

Original Article

Anaerobic Profile For Chronic Suppurative Otitis Media in a Tertiary Care Setup of Kanpur.

Nashra A¹, Sujatha R², Deepak S³

1. Phd scholar, Department of Microbiology, Rama Medical College Hospital and Research Centre Kanpur (India)
2. Prof and Head, Department of Microbiology, Rama Medical College Hospital and Research Centre Kanpur (India)
3. Tutor, Department of Microbiology, Rama Medical College Hospital and Research Centre Kanpur (India)

ABSTRACT

Background: Chronic suppurative otitis media (CSOM) is a serious infection and a major health problem in developing countries causing serious local damage and threatening complications. Early and effective treatment based on the knowledge of causative microorganisms and their antimicrobial sensitivity ensures prompt clinical recovery and possible complications can thus be avoided. **Objective:** The objective of this study was to isolate the anaerobic organisms associated with CSOM and to detect the prevalence of anaerobic bacterial infection. **Method:** The study was conducted on 100 cases of recurrent discharging ear at the out patient door of Deptt of E.N.T and Dept. of Microbiology, Rama Medical College Hospital and Research Centre, Mandhana Kanpur. **Results:** Out of 100 cases, 10 were found to be anaerobic bacterial positive having the prevalence rate of 10%. Females are affected more (54%) than males. The total number of anaerobic bacteria isolated is 10 (10%). Among the anaerobes Bacteroides species is most common 5 (50%).

Key words: Chronic suppurative otitis media, Fungal infection, anaerobic organisms, antibiotics.

INTRODUCTION

Chronic Suppurative Otitis Media (CSOM) is defined as infection of the middle ear that lasts for more than three months and is accompanied by otorrhoea and tympanic membrane perforation. Chronic suppurative otitis media (CSOM) is a commonly encountered infection of the middle ear. It can cause extra cranial and intracranial complications and involves considerable morbidity [1, 2]. It is defined as chronic or intermittent otorrhea through a persistent non-intact tympanic membrane [3]. CSOM, whether attico-antral or tubo-tympanic disease, is associated with mixed bacterial flora. With improved isolation techniques, a significant number of isolates (20–50%) are likely to be anaerobic. Chronic Suppurative Otitis Media can cause complications like facial nerve paralysis, meningitis, intracranial and extra cranial abscesses if left untreated. [4] Identification of the aetiological organisms not only aids in the diagnosis and improves the management of patients, but also assists in advising the patients about the modes of spread, methods of prevention and anticipating the possible complications.

MATERIAL AND METHODS

This hospital based cross sectional study was carried out for a period of six months (July 2017 to December 2017) in the Department of Microbiology, Rama Medical College Hospital and Research Centre. Patients attending ENT, OPD and IPD at Rama Medical College Hospital and Research Centre formed the source of the sample for the study.

Total 100 patients clinically diagnosed chronic suppurative otitis media having discharging ear with past history of local use of antibiotics and steroid till 7 days before were taken in account.

Second swab used for anaerobic culture was inoculated in Robertson's cooked meat (RCM) / Thioglycolate sulphate broth and incubated at 37⁰C for 7days. If turbidity appear, sub-cultures was done from RCM on Blood agar in anaerobic jar. The jars was closed and incubated at 37⁰C for 72 hrs and thereafter, The isolates from the culture plates were identified using Gram staining, colony morphology and anaerobic kit (ANAEROTest 23).[5]

For anaerobic culture: Pus is inoculated in RCM broth/Thioglycolatesulphate at 37⁰C for 7 days. If turbidity seen then subculture was done from RCM on Blood agar plate and Incubate at 37⁰C for 72 hours in anaerobic jar. Identification was done using gram into one of the following :

1. Gram negative rods.
2. Gram positive spore- forming rods.
3. Gram positive non-spore forming rods.
4. Gram positive cocci.

Then the Preparation of inoculums from a pure, 48 hours culture in the Suspension Medium for ANAEROTest 23 was done. Finally we Carry out the identification within the respective group by means of the Identification tables or by using the Code Book.

RESULTS

Sample from hundred clinically diagnosed cases of Chronic suppurative otitis media attending ENT OPD and IPD Hospital and were studied in the Department of Microbiology, Ram Medical College Hospital and Research centre.

Sex	Total no. of Cases studies	Total no. of positives	Percentage
Male	46	34	44.7%
Female	54	42	55.3%
Total	100	76	100%

Table-1 : Sexwise distribution of CSOM cases.

Out of hundred cases 46 were males and 54 were females, out of 46 males studied 44.7% were positive and out of 54 females 55.3% were positive for the culture. Above table shows incidence of CSOM was higher in females compare to males.

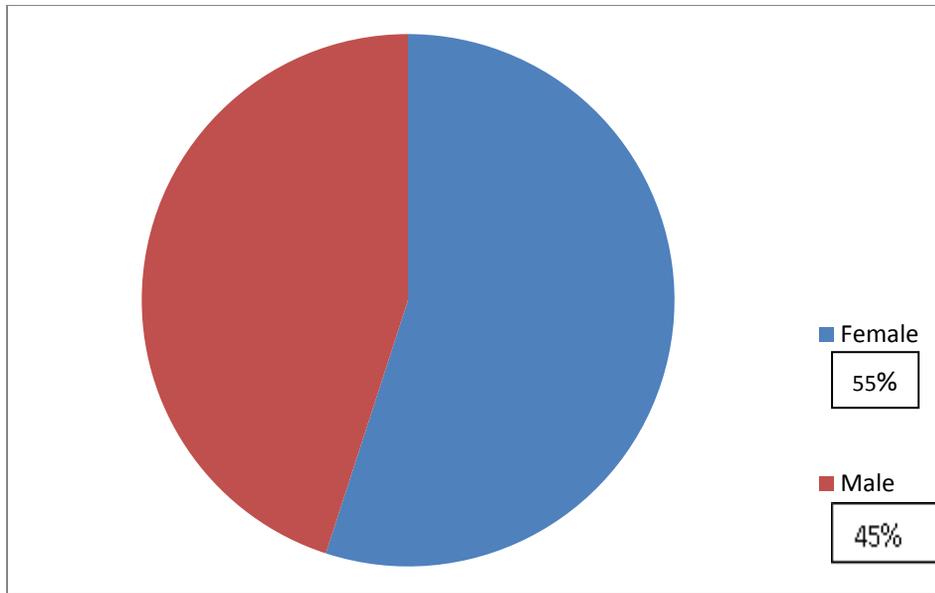


Fig-1: Sexwise distribution

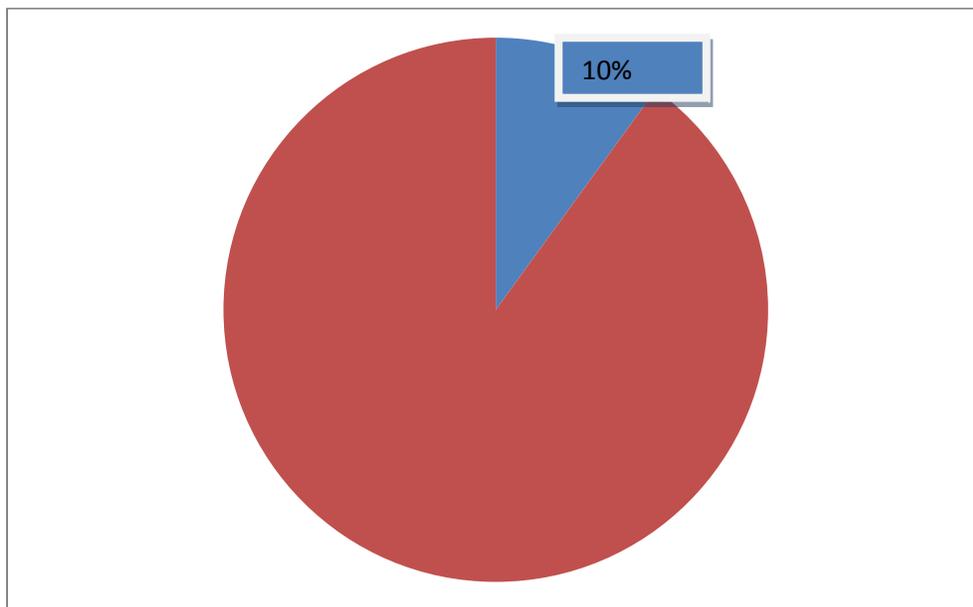


Fig-2: Prevalence rate of CSOM IS 10%

The total number of anaerobic bacteria isolated is 10 whereas, the Prevalence rate is 10%. Among the anaerobes Bacteroids is most common.

ANAEROBIC BACTERIA	NO. OF ISOLATES (n= 10)	%
Bacteroids species	5	50%
Atopobium Parvulum	1	10%
Peptostreptococcus	4	40%

Table-2 : Shows the total number of anaerobic bacteria isolated in the present study.

The total number of anaerobes isolated is 10 (10%). Among the anaerobes Bacteroids species is most common (50%).

Discussion

In CSOM, bacteria gain access to the middle ear either from the nasopharynx through the eustachian tube or from the external auditory canal through a non-intact tympanic membrane [2]. Overall prevalence rate of anaerobic infection among the chronic suppurative patients in this study was 10% whereas, anaerobic bacteria formed 15.6% of all isolates, which is in similar agreement with previous observations of 20–50% of all CSOM infections attributed to anaerobes [6]. Some of the previous studies have not found significant association of anaerobes with CSOM [1, 6, 7]. Even though anaerobes are thought to play a pathogenic role in CSOM, the large variability in their isolation rates among different studies may be due to differences in sampling and processing techniques, prior use of antibiotics and differences in the timing of sampling during the course of the disease.

