



TO STUDY PREVALENCE AND ETIOLOGICAL AGENTS CLINICAL IMPEDIMENT OF CHRONIC SUPPURATIVE OTITIS IN A TERTIARY CARE HOSPITAL PONDICHERRY

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ABSTRACT

Chronic suppurative otitis media is high-quality infection of the middle ear. CSOM and recurrent acute otitis media in childhood are associated with adult hearing loss, underlining the importance of optimal treatment in these conditions. CSOM has acquired significant interest, not only because of its high prevalence and chronicity but additionally due to issues inclusive of drug resistance and ototoxicity with each topical and systemic antibiotic. In present study we clinical impediment of CSOM and its etiological agents in patients acknowledge at tertiary care hospital: This prospective, observational study was conducted in department of ENT in patients in age group 19 to 60 years with a clinical diagnosis of CSOM. Total 150 patients were included in present study. Men 56% were more than women 44%. We considered only 19-60 years age group. Among all patients age group 19-30, 31-40, 41-50 and 51-60 years incidence was noted as 23%, 21%, 32% and 24% respectively. Mean age in present study was 12.5 ± 6.93 years. In present study 13% atticoantral type (unsafe) less than tubotympanic type (safe) was more common 87% in present study. Improvement of health care facilities and awareness among health-care providers for early treatment would definitely be helpful in reducing the further hearing loss and other complications.

Keywords: - Chronic Suppurative Otitis, tubotympanic, atticoantral type and Mastoidectomy.

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INTRODUCTION

India is one of the countries with highest CSOM incidence (>6%) in which urgent interest is wanted. Chronic suppurative otitis media is high-quality infection of the middle ear. Each year consists of three episodes. [1] The world health organism defines CSOM as "otorrhea through a perforated tympanic membrane present for at least two weeks" [2] CSOM can occur when acute otitis media (AOM) causes acute perforation of the tympanic membrane or when AOM occurs in conjunction with chronic perforation or tympanostomy tubes. [3] The most common sequelae of CSOM is conductive or sensorineural hearing loss. The disease is particularly labeled into two groups: tubotympanic and

atticoantral relying on whether the sickness manner impacts the pars tensa or the pars flaccida of the tympanic membrane. [4]

The danger of Otitis media is divided into two types. Intra temporal headaches consist of mastoiditis, petrositis, facial paralysis and labyrinthitis. The intracranial headaches encompass extradural abscess, subdural abscess, and meningitis and mind abscess. CSOM is a common purpose of hearing impairment in growing countries. [5] the infection of the middle ear pursues viral sicknesses of the upper respiratory tract but before long attacks the center ear with pyogenic organisms.

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The majority of these infections are because of micro organism. The indiscriminate, vague, mistaken, and haphazard use of antibiotics have caused the emergence of multiple resistant lines of micro organism, which could produce in cooperation primary and post-operative infections. [6]

Development of risks depends on high virulence of organism, bad resistance of sufferers, insufficient antibiotic remedy of acute middle ear and mastoid contamination, presence of chronic systemic disease and resistance of organisms to antibiotics that's becoming commonplace these days. [7] Due to lack of awareness and ignorance The widespread use of antibiotics has precipitated the emergence of multiple resistant strains of bacteria which can produce both primary and post-operative complications. [8] Due to the restricted microbiology research facility setup, doctors in the investigation territory recommend both of the accompanying medications: Amoxicillin, amoxicillin/clavulanic corrosive, chloramphenicol, gentamicin, or ciprofloxacin without the direction of culture and antibiotic sensitivity tests to treat patients with possible of otitis media which could prompt rise of medication obstruction. Therefore, data on antibiotic resistance should be accessible at national and neighborhood level to direct the normal utilization of the current antimicrobials. [9]

Since CSOM can cause significant morbidity, knowledge of the pathogens responsible for CSOM can assist in the selection of the most appropriate treatment regimen. The aim of this study was to clinical impediment of COSM and its etiological agents in patients acknowledge at tertiary care hospital.

MATERIAL AND METHODS

This prospective study was conducted at the Department of ENT Sri Lakshmi Narayana Institute of Medical Sciences, Pondichery , over a period of 1 year from January 2017 to December 2018. A total of 150 patients with CSOM of all age groups and both sexes attending ENT OPD and those admitted in ENT IPD were selected for the study. Study was accredited with the aid of the human ethics committee.

