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Research Article

INCIDENCE, RISK FACTORS, COMPLICATION AND PREVENTION OF ACUTE AND CHRONIC OTITIS MEDIA IN A TERTIARY CARE HOSPITAL

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ABSTRACT

About 99% of OM are commonly visible in younger kids less than 2 years of age, however its incidence may also be seen in adults. Otitis media (OM) is defined as inflammation in the middle ear cleft and is observed via effusion fluids into the middle ear caused by infection, which may be related to the presence or absence of tympanic membrane perforation. The present study aimed to incidence, risk factors, complication and prevention of acute and chronic otitis media in a tertiary care hospital. The study constituted1000 subjects affected with OM and the diagnosis was confirmed by ENT specialists using all the required otorhinolaryngological tests. The present study was carried out by the institutional ethical clearance. Squamous-chronic suppurative otitis media was highly prevalent (52.3%) followed by mucosal-chronic suppurative otitis media (42.7%)), acute suppurative otitis media (46.5%), and otitis media with effusion (18.8%). Major differences have been discovered in special types of listening to loss at higher frequency in the subtypes of otitis media OM is a condition of serious concern, further research on the genetic aspects may help to understand the underlying mechanisms for formulating better therapeutic and defensive strategies.

Keywords: -Otitis media, Mastoiditis, trauma and Upper respiratory tract infections.

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INTRODUCTION

About 99% of OM are commonly visible in younger kids less than 2 years of age, however its incidence may also be seen in adults. Otitis media (OM) is defined as inflammation in the middle ear cleft and is observed via effusion fluids into the middle ear caused by infection, which may be related to the presence or absence of tympanic membrane perforation. [1, 2] The susceptibility of OM relative to aetiopathogenesis is as a result of the involvement of more than one factors which includes demographic, genetic, environmental and different health related elements like infections, allergic reaction, bronchial asthma, eustachian tube dysfunction, cleft palate and adenoid hypertrophy and many others. [3] The occurrence of fluid in center ear ends in forever morbidity with varying ranges of listening to loss in kids and adults. [4]

The etiology and length of OM lead to a squeal of disorders are acute otitis media, otitis media with effusion, chronic suppurative otitis media and mastoiditis. [5] Acute otitis media check with an acute inflammatory situation related to the middle ear that occur because of viral or bacterial contamination. It is characterized by the formation of purulent fluid in the back of a bulging tympanic membrane associated with local or systemic irritation. [6]

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Otitis media with effusion, on the other hand, is persistent inflammatory sicknesses that often comply with unsuccessfully-treated acute otitis media. This circumstance is characterized with the existence of effusion behind an intact tympanic membrane without signs and symptoms of nearby or systemic infection. Chronic suppurative otitis media refers to lengthy-status inflammation of center ear leading to suppuration and persistent perforation of tympanic membrane. [7] When acute otitis media contamination spreads to adjacent structures, it reasons acute inflammation of periosteum and air cells in the mastoid manner main to "mastoiditis". OM is notably installed global and is the principle motive of listening to impairment in developing international locations. [8] World Health Organization (WHO) has reported that listening to impairment in forty two million humans within the international become mainly resulting from OM. The occurrence of OM varies in distinctive international locations, populations and ethnic companies. Hence the present study aims Incidence, risk factors, complication and prevention of acute and chronic otitis media in a tertiary care hospital.

MATERIAL AND METHODS

The cross-sectional study conducted who were attended Otorhinolaryngology Department at Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry.Convenient sampling technique was utilized. According to the age, the patients were grouped into 1–15 years, 16–30 years and >30 years. The diagnosis of otorhinolaryngological problems was confirmed by ENT specialists using clinical history, clinical examinations including video otoscopy, nasal endoscopy, tympanometry and pure tone audiometry. 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. A special questionnaire has been designed to collect the epidemiologicaldata and institutional ethical clearance. The data have been collected from 1000 subjects, of which 20.9% (n= 209) were affected with outer, 56.9% (n = 569) with middle ear and 22.8% and (n = 228) with inner ear diseases. Along with the patients with middle ear disorders, 96% (n= 546) were affected with OM (Otitis media), of which 46.5% (n = 254) were affected with ASOM (acute suppurative otitis media), 34.6% (n =189) with CSOM (chronic suppurative otitis media) and 18.8% (n =103) with OME (otitis media with effusion). Around 2.2% (n = 13) were affected with tubotympanic and 1.7% (n = 10) with atticoantral type of CSOM. In this study excluded from otitis externa, congenital hearing loss, Down's syndrome, craniofacial malformation, terminal and systemic illness such as septicaemia. Data analysis was done using the Statistical Package for Social Sciences version 21. P-value of < 0.05 was considered statistically significant.

RESULTS

Out of 546 OM patients, 61.5% (n= 336) were males and 38.4% (n =210) were females. High male prevalence with male to female ratio of 1.4:1 was noticed. The mean (SD) age of OM subjects is 23.5 (15.37) years and mean (SD) age of onset is 7.2 (5.62) years in 1–15 years, 32.0 (6.51) years in 15–30 and 63.5 (10.3) years in >30 years age group. squamous-CSOM (52.3%) was observed to be more frequent compared to other subtypes of OM. The incidence of comorbidities for instance sinusitis was 40%, tonsillopharyngitis 25.1%, adenoids 10.2%, hypertension 8.5%, diabetes mellitus 6.7%, allergic rhinitis 5.3%, asthma 3.8%, nasal polyps 2.5%, and hypothyroidism 0.5% in the study population. Significant differences in demographic and clinical findings such as age of onset, sex, season and tympanic membrane perforation, presence of related co-morbidities, type and degree of hearing loss were observed among the OM subtypes.

