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EVALUATION OF ASSOCIATED RISK FACTORS IN CHRONIC SUPPURATIVE OTITIS MEDIA PATIENTS REPORTED IN COMMUNITY HEALTH CENTER, CHENANI

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Abstract

Background: Chronic suppurative otitis media or CSOM is characterized by recurrent or persistent ear discharge, or otorrhoea, for a period of 2 to 6 weeks, through the tympanic membrane perforation. Studies often present a varying incidence of CSOM, but it is the most important cause of deafness in India. Risk factors are mainly associated with low socioeconomic status, crowded atmosphere, low parental education level, poor nutrition, frequent upper respiratory tract infection and chronic diseases.

Methods: A retrospective- observational study of 300 patients of CSOM, selected from OPD of the Department of Otorhinolaryngology, CHC, Chenani, Udhampur, Jammu, J&K, was conducted during August 2018 to January 2019. Detailed clinical examination was done and statistical socio-demographic analysis was performed. Associated factors of CSOM were also recorded and a resultant chart was obtained.

Results: Our study showed that urban as well as rural poor were equally affected population. Highest incidence found in the range of 11 to 20 years (36.67%), with only 54 (17.67%) cases reported for age group: 41 and above. 55.33% of cases pertained to lower Socio-economic status with major occupational incidence amongst urban labour class (82/300, i.e. 27%). The major contributing factor for CSOM came out to be the crowded living conditions (52.0%) and aseptic and unsupervised handling or ears (49.0%).

Conclusions: Congestion and crowded household, bathing in contaminated ponds and canals, unsterile ear piercing, constituted significant risk factors, therefore preventive strategies and awareness program, based upon the above, should be planned to counter the burden of CSOM.

Key words: Chronic Suppurative Otitis Media (CSOM), Ear Discharge, Socio-demographic Status

Introduction

Chronic suppurative otitis media (CSOM), having remained relatively higher in resource–poorer countries, now a global disease.[1] Varying incidence of 2.55% to 9.25%, of chronic suppurative otitis media has been reported.[2] WHO defines CSOM as "stage of ear disease in which there is a chronic infection of the middle ear cleft i.e. Eustachian tube."[3] It is characterized by recurrent or persistent ear discharge, or otorrhoea, for a period of 2 to 6 weeks, through the tympanic membrane perforation. Usually, CSOM begins as a complication of persistent acute otitis media (AOM) with perforation in childhood. [4] CSOM is the most important cause of deafness in India. It often takes a considerable amount of clinic and operating time of otolaryngologists.[5] Ghosh and Dubey found that in comparison to nonsuppurative OM, incidence of CSOM in developing countries is more, possibly due to lack of awareness, low socioeconomic status and increased susceptibility to upper respiratory tract infections.[6] Risk factors for CSOM are generally the factors associated with low socioeconomic status and inadequate healthcare that includes living in crowded atmosphere (including those living in a large family). Risk factors are also associated to low parental education level, poor nutrition, smoke exposure, history of tympanostomy tubes, frequent upper respiratory tract infection & nasopharyngitis and chronic diseases.[7] Thus, the present study aimed to identify socio-demographic factors associated with chronic suppurative otitis media.

Material and Methods:

The present retrospective- observational study comprised of 300 patients with history of discharge from ear along with perforation. The cases were selected from OPD of the Department of Otorhinolaryngology, Community Health Center, Chenani, Udhampur, Jammu, J&K, over a period of six months, i.e. from August 2018 to January 2019. Detailed clinical examination along with history was taken as per proforma. Specific emphasis was given on the socio-demographic factors associated with chronic suppurative otitis media. Sample collection was conducted under aseptic conditions to find out presence of fungal infection, using a bulb syringe. Rubber bulb was squeezed; the needle was put in middle ear and rubber bulb as subsequently released. Secretions were sucked into the sterilized vial and were sent for fungal culture. If secretions are scanty in amount, they may not come in vial, then needle is detached from tube and secretions are pushed on sterilized swabs with syringe. If

needed, small amount of saline can be pushed through needle to make pus come out of swabs.

The study protocol was approved by Institutional Ethical Committee, and an informed & written consent was obtained from each patient. Associated factors of CSOM were also recorded and a resultant chart was obtained. Statistical analysis was done using Microsoft Excel 2010.

Results:

The present study comprised of 300 cases of chronic suppurative otitis media. Study group comprising of 53.67 % males and 46.33 % females with highest incidence found in the range of 11 to 20 years (36.67%). Even children below 10 years of age showed up in significant numbers (23.67%), however, for people older than 21 years, there was significantly lower prevalence, with only 54 (17.67%) cases reported for age group: 41 and above. (Table 1)

Table 1: Incidence of CSOM among various age groups and gender:

Age Group	Cases Studied			
	Males	Females	No of Cases	No %
0 to 10 years	37	34	72	23.67
11 to 20 years	58	52	113	36.67
21 to 30 years	18	18	36	12.00
31 to 40 years	17	13	31	10.00
41 to 50 years	12	9	21	7.00
Above 50 years	19	13	33	10.67
Total:	161	139	300	

Most of the cases (55.33%) pertained to lower Socio-economic status with major occupational incidence amongst urban labour class (82/300, i.e. 27%). (Table 2)

Table 2: Incidence of CSOM among Socio-economic and occupational classes

Status	No of Cases	%
Socio Economic Status		
Lower	166	55.33
Upper lower	110	36.67
Lower Middle	19	6.33
Upper Middle	4	1.33
Upper	1	0.33
Occupational Background		
Labor class (temp. employed)	96	32.0
Agriculture (as primary occupation)	78	26.0
Students	55	18.33
House Wives	19	6.33
Place of Residing		
Rural	167	55.67
Urban	133	44.33

The major contributing factor for chronic suppurative otitis media came out to be the crowded living conditions (52.0%) and aseptic and unsupervised handling or ears (49.0%), mostly by the patients themselves. (Table 3)

Table 3: CSOM and associated factors:

Sr no	Factors	N(%) of patients
1	Living in crowded conditions	156 (52.0%)
2	Living in a large family	92 (30.67%)
3	Cleaning ears with aseptic things like matchsticks, hairpins, etc	147 (49.0%)
4	Bathing in contaminated ponds and canals	132 (44.0%)
5	Unsterile ear piercing	39 (13.0%)
6	Poor nutrition	48 (16.0%)
7	Frequent upper respiratory tract infections and nasopharyngitis	16 (5.33%)
8	Chronic diseases like measles, TB, diabetes, cancer, etc	10 (3.33%)
9	Low parental education	44 (14.67%)
10	Passive Smoking	42 (14.0%)

Risks associated with living in crowded conditions and crowded habitats are certainly reflected in disease development infectious and chronic diseases, upper-respiratory tract infections and that of CSOM as well. (Figure 1)

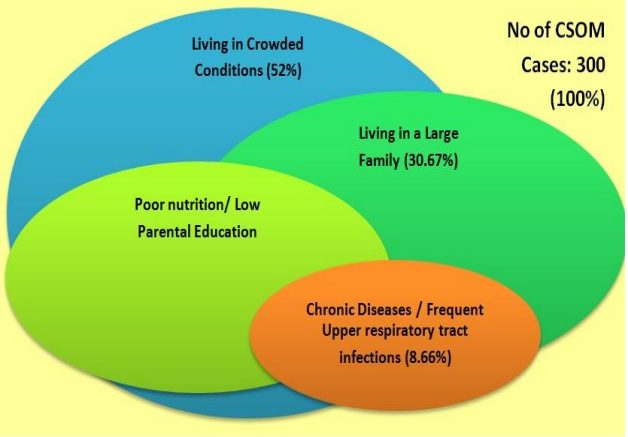

Figure 1: Relationship diagram between prevalence of CSOM and associated factors

Discussion:

Chronic suppurative otitis media (CSOM) is defined as a chronic inflammation of the middle ear and mastoid cavity, which presents with recurrent ear discharges or otorrhoea through a tympanic perforation. The disease usually begins in childhood as a spontaneous tympanic perforation due to an acute infection of the middle ear, known as acute otitis media (AOM), or as a sequel of less severe forms of otitis media.[8] Occassionally, children with acute otitis media with perforation will go on to develop chronic suppurative otitis media. In developed countries, chronic suppurative otitis media is now very uncommon disease and mostly occurs as a complication of tympanostomy tube insertion. However, in other societies, it occurs as a complication of acute otitis media with perforation.[9]

Our study showed that urban as well as rural poor were equally affected population; however 55.67% belonged to the rural areas and 44.33% belonged to the urban Jammu. Bathing in contaminated ponds and canals, unsterile ear piercing was among the major source of infections arising out of unhygienic practices common among those children. Upon evaluation of socio-demographic risk factors of CSOM, congestion and crowded household, malnutrition and prolognged bottle feeding constituted significant risk factors and same was found by Lasisi AO et al.[10] A study in Yemen conducted in the year: 2015 reported bathing and swimming in local pools, recurrent respiratory infections and overcrowded housing, as the strongest predictors for CSOM,[11] quite similar to our findings as well.

Better ear care, early screening and early detection has a potential to prevent and counter the disease, but this study limits us to study the scope of such preventive strategies, for which some prospective cross-sectional studies may be needed. Socio-demographic profiles play a significant role and therefore a careful study may be conducted of other demographic variants as well.

Conclusion:

Crowded conditions of living along with some definite factors like poor nutrition, low parental education and upper respiratory tract infections are sure risk factors in CSOM. Preventive strategies and awareness program should be planned well in advance to counter the burden of CSOM in developing countries like India.

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