



**ORIGINAL RESEARCH PAPER**

**ENT**

**COMPLICATIONS OF CHRONIC OTITIS MEDIA IN CHILDREN AND ADULTS:-A COMPARATIVE STUDY**

**KEY WORDS:** Complications, COM, Comparison

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**ABSTRACT**

**Introduction:** Though there is general decline in the incidence of complications of chronic Otitis Media, they are still frequently seen in our country. The emphasis of this study is to find out the incidence of complications of chronic otitis media in children as compared to adults.

**Materials and Methods:** This prospective study has been conducted in the Department of ENT, Dr. S. N. Medical college, Jodhpur from 16 September 2018 to 15 September 2019. Study group includes 24 patients having COM with intracranial or extracranial complications.

**Results:** A total of 24 patients with COM were included in the study. The total males were 14(58.33%) while the females were 10 (41.66%). The most common age group with complication was <15 years. There were a total no. of 13 (54.16%) patients below the age of 15 years followed by 6 (25%) were between 16-30 years, 3 (12.25%) were between 31-45 years and 2 (8.33%) were > 46 years

**Conclusion:** This study shows that complications of chronic otitis media are more common in paediatric population as compared to adults in developing countries due to poor socio-economic conditions, lack of awareness regarding these complications and lack of trained specialist in rural area

**INTRODUCTION**

Chronic Otitis Media (COM) is one of the most common diseases in clinical practice. Though there is general decline in the incidence of complications of chronic Otitis Media, they are still frequently seen in our country. The causes are poor socioeconomic conditions, lack of education and awareness and the lack of availability of trained specialists in rural areas.<sup>(1)</sup> Chronic otitis media (COM) is a chronic inflammation (>3 month in duration) of the mucoperiosteal lining of the middle ear cleft most frequently caused by gram negative bacilli.<sup>(2)</sup> In attic type of COM various extracranial complications like various type of subperiosteal abscess, mastoiditis, facial nerve paralysis, labyrinthitis and petrositis with bone destruction may occur. The various intracranial complications are extradural abscess, subdural abscess, meningitis, encephalitis, brain abscess, lateral sinus thrombosis and otitic hydrocephalus. Development of complications depends on high virulence of organism, poor resistance of patients, and inadequate antibiotic treatment of acute middle ear infection, presence of chronic systemic disease and resistance of organisms to antibiotics which is becoming common these days. The purpose of this study was to compare the incidence of complications of attic type of COM in paediatric and adult patients. So the emphasis of this study was to identify the clinical presentations of complications of COM and provide the appropriate treatment modalities to all patients.

**MATERIAL AND METHODS:**

**Study setting:** This prospective study was conducted at Department of E.N.T. Dr. S.N. Medical College, MDM Hospital Jodhpur (Rajasthan) India.

**Study period:** 16 Sept. 2018 to 15 Sept. 2019 (one year period)  
**Inclusion criteria:** All patients with extracranial and intracranial complications of COM who were diagnosed clinically or by CT scan were included.

**Exclusion criteria:** Cases without any complications, and who were not interested to take part in the study.

**RESULTS:**

A total of 24 patients of COM were included in the study. The

total number of males were 14(58.33%) while the females were 10 (41.66%). The most common age group with complication was <15 years. There were a total no. of 13 (54.16%) patients below the age of 15 years followed by 6 (25%) were between 16-30 years, 3 (12.25%) were between 31-45 years and 2 (8.33%) were > 46 years (Table 1).

**Table 1 distribution of the study cases according to their age and sex.**

Age group	MALE		FEMALE		TOTAL	
	Number	Percent age	Number	Percent age	Number	Percent age
<15 yrs	8	57.14	5	50	13	54.16
16-30yrs	3	21.42	3	30	6	25
31-45yrs	2	14.28	1	10	3	12.25
>46yrs	1	7.14	1	10	2	8.33

Out of 24 patients, 14 patients were having intracranial complications out of which 8 patients (57.14%) belonged to early age group (<15yrs) followed by 4 patients (28.57%) belonged to 16-30yrs age group, 1 patient (7.14%) belonged to 31-45yrs age group and 1 patient (7.14%) belonged to >46yrs age group (Figure 1 & 2).

**Table 2 Distribution of complications in various age group**

Age in years	No. Of Patients						
	Intracranial				Extracranial		
	Brain Abscess	Meningitis	Lateral sinus thrombosis	Extradural abscess	Facial palsy	Labyrinthitis	Postaural abscess
< 15	3	2	1	2	2	-	3
16-30	2	1	1	-	-	2	1
31-45	-	-	1	-	-	2	1
>45	-	-	-	1	1	-	-
Total	5	3	3	3	3	4	5

Total 10 patients were having extracranial complications out of which 5 patients (50%) belonged to early age group (<15yrs) followed by 2 patients (20%) belonged to 16-

30yrs age group, 2 patients(20%) belonged to 31-45yrs age and 1 patient(20%) belonged to >46yrs age.



Figure 1

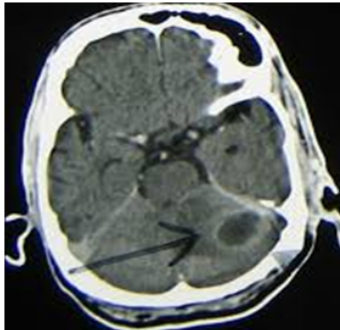


Figure 2

Figure 1 Computed tomography (CT) scan Temporal bone, axial view showing (a) soft tissue density in right middle ear cavity (b) erosion of the Tegmen plate.