Males were slightly more affected in mucosal-CSOM and OME while females in case of squamous-CSOM. Prevalence of OME was observed to be lower in 16–30 years of age. With observe to seasonal variability, the happening of ASOM and OME was more in winter. Usually squamous-CSOM in summer and mucosal-CSOM was regularly noticed in rainy season. The incident of nasal/nasopharyngeal disorders such as sinusitis (73.5%) and tonsillopharyngitis (56.4%) was found to be high in CSOM. while adenoids (46.2%) increase in case of OME. The occasion of symptoms such as tinnitus (79.5%), vertigo (83.2%) and post nasal drip (67%) was more in CSOM subjects while jugulodigastric node of >2 cm size (51.4%) and snoring (41.4%) were found to be increasingly associated with OME.

Table 1: Demographic and otological findings in otitis media subtypes.

PARAMETER	ASOM (n = 254)	squamous CSOM (n = 91)	Mucosal CSOM (n = 98)	OME (n=103
SEX				
Male	189(74.4%)	49(53.8%)	53(54.0%)	59(57.2%)
Female	65(25.5%)	42(46.1%)	45(45.9%)	44(42.7%)

Table 2: Distribution of co-morbidities and symptoms in the prevalence of otitis media subtypes.

Parameter	Squamous-CSOM	Mucosal-CSOM
Sinusitis	40%,	73.5%
Tonsillopharyngitis	25.1%,	56.4%
Adenoids	10.2%	46.2%
Tinnitus	5.3%	79.5%
Vertigo	-	83.2%
Post nasal drip	2.5%	67%
Allergic rhinitis	5.3%	-

DISCUSSION

Otitis media is most frequent inflammatory problems of middle ear which has a vital health difficulty at youth in addition to in adults. The aetio-pathogenesis of OM is complex and elements like's infections or inflammatory conditions which includes upper respiratory tract infections, allergic rhinitis/rhinosinusitis, adenoids, tumour/trauma are ordinarily responsible for its onset. [9, 10] The incidence of OM varies broadly and reasons a serious burden of contamination globally. However, studies on popularity of OM are constrained in Indian populace. Most of the sooner reviews indicated the prevalence of OM in younger age group but Dhooge IJ. and Adhikari P,et al data available in other age groups. [11,12] In the present study 32.0% of the subjects with OM were below 15 years.

The arrival of ASOM isn't simplest followed by symptoms and signs of otalgia, irritability/ fever but also have a short lived desert in the tympanic membrane. 46.5% of the instances with ASOM had been observed to have otalgia and 2.5% of these instances have been found to have tympanic membrane perforation. Any persistent disorder in tympanic membrane that's accompanied via recurrent otorrhoea can result in the onset of CSOM. [13]Amongst the study groups, 34.6% of the cases have been found to have CSOM indicating it as the most commonplace otological ailment and fifty six.8% of which were located to be affected by listening to loss. The frequency of squamous-CSOM become extra compared to mucosal-CSOM that is corresponding to the outcomes of the Panda MK et al and Chowdhury MA, et al research. [14, 15]

Amid the instances of excessive frequency hearing loss, only 52.3% of the patients having squamous-CSOM had important perforations. It become also observed that CHL and combined kind of hearing loss was discovered to be greater drastically related with squamous-CSOM even as blended hearing loss turned into extra universal in mucosal-CSOM. The result on the distribution sample of hearing loss within the look at showed variation from the Marseglia GL,et al.research [16].The current study also found out that sinusitis, tonsillopharyngitis, tinnitus and vertigo had been the not unusual associated co-morbidities of CSOM. The prevalence of OM is motivated by using many elements which include ethnicity, age, intercourse, weather, socioeconomic status and so on. Earlier research has mentioned male preponderance in OM representing an extra amount of work-related and environmental exposures.Though some studies indicated female preponderance even as others indicated no disparity. Our study male preponderance turned into excessive in all of the subtypes besides squamous-CSOM wherein the superiority of women turned into barely extra and the commentary become in settlement with the preceding take a look at. [17]Studies have mentioned that the superiority of OM is also prompted with the aid of seasonal variations taking place at distinct geographic and climatic zones. [18] It became discovered in the gift take a look at that there may be a considerable affiliation of wintry weather season with ASOM and OME, squamous-CSOM with summertime, and mucosal-CSOM with the wet season.

The purpose for the frequency of OM in winter might be because of extended upper breathing tract infections that allow the superiority of nasopharyngeal pathologies leading to middle ear infections. In case of squamous-CSOM topics, the occurrence is seen greater in summer which might be due to longer persistence of center ear infections. Incidence of unilateral form (56.1%) is greater in all of the subtypes except in case of OME wherein bilaterality turned into determined to be common. The take a look at outcomes are according with the sooner research accomplished on laterality of OM.

CONCLUSION

In conclusion, the present study squamous-CSOM was found to be highly prevalent in the South Indian population. Upper respiratory tract infections were found to be prime risk factors for CSOM and adenoids for OME. OM was also found to be notably related with hearing loss and tinnitus harshly disturbing the quality of life of the patients. While Otitis Media is a condition of serious concern, further research on the genetic aspects may help to understand the underlying mechanisms for formulating better therapeutic and defensive strategies.

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