A written informed consent for participation was taken from parents/guardians. Patients in age group 19 to 60 years with a clinical diagnosis of CSOM, were included present study. Patients less than 19 years or more than 60 years, clinical diagnosis of ASOM, otitis

externa or other conditions were excluded. All the study subjects were subjected to detailed history taking, clinical ear, nose and throat (ENT) examination, audiometry. Standard instruments used for routine ENT checkup. The incidence of chronic form of suppurative otitis media in the patients was divided into a) Tubotympanic type (safe): active, quiescent and inactive state b) Atticoantral type(unsafe):It is posterosuperior marginal perforation and perforation of pars flaccida, retractions with granulations and or cholesteatoma at similar site were included under this heading. Data entered in Microsoft excel, analysed and expressed in percentage. Statistical analysis was done using descriptive statistics.

RESULTS

Total 150 patients were included in present study. Men 56% were more than women 44%. We considered only 19-60 years age group. Among all patients age group 19–30, 31-40, 41–50 and 51-60 years incidence was noted as 23%, 21%, 32% and 24% respectively. Mean age in present study was 12.5± 6.93 years. In present study 13% atticoantral type (unsafe) less than tubotympanic type (safe) was more common 87% in present study.

Unilateral disease was seen in (74.6%) patients and in only 38(25%) bilateral disease was noted. In present study showed hearing loss was normal, sensorineural, conductive, and mixed in 23%, 49%, 15% and 13% patients respectively. In 73% patients less than 40 dB hearing loss was noted while in rest 27% patients more than 40 dB hearing loss was noted.

Our study showed Ear discharge 94.6% more prominent symptoms followed by nasal discharge, earache. Tinnitus (50.6%) Fever (50%), Vertigo (45%), snoring (35.3%), jugular nodes (30.6%) post nasal drip (28.9%), facial pain (5%) and cheek pain (12%) in present study.

Tonsillopharyngitis (64%), allergic rhinitis (58%), asthma (50%), were nasopharyngeal co-morbidities observed in present study followed by sinusitis (30%), nasal polyps (14.6%) and adenoids (10%).

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Tables 1: General characteristics of CSOM

Characteristic	No. of patients	percentage
Sex		
Men	84	56%
women	66	44%

Age of on set		
16-30	35	23%
31-40	32	21%
41-50	52	35%
51-60	39	26%
Otosopic findings - Laterality		
Unilateral	112	74.6%
Bilateral	38	25%
Degree of hearing loss (decibels-dB)		
<40 dB	98	65.3%
>40 dB	35	23%
Type		
Tubotympanic type (safe)	130	87%
Atticoantral type (unsafe)	20	13%
Types of hearing loss		
Normal hearing loss	35	23%
sensorineural	73	49%
conductive	23	15%
Mixed hearing loss	20	13%

Table 2: Distribution of symptoms of COSM

Parameters	No of patients	Percentage
Fever	75	50%
Nasal discharge	121	80.6%
Ear discharge	142	94.6%
Vertigo	67	45%
Ear ache	98	65.3%
Post nasal drip	43	28.9%
Facial pain	28	18.6%
Jugular nodes	46	30.6%
Snoring	53	35.3%
Cheek pain	21	14%
Tinnitus	76	50.6%

Table 3: Division of nasal/nasopharyngeal co-morbidities

Parameters	No of patients	Percentage
Asthma	75	50%
sinusitis	62	41%
adenoids	15	10%
Allergic rhinitis	87	58%
Nasal polyps	22	14.6%
Tonsillopharyngitis	96	64%

Table 4: Prevalence of complications

Parameters	No of patients
Temporal lobe abscess	2
Post-auricular fistula	3
Mastoiditis	1
Pyogenic meningitis	4
Facial nerve palsy	2
Post-auricular abscess	5

DISCUSSION

Among all ear diseases, ear infections are a common but treatable cause adults, OM is the commonest cause of persistent mild to moderate hearing impairment.⁸ High prevalence of CSOM may be frequently infected with upper respiratory tract infection along with speech development disorders, poor academic and educational development and lower overall quality of life. [10]

