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# ORIGINAL ARTICLE

## Assessment of cases of chronic suppurative otitis media

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***ABSTRACT:***

**Background:** Chronic suppurative otitis media (CSOM) is a long-standing infection of a part or whole of the middle ear cleft. The present study was conducted to assess cases of CSOM. **Materials & Methods:** 110 patients of CSOM of both genders were selected and parameters such as side, ear condition as normal, wax discharge, mucoid or purulent discharge was recorded. Family history, type of fuel used, SES, education etc. were recorded. **Results:** Out of 110 patients, males were 75 and females were 35. Type identified was tubotympanic in 52 and atticoantral in 58. Left side was involved in 48 and right in 62. Discharge was mucoid in 56 and purulent in 54. The difference was significant (P< 0.05). Education was primary in 66, high in 40 and degree in 4 cases. Family history was positive in 60. Kerosene as fuel was used by 38, LPG by 10 and wood by 62. SES was upper in 15, middle in 40 and lower in 55. The difference was significant (P< 0.05). **Conclusion:** Common risk factors for chronic suppurative otitis media were poor SES, low education, use of wood as fuel.

**Key words:** Chronic suppurative otitis media, Wood, Kerosene

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## INTRODUCTION

Chronic suppurative otitis media (CSOM) is a long-standing infection of a part or whole of the middle ear cleft characterized by ear discharge and a permanent perforation. A perforation becomes permanent when its edges are covered by squamous epithelium and it does not hear spontaneously.[1] Incidence of CSOM is higher in developing countries because of poor socioeconomic standards, poor nutrition and lack of health education. It affects both sexes and all age groups. In india, the overall prevalence rate is 46 and 16 persons per thousand in rural and urban population, respectively. It is also the single most important cause of hearing impairment in rural population.[2]

Clinically, it is divided into two parts tubotympanic is also known as safe or benign type; it involves antero-inferior part of middle ear cleft, i.e. Eustachian tube and mesotympanum and is associated with a central perforation.[3] There is no risk of serious complications. Atticoantral is also known as unsafe or dangerous type; it involves posterosuperior part of the cleft (i.e. attic, antrum and mastoid) and is associated with an attic or a marginal perforation. The disease is often associated with a bone-eroding process such as cholesteatoma, granulation or osteitis. Risk of complications is higher in this variety. Risk factors such as selected racial groups most in developing countries have an extraordinary incidence of severe episodes of acute otitis media.[4] Poverty has been considered an important risk factor for the rate and severity of otitis media. The factor suggested included crowded living condition.[5] Poor sanitation and inadequate medical care is also important. Seasonal incidence of infection of the middle ear parallels the seasonal variation of upper respiratory tract infection. There are most likely to occur in the winter and spring seasons.[6] The present study was conducted to assess cases of CSOM.

## MATERIALS & METHODS

The present study comprised of 110 patients of CSOM of both genders. All gave their written consent for the participation in the study.

Data such as name, age, gender etc. was recorded. A thorough ear examination by an expert ENT surgeon was carried out. Parameters such as side, ear condition as normal, wax discharge, mucoid or purulent discharge was recorded. Family history, type of fuel used, SES, education etc. were recorded. Results were tabulated and assessed statistically. P value less than 0.05 was considered significant.

## RESULTS

**Table I Distribution of patients**

| Total- 110 | | |
|---|---|---|
| **Gender** | **Male** | **Female** |
| Number | 75 | 35 |

Table I shows that out of 110 patients, males were 75 and females were 35.