CONCLUSION

Out of hundred cases 46 were males and 54 were females, out of 46 males studied 44.7% were positive and out of 54 females 55.3% were positive for the culture. The incidence of CSOM was

higher in females compare to males. In the era of increasing drug resistance among bacteria, periodic monitoring of the microbiological profile of CSOM along with clinical correlation is essential as exact choice of antibiotics for empiric therapy depends on the local antibiotic policy, followed by modification in therapy based on the culture and sensitivity results. Before administering antibiotics, either local or systemic, culture of aural discharge should be performed in all CSOM patients.

REFERENCES

1. Loy AHC, Tan AL, Lu PKS (2002) Microbiology of chronic suppurative otitis media in Singapore. Singapore Med J 43:296–299
2. Verhoeff M, van der Veen EL, Rovers MM, Sanders EAM, Schilder AGM (2006) Chronic suppurative otitis media: a review. Int J Pediatr Otorhinolaryngol 70:1–12
3. Youngs R (1998) Chronic suppurative otitis media. In: Ludman H, Wright T (eds) Diseases of the ear, Chapter 27–29, 6th edn. Arnold Publishers, London, pp 374–41
4. Bluestone CD, Klein JO. Chronic suppurative otitis media. Pediatrics in Review.1999; 20; 8:2779.
5. Mackie & McCartney. Practical medical microbiology 14 edition. “Churchill livingstone An imprint of Elsevier” 2006.
6. Olu Ibekwe A, Shareef ZA, Benayam A (1997) Anaerobes and fungi in chronic suppurative otitis media. Ann Otol Rhinol Laryngol 106:649–652
7. Indudharan R, Ashraful Haq J, Aiyar S (1999) Antibiotics in chronic suppurative otitis media: a bacteriological study. Ann Otol Rhinol Laryngol 108:440–445

CORRESPONDING AUTHOR

Dr. R.Sujatha

Professor and Head of Department of Microbiology

Rama Medical College Hospital & Research Centre, Mandhana, Kanpur, U.P.

EmailID: drsujatha152@gmail.com