

BACTERIOLOGICAL PROFILE AND ANTIBIOTIC SUSCEPTIBILITY IN CHRONIC SUPPURATIVE OTITIS MEDIA**Dr. Vikas Dhillon^{*1}, Ashok Kumar², Sanchit Menon³, Bhawna Sharma⁴, Prerna Aggarwal⁵ and Aarushi Chaudhary⁶**^{1,3}Vikas Dhillon, M.S., Senior Resident, Department of Otorhinolaryngology, Kalpana Chawla Government Medical College Karnal, Haryana, India.²Ashok Kumar, M.S., Associate Professor, Department of Otorhinolaryngology, Kalpana Chawla Government Medical College Karnal, Haryana, India.⁴Bhawna Sharma, M.D., Demonstrator, Department of Microbiology, Kalpana Chawla Government Medical College KARNAL, Haryana, India.⁵Prerna Aggarwal, M.D., Professor, Department of Microbiology, Kalpana Chawla Government Medical College Karnal, Haryana, India.⁶Aarushi Chaudhary, DGO, DNB, Consultant, Department of Obst & Gynae, Civil Hospital Karnal, Haryana, India.***Corresponding Author: Dr. Vikas Dhillon**

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INTRODUCTION

Chronic suppurative otitis media is defined as chronic inflammation of the middle ear and mastoid cavity which present with recurrent ear discharge or otorrhoea through a tympanic membrane perforation.^[1] Due to perforated tympanic membrane microorganisms can gain entry into the middle ear via external auditory canal.^[2] Most common organism found associated with CSOM are *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Proteus mirabilis*, *Klebsiella pneumoniae*, *Escherichia coli*, *Aspergillus* and *Candida*.^[3] Whatever may be the type or aetiology of CSOM, increased and irrational use of wide spectrum antibiotics, has resulted in development of resistance among bacterial isolates and change in microbial flora.^[4] Therefore, antibiotic sensitivity pattern is very important for clinicians to plan a general outline of treatment.

MATERIALS AND METHODS

The study was carried out by department of otorhinolaryngology and department of microbiology in Kalpana Chawla Govt. Medical College, Karnal (Haryana). The prospective study was carried out on 80 cases who attended the department of otorhinolaryngology during last 2 years with the complaint of ear discharge. People of all age group both sexes and different religion and with varying socioeconomic status was included in this study. Cotton tipped swab was taken from each patient and sent for culture. The culture was done on Mac Conkey agar and blood agar plates and incubated at 37° C overnight. The plates were examined next day for growth of organisms. The organisms were identified by their culture characteristics, morphology, pigment production, hemolysis on blood agar, motility and biochemical tests. The various organisms isolated were tested for their sensitivity against various antibiotics by Kirby-Bauer method as per CLSI guidelines.^[5]

RESULTS

The study was conducted on 80 patients attending department of otorhinolaryngology in Kalpana Chawla Govt. Medical College, Karnal (Haryana).

From table 1 it is evident that CSOM is more common in Males with Maximum cases of 57.5%.

Table No. 1: Sex v/s diagnosis.

Diagnosis	SEX		Total
	Male	Female	
CSOM	46 57.5%	34 42.5%	80 100%

The table 2 shows that CSOM is most common in age group 11-20 and 21-30 with maximum frequency of CSOM 35% and 27.5 % respectively.

Table No. 2: Age V/S Diagnosis.

Diagnosis	AGE							TOTAL
	1-10	11-20	21-30	31-40	41-50	51-60	61-70	
CSOM	05 6.25%	28 35%	22 27.5%	06 7.5%	08 10%	06 7.5%	05 6.25%	80 100%

From table 3 it is evident that the most common organism is pseudomonas (37.5%) followed by Staphylococcus Aureus (22.5%) and E.Coli (21.25%).

Table No. 3: Aural Swab Culture.

Diagnosis	E.Coli	H influenza	Moraxella C	Coagulase Negative Staphylococcus Species	Proteus	Pseudomonas	Staphylococcus Aureus	Sterile	Streptococcus	Total
CSOM	17 21.25%	0	0	02 2.5%	03 3.75%	30 37.5%	18 22.5%	09 11.25%	01 1.25%	80 100%

From table 4 it is evident that drug that is most sensitive to aural culture organisms is Ciprofloxacin followed by Ceftazidime and Piperacillin.

Table No. 4: Aural swab sensitivity.

Antibiotic	Frequency	Percent
Amikacin	3	3.75
Azithromycin	2	2.5
Cefotaxime	1	1.25
Ceftazidime	15	18.75
Ciprofloxacin	28	35
Co trimaxazole	4	5
Erythromycin	1	1.25
Gentamicin	1	1.25
Methicilin	1	1.25
Netilmicin	1	1.25
Penicillin-G	1	1.25
Piperacillin	13	16.25
Sterile	9	11.25
Total	80	100

DISCUSSION

Chronic Suppurative otitis Media is the most common condition seen by the Otologists. In our study CSOM is most common in age group 11-20 and 21-30 with maximum frequency of CSOM 35% and 27.5 % respectively. In our study, Majority of the patients were less than 30 years of age, which is in agreement with the previous literature.^[6,7] Males were more commonly affected than females with Maximum cases of 57.5%. A similar incidence of CSOM in males have been reported by others (Lakshmiphati et al,1965, Mishra et al, 1999, taneja et al, 1995, Poorey et al,2002). Male predominance is perhaps due to their more exposed way of life. In the present study the most common organism is pseudomonas (37.5%) followed by Staphylococcus Aureus (22.5%) and E.Coli (21.25%). Pseudomonas has been shown to be the commonest organism responsible for CSOM by many workers (Varshney et al,1999).

In our study it is evident that drug that is most sensitive to aural culture organisms is Ciprofloxacin (35%) followed by Ceftazidime (18.75%) and Piperacillin

(16.25%). This is in accordance with some investigators who found that ciprofloxacin was the most effective antibiotic against CSOM isolates.^[8,9,10,11] The mechanism of resistance is believed to be mediated by formation of biofilms by infecting organisms.^[12]

CONCLUSION

One important fact to be kept in mind is that the antibiotic susceptibility pattern of the CSOM causing organisms keeps changing. Hence, routine antibiotic susceptibility testing before treatment is recommended. The patients should also be advised to take the drugs for the complete prescribed duration without stopping in the middle. This will not only help in minimising the complications, but also help in preventing the emergence of resistant strains.

CONFLICT OF INTEREST: None.

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