In our country, the main predisposing factor for Otitis media is occur lower Socio-economic status. Overcapacity, reduced hygiene and sanitation, insufficient fitness care and schooling and malnutrition lead to upper respiration tract contamination consisting of otitis media. Usually CSOM can spread from middle ear to vital structures such as brain leading to mastoid abscess, meningitis and intracranial abscess facial nerve, labyrinth, lateral sinus, mastoid meninges and, facial nerve paralysis, deafness, lateral sinus thrombosis. [11]

Early diagnosis and management can prove to be effective, in reducing socioeconomic burden and prevention of deafness. [12] Different studies have resulted different prevalence of CSOM as Adhikari et al.[13] have reported a prevalence of 5.7% and Basak et al. [14] have stated a prevalence of 37.54%. This is may be due to different geographical location with respect to socioeconomic and environmental conditions and different diagnostic criteria used for diagnosing CSOM.

In present study ear pain (Otalgia) is one of the main symptoms in CSOM. And also display symptoms of an upper respiratory tract infection, abnormal ear tugging, fever, otorrhoea, hearing loss, irritability and pain increases when supine produces painless mucoid otorrhoea without fever, unless accompanied by Otitis Externa or complicated by an extra cranial or intracranial infection related complaints were noted with Shaikah N,et al. study [15].

Fever is noted more in Otitis Media than in Otitis Externa. Hearing loss is common among patients with CSOM and exceeds 40 dB and with a tendency to occur in about 50 to 60% of such patients. [16]

Safe (tubotympanic) type was more common (87%) than unsafe (atticoantral) type (13%) in present study. which is correlated with Gupta and Mittal in their study noted CSOM distribution as tubotympanic (89.43%) and atticoantral (10.57%). Unilateral disease

was seen in 76.4% patients and in only 25 % bilateral disease was noted in present study.

The frequency of unilateral disease is consider to be fine as it proffers a improved prognosis in limiting the danger of disability from accompany hearing loss than for bilateral disease. In present study 38 among the 150 patients most of the patientswre 31-40 which is correlated with Rakesh kumar et al study [17]. CSOM was found to be more common in male patients (56%) than in female (44%) patients.

In the present study the most common organisms for CSOM are pseudomonas aeruginosa (52.3%); Staphylococcus aureus (35.6%) Staphylococcus aureus was more sensitive to linezolid and vancomycin and majority of gram negative isolates were sensitive to meropenem [18-21].

The two fundamental pursuits of control are eradicating infection and the closure of the tympanic perforation. If the perforation is not near and the discharge doesn't recur after conservative treatment, tympanoplasty and mastoidectomy are carried out repair listening to loss and remove the contamination and used powerful antibiotics available. CSOM still consumes considerable medical expenditure due to in the poorer sections of the society.

CONCLUSION

Chronic suppurative otitis media is a major health problem in many populations around the world and a significant cause of morbidity and mortality. It is particularly common in developing countries. It is a major cause of hearing impairment and the effect is major concern particularly in children, because it may have long-term effects on early communication language development, auditory processing, psychosocial and cognitive development and educational progress. Complications of COSM are a great concern for clinical practice & public health. High level of awareness in patients regarding these complications and utility of early clinical detection and the appropriate treatment modalities are required to decrease. Improvement of health care facilities and awareness among health-care providers for early treatment would definitely be helpful in reducing the further hearing loss and other complications.

REFERENCES

1. Acuin, J. (2007). Chronic suppurative otitis media. *Clinical Evidence BMJ*, 2(507), 1-20.
2. World Health Organization (WHO). (n.d.). CSOM.
3. Morris, P. S., & Leach, A. J. (2009). Acute and chronic otitis media. *Pediatric Clinics of North America*, 56, 1383-1399.
4. Verhoeff, M., van der Veen, E. L., Rovers, M. M., Sanders, E. A. M., & Schilder, A. G. M. (2006). Chronic suppurative otitis media: A review. *International Journal of Pediatric Otorhinolaryngology*, 70, 1-12.

5. Ettehad, G., Refahi, S., Nemmati, A., Piradeh, A., & Daryani, A. (2006). Microbial and antimicrobial susceptibility patterns from patients with chronic otitis media in Ardebil. *International Journal of Tropical Medicine*, 1, 62-65.
6. Ali, A., Naqvi, S. B., & Sheikh, D. (1998). Resistance pattern of clinical isolates from cases of chronic ear infection II. *Pakistan Journal of Pharmaceutical Sciences*, 11, 31-37.
7. Acuin, J. (2004). Chronic suppurative otitis media: Burden of illness and management options. Geneva: World Health Organization.
8. Ettehad, G., Refahi, S., Nemmati, A., Pirzadeh, A., & Daryani, A. (2006). Microbial and antimicrobial susceptibility patterns from patients with CSOM in Ardebil. *International Journal of Tropical Medicine*, 1(2), 62-65.
9. Hailu, D., Mekonnen, D., Derbie, A., Mulu, W., & Abera, B. (2016). Pathogenic bacteria profile and antimicrobial susceptibility patterns of ear infection at Bahir Dar regional health research laboratory center, Ethiopia. *SpringerPlus*, 5, 466.
10. Baumann, I., Gerendas, B., Plinkert, P. K., & Praetorius, M. (2011). General and disease-specific quality of life in patients with chronic suppurative otitis media—a prospective study. *Health and Quality of Life Outcomes*, 9, 48.
11. Wiwanitkit, S., & Wiwanitkit, V. (2012). Pyogenic brain abscess in Thailand. *North American Journal of Medical Sciences*, 4, 245-248.
12. Gupta, R., & Mittal, M. (2016). A study on clinical and epidemiological profile of chronic suppurative otitis media (CSOM) at a tertiary care center. *International Journal of Medical Science and Public Health*, 5(5), 1021-1024.
13. Adhikari, P., Kharel, B., Ma, J., Baral, D. R., Pandey, T., Rijal, R., et al. (2008). Pattern of otological diseases in school-going children of Kathmandu Valley. *International Archives of Otorhinolaryngology*, 12(4), 50.
14. Basak, B., Gayen, G. C., & Ray, R. (2013). Pattern of aural morbidity among children in a rural tertiary care hospital. *IOSR Journal of Pharmacy*, 3(7), 58-62.
15. Shaikah, N., Hoberman, A., Kaleida, P., et al. (2010). Diagnosing otitis media: Otoscopy and cerumen removal. *New England Journal of Medicine*, 20, e62.
16. Azevedo, A. F., Pinto, D. C., Souza, N. J., Greco, D. B., & Gonçalves, D. U. (2007). Sensorineural hearing loss in chronic suppurative otitis media with and without cholesteatoma. *Revista Brasileira de Otorrinolaringologia*, 73(5), 671-674.
17. Rakesh Kumar, P., Srivastava, M., Sharma, S., Rishi, P. S., Nirwan, K., & Hemwani, et al. (2013). Isolation and antimicrobial sensitivity profile of bacterial agents in chronic suppurative otitis media patients at NIMS hospital, Jaipur. *International Journal of Pharmaceutical and Biological Sciences*, 3(4), 265-269.
18. Sattar, A., Alamgir, A., Hussain, Z., Sarfraz, S., & Nasir, J. (2012). Bacterial spectrum and their sensitivity pattern in patients of chronic suppurative otitis media. *Journal of the College of Physicians and Surgeons Pakistan*, 22(2), 128-129.
19. Gül, H. C., Kurnaz, A., Turhan, V., Oncül, O., & Pahsa, A. (2006). Microorganisms isolated from middle ear cultures and their antibacterial susceptibility in patients with chronic suppurative otitis media. *Kulak Burun Bogaz Ihtisas Dergisi KBB*, 16(4), 164-168.
20. Ferede, D., Geyid, A., Lulseged, S., & Melaku, A. (2001). Drug susceptibility pattern of bacterial isolates from children with chronic suppurative otitis media. *Ethiopian Journal of Health Development*, 15(2), 89-96. <https://doi.org/10.4314/ejhd.v15i2.9882>
21. Aduda, D. S., Macharia, I. M., Mugwe, P., Oburra, H., Farragher, B., Brabin, B., & Mackenzie, I. (2013). Bacteriology of chronic suppurative otitis media (CSOM) in children in Garissa district, Kenya: A point prevalence study. *International Journal of Pediatric Otorhinolaryngology*, 77(7), 1107-1111.

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