**Table II Assessment of parameters**

| parameters | variables | Number | P value |
|---|---|---|---|
| Type | Tubotympanic | 52 | 0.94 |
| | Atticoantral | 58 | |
| Side | Left | 48 | 0.05 |
| | Right | 62 | |
| Discharge | Mucoid | 56 | |
| | Purulant | 54 | 0.82 |

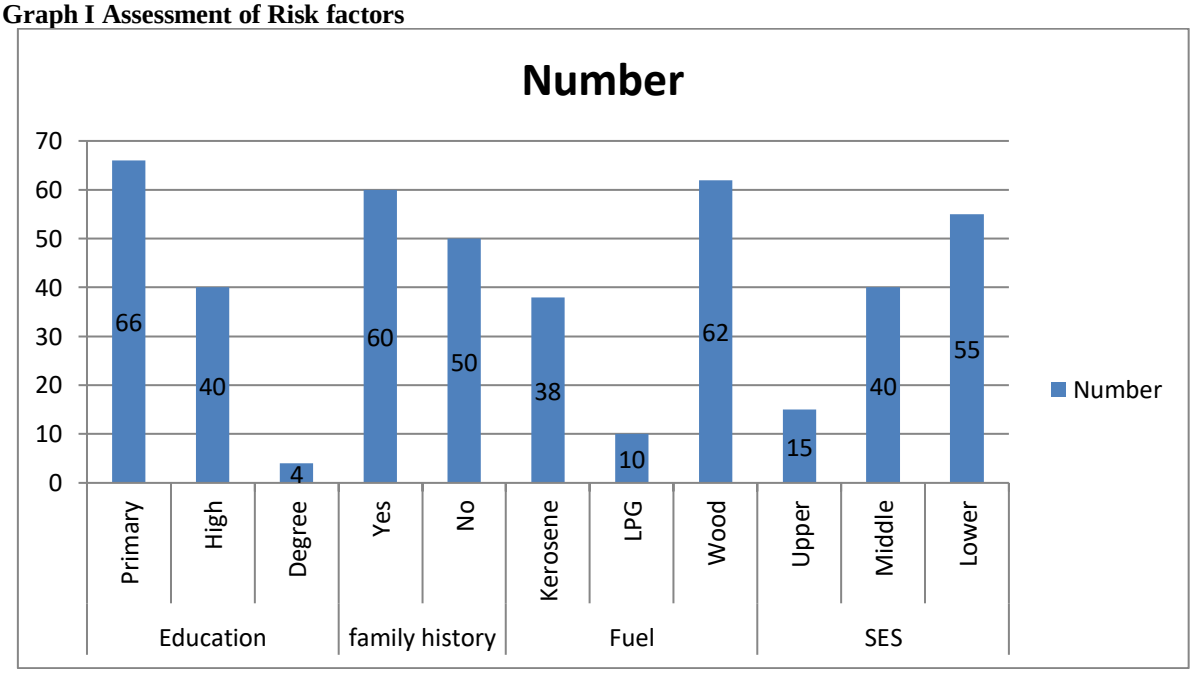
Table II shows that type identified was tubotympanic in 52 and atticoantral in 58. Left side was involved in 48 and right in 62. Discharge was mucoid in 56 and purulent in 54. The difference was significant (P< 0.05).

**Table III Assessment of Risk factors**

| Parameters | Variables | Number | P value |
|---|---|---|---|
| Education | Primary | 66 | 0.04 |
| | High | 40 | |
| | Degree | 4 | |
| family history | Yes | 60 | 0.81 |
| | No | 50 | |
| Fuel | Kerosene | 38 | 0.01 |
| | LPG | 10 | |
| | Wood | 62 | |
| SES | Upper | 15 | 0.02 |
| | Middle | 40 | |
| | Lower | 55 | |

Table III, graph I shows that education was primary in 66, high in 40 and degree in 4 cases. Family history was positive in 60. Kerosene as fuel was used by 38, LPG by 10 and wood by 62. SES was upper in 15, middle in 40 and lower in 55. The difference was significant (P< 0.05).

**Graph I Assessment of Risk factors**




## DISCUSSION

Chronic suppurative otitis media is the chronic inflammation of the middle ear and mastoid cavity, which presents as recurrent ear discharge or otorrhea through a tympanic membrane perforation.[7,8] The pathogenesis of CSