuning fork examination (for screening), pure tone audiometry and tympanometry. Daily detailed examinations were done by ENT Specialist, medical officer trained in audiological equipments and audiologist, using Arphi diagnostic audiometer and Amplaid 756 tympanometer. 100 patients with chronic suppurative otitis media (CSOM) From Rural Background of District Nagpur and 100 individuals without otolological problems as control group were included in this study, which was done during the period of 4 months at various Government Health Centres of Nagpur. We excluded patients with a personal or family history of congenital deafness, prolonged exposure to ototoxic agents (e.g., antituberculosis agents, aminoglycoside antibiotics, carbon monoxide, lead, and benzene), For each subject, data of audiometric tests were collected. We also applied a predesigned Interviewing questionnaire with sociodemographic information,Occupational Exposure ,smoking and alcohol habit, employment history, current noise exposure, hearing protection use, auditory-related symptoms (e.g., tinnitus, vertigo), and self-assessment of hearing loss apart from points of General Clinical & Local Examination. Noise level detection was performed using audiometric Unit with available range of 30-130 dB, A and C frequency weighting. Display is with dB(A).All patients were clinically examined (otoscopical examination). Tympanometry was performed in all patients. Audiometric assessment by standard pure-tone audiometry, using Audiometer Orbiter 922 , was performed by the audiology consultants; bone and air conduction for both ears were individually performed from 250 up to 8000 Hz[11]. HL was categorized according to Clark into the following:
(1) *Mild HL*: hearing threshold between 26 and 40 dB HL.
(2) *Moderate HL*: hearing threshold between 41 and 55 dB HL.
(3) *Moderately severe HL*: hearing threshold between 56 and 70 dB HL.
(4) *Severe HL*: hearing threshold between 71 and 90 dB HL.
(5) *Profound HL*: hearing threshold more than +90 dB HL.
Data was filled in Microsoft Excel&analysed using acomputer software Epi Info version 6.2 (Atlanta, Georgia, USA) and SPSS(SPSS Inc., Chicago, Illinois, USA). Version 20. P value of 0.05 and less was considered as statistically significant. Results were presented in simple proportions and means (±SD). Chi-square test was also used. Comparison between the study and the control group was performed using the *t*-test for two independent means. Comparison among the subgroups of the study group was carried out using one-way analysis of variance test, and comparison for nonparametric data was carried out using the Fisher exact test.

Results

100 Randomly selected Patients of all age groups coming to the ENT Clinics / OPD were evaluated in this study.Aural swabs were taken from all patients. Patients were distributed according to age and sex. There were 62 males and 38 females. The age of patients were taken, age group of less than 5 years comprised 9% patients, 5-15 years comprised 32% , 16 to 25 years comprised 22% & rest 39 were more than 25 years of age .On examination the majority of finding recorded was CSOM with safe perforation in 42%, followed by Retracted tympanic membrane (20%) followed by CSOM with unsafe perforation (18%). Bilateral CSOM with safe and unsafe

perforation was found in 5% cases. Otitis media with effusion was 5%, Healed otitis media (10%).Clinical features of patients with CSOM showed that Ottorhoea was the most common presenting symptom followed by hearing retardation and Otalgia , Itchy ear , Tinnitus , Odorful discharge and vertigo were also presented in some ears. Audiological examination-at a glance (after wax and pus removal) shows that conductive hearing loss in one or both ears (120) was the most common presenting symptom out of which in 103 cases hearing loss was mild to moderate. In 8 cases, there was mixed hearing loss, whereas in 2 patients there was sensorineural hearing loss.

Discussion

Discharging ears (CSOM) grossly neglected in our society. It is particularly common in low socio-economic status & in the developing countries. Prevalence rates of CSOM are variable depending on different social strata, different racial groups and different study groups too. Mishra et al[12] reported Prevalence rate (PR) of 12.13% with door-to door survey and cohort of above 1000 subjects. Alabassi[8] reported 25% PR from Basra. P. Adhikari[7] reported PR of 7.6% Amit K Verma[10] reported PR of 15.3 from Northern India. V. Rupa[13] reported 6% PR in southern India. WHO reports PR of CSOM in India is to be 2%[7]. Differences in prevalence's are due to different socioeconomic status, inadequate data sampling for the available city/state/country, to be labeled and smaller cohorts. Hospital based studies can also modify prevalence rate in contrast to field study. But both institutional/field surveys have their pitfalls. Despite all odds, CSOM should be considered as big challenge and shouldn't be overlooked, significantly when at least 40-65% of disease burden can be corrected surgically. Due to lack of health awareness, low socioeconomic life, lack of health education and paucity of ENT surgeons in nearby rural areas , Otitis Media is found to be in higher magnitude.Conductive hearing loss is the most common findings in cases of CSOM out of which most cases were having mild to moderate hearing loss. Amit K Verma reported Prevalence of hearing retardation about 71.6%in school going children[10].

Conclusion

These findings can be used to plan future strategies for health education interventions in the community. There is a need to take immediate measures for prevention and control of Otitis Media in all age groups of people living in rural areas. Awareness campaigns about the common causes, complications and correct practices are recommended. This study and its results are applicable to the geographical and socioeconomic status around our Medical Institute.

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