

EDITORIAL

CSOM A BACTERIOLOGICAL STUDY

Abstract : Chronic suppurative otitis media is a common disease affecting 4 to 14 % population of India hence proper and effective medical management has to be attempted to prevent complications or surgery at least in tubotympanic disease¹. In this prospective randomized study 102 patients were registered. The study showed the maximum incidence of staphylococcus aureus(33.33 %) followed by pseudomonas aeruginosa (26.47%) and proteus (16.66%) which were sensitive to oral antibiotics levofloxacin and clindamycin and injectable :- amikacin, imipenem and piperacillin. The role of aural toilet in the form of dry mopping, daily microsuction with oral decongestant antihistaminic was reconfirmed in this study

Key word : CSOM, Bacteriological Study, Antibiotics Aural Toilet

INTRODUCTION

Chronic suppurative otitis media may be defined as infection of mastoid of more than six weeks duration with perforation of tympanic membrane and suppurative discharge which may be continuous or recurrent, with or without intratemporal or intracranial complications. It may be divided in two groups safe and unsafe. Safe is also termed as tubotympanic as per etiology. The tympanic membrane is involved in majority of cases due to Eustachian tube dysfunction but some cases are due to traumatic perforation with secondary infection or otitis externa weather bacterial or fungal involving the middle ear.

The unsafe CSOM is also termed as attic or marginal

perforation. With changing socioeconomic condition, better education and better surgical facilities patient is reporting early hence the incidence, morbidity and mortality has significantly gone down in last one decade.

The CSOM patients are substantial in number in ENT OPD and its incidence varied in India from 4 to 14 percent leading to deafness initially conductive but later some sensorineural component is usually present¹.

The chronic suppurative otitis media, tubotympanic variety is due to inadequate and incomplete management, if judicious use of antibiotic of desired duration is used with proper aural toilet, significant number of cases may be cured at initial stage as the perforation of less than three month duration heals in sufficient

number of cases, hence this prospective study was designed to find out the invading bacteria and appropriate antibiotic along with role of aural toilet.

This study was conducted at Indian Institute of Ear Diseases Muzaffarnagar from 1st January 2009 to August 2009, a total of 102 patients were registered in this study. The age range was from 5 years to 64 years.

A detailed medical history was recorded which included ear discharge and its duration, hearing status, previous ear surgery, trauma, previous U R TI or attack of tonsillitis along with any systemic disease specifically diabetes and or hypertension, tuberculosis allergic or immunological disorder.

Complete physical examination general as well as ENT examination was performed, a special attention was paid to nasal allergy, polyp or deviated nasal septum, presence of tonsillitis or adenoiditis. In Ear examination apart from scar of surgery, deformity of pinna or external auditory canal. Otomicroscopic examination was performed in all ears to note the presence of pus, granulation, polyp, size and site of perforation, cholesteatoma and foreign body.

Swab for culture and sensitivity was taken from the discharging ear under strict aseptic condition with all precautions, cotton swab not to touch the external auditory canal.

The extent auditory canal was mopped with dry cotton followed by cleaning with rectified spirit, the sample was collected from the most medial part of canal with cotton swab and immediately transferred to sterile tube. The specimen was cultured using routine media i.e. blood agar, chocklate agar, macconkey's agar. Sabaeraud dextrose agar was also used. Plates not showing growth after 48 hours were considered negative and sensitivity testing for antibiotics was done using disc diffusion method. The isolated bacteria were tested for a panel of antibiotics including topical agents.

The patients were divided in two group each group included 51 patients 23 of cholesteatoma and 28 Of tubo tympanic disease. In group one, after taking pus sample patient was put on empirical oral antibiotic, ear drops, second identical group patients were put on dry mopping, microsuction after putting the 1.5% vinegour, and antibiotic topically was tried empirically followed by definite antibiotic after culture and sensitively. In all patients of tubo tympanic disease decongestant and negative valselva was advised.

RESULT

102 patient were registered for this prospective study out of which 74 were male and 28 were female age and sex distribution is shown in Table no. I.

Age	Male no.		Female no.		Total
		%		%	
5-15	22	21.57	4	3.92	26
15-25	30	29.41	12	11.76	42
25-45	16	15.69	9	8.82	25
45-64	6	5.88	3	2.94	9
Total	74	72.55	28	27.45	102

Table-I : Age & Sex distribution

There were gross dominance of male over female and which was highest in the age group of 5-15 years but comparing the whole group incidence of female was more in the age group of 25-45 years.

The left sided predominance was seen in 69% cases. The presenting symptoms are depicted in Table-II.

Discharge in left ear	62	60.78
Discharge in right ear	33	32.35
Discharge in both ears	7	6.86
Pain in ear	14	13.73

Table-II :Presenting symptoms

Antimicrobial agent	No. of Isolate sensitive	%
Amoxicillin	12	12.24
Azythromycin	16	16.33
Ciprofloxacin	17	17.35
Amikacin	73	74.49
Gentamycin	08	8.16
Levofloxacin	39	39.80
Pipracillin	76	77.55
Ceftadizime	68	69.39
Cefuroxime	58	59.18
Netilmycin	42	42.86
Imipenem	65	66.33
Clindamycin	49	50.00

Table IV Antimicrobial agent and their sensitivity

Pseudomonas was most sensitive to imipenem followed by pipracillin and amikacin. The next most common organism isolated was proteus 16.66% which was quite high but is consistent in Sugitae et al 21.5%⁷ while at Anifasi et al⁸, gupta et al³, including our own study¹ report a remarkably low incidence. Most of the cases of proteus were sensitive to amikacin, ceftadizime and imipenem.

The overall drug for initial trial empirically was levofloxacin, clindimycin followed by Inj. Amikacin. The separation of safe and unsafe group is important because unsafe group should be advised and motivated for a permanent relief. Monobacterial infection in this series was in 83.35% which was consistent with our previous study while observed by Asiri et al 74%², 50.5% with Ayyagari⁹ and 68.5%, by Rao¹⁰. No growth was observed in 20.58% cases while in previous study was 16% which is consistent with Asiri et al. 19.5%².

In the second group when the patient was not put on systematic antibiotics 54.90% patient responded to aural toilet, venegour, topical antibiotic and decongestant antihistaininc, which was slightly low than first group where positive response was observed in 66.66 patient. After bacteriologic study which was inconclusive in 21 patients there was positive response in 71.56% cases.

CONCLUSION

This study shows most common causative organism are staphylococcus aureus pseudomonas aerugenusa and Proteus miribalis switch to oral clindamycin, levofloxacin and injectable imipenem, amikacin and ceftadizime but aural toilet and use of vinegour should be made a routine in all cases.

The shift from gram positive to gram negative bacterial is usually by resistance of infection and invasion by gram negative bacteria, this may be the reason of growth of two or more organism.

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