Figure 2 Computed tomography (CT) scan head, Axial view showing a soft tissue density in left cerebellar region.

Brain abscess is the most common intracranial complication. Treatment includes multiple high dose parenteral antibiotics initially given for 2-3 days followed by drainage by neurosurgeon and then ear surgery. The ear surgery i.e. radical mastoidectomy was performed at the time of drainage if the patient condition permits. Generally it is delayed for 10-14 days after the complication has been controlled. Meningitis is the second most common complication in our series. The lumbar puncture was done carefully to check the status of infection. Again multiple dose intravenous antibiotics were given before ear surgery until meningitis was under control (48-72 h). The radical mastoidectomy was performed in the presence of irreversible pathological changes such as cholesteatoma, granulation and polyp. Simple mastoidectomy was performed in presence of reversible pathological changes such as mild to moderate middle ear mucosa swelling and good aditus drainage. The most common complication in extracranial group was post auricular abscess. Most of the cases were children with extensive cholesteatoma, prolonged ear discharge while 2 cases were with post aural fistula. These cases required premedicated incision and drainage of post aural abscess along with IV multiple dose antibiotics followed by Canal wall down mastoid surgery at the earliest possible. In all patients radical mastoidectomy was done with removal. The 2nd most common EC complication was Facial nerve palsy. In most of the cases horizontal segment of facial nerve was exposed. Surgical intervention of the cholesteatoma matrix over the exposed facial nerve was done. Two patients were having labyrinthitis. These patients required IV multiple dose antibiotics, labyrinthine sedatives, absolute bed rest with canal wall down mastoidectomy with complete removal of the disease (cholesteatoma, granulation) from middle ear, attic aditus, antrum and mastoid air cell system. The removal of cholesteatoma from fistula site

was performed and fistula was sealed.

**DISCUSSION:**

The total no. of 24 patients with complications of chronic Otitis media were included in the study. Male patients (58.33%) were affected more as compared to the females (41.66%). Similar results were obtained by the Hussain et al.(2005), bento et al.<sup>(4)</sup>(2006) S.R. Powar et al<sup>(6)</sup> (2015), N. Sharma et al<sup>(6)</sup> (2015) The complications were mostly seen in first fifteen years of life. Similar results were obtained by other studies like Moustafa et al.<sup>(7)</sup> (2009), Agrawal et al.<sup>(8)</sup> (2005) and Shamboul et al<sup>(9)</sup>. (1992). Intracranial complications are more common in paediatric age group (83.33%) as compared to adults (16.66%). Similar results were obtained by Grewal et al.<sup>(10)</sup> (1994) and Moustafa et al.(2009)<sup>(7)</sup>. The facial nerve palsy in COM is associated with dehiscence or destruction of the Facial canal. The development of subperiosteal abscess with or without fistula leads to reduction of pressure of pus within the middle ear cleft which in turn reduces the chances of infection spreading intracranially. The mastoid antrum is shallower in younger people. It reaches adult thickness by the age of 16 years. Consequently we found younger patients frequently develop mastoid abscess and post aural fistula, facial canal erosion by cholesteatoma or granulations. Canal wall down mastoidectomy was done in all cases in our series because of extensive cholesteatoma and taking into consideration a possibility of lack of follow up after surgery as most of the patients were from near by village with a poor economic condition making them unable to bear second surgery

**CONCLUSION:**

Complications of chronic otitis media are more common in paediatric population as compared to adults in developing countries due to poor socio-economic conditions, lack of awareness regarding these complications and lack of trained specialist in rural area. Therefore, early diagnosis and appropriate treatment modalities are required to decrease the mortality and morbidity.

**REFERENCES:-**

1. Dhingra PL. Diseases of ear, nose and throat. Elsevier publication New Delhi. Third edition, p 97.2
2. Mills RP. management of chronic suppurative otitis media. (1997). In: Booth. J.B. editor. Scott-Brown's Otolaryngology; 6th ed. Vol.3. London: Reed educational and Professional; 10(1-11).
3. Hussain A, Khan AR.(2005). Frequency of intra-cranial complications in chronic Otitis media J Ayub Med Coll Abbottabad; 17:75-7.
4. Bento R, De Brito R, Ribas GC.(2006). Surgical management of intracranial complications of otogenic infection. Ear Nose Throat J, 85;36-9
5. Pawar S.R. , Shukla Y.(2015). A clinical study on complications of chronic suppurative otitis media and level of awareness in patients admitted at tertiary care hospital in central India. International Journal of Community Medicine and Public Health | July-September; 2,3, 225
6. Sharma N, Jaiswal, A.A., Banerjee P.K., Garg A.K.(2015) Complications of Chronic Suppurative Otitis Media and Their Management: A Single Institution 12 Years Experience. Indian J Otolaryngol Head Neck Surg; 67(4):353-360
7. Moustafa BE, Fiky El, Sharnousy MM.(2009) Complications of Suppurative Otitis Media: Still a problem in 21st century. J Otorhinolaryngol Head Neck Surg; 71:87-928.
8. Agrawal S, Husein M, Mac Rae D.(2005) Complications of otitis media: an evolving state. J Otolaryngol; 34:S33-9
9. KM.(1992). An unusual prevalence of complications of COM in young adults. J. Otolaryngol; 106:874-7.
10. Grewal DS.(1995). Otogenic abscess-our experience. Indian J Otolaryngol Head Neck Surg; 47(2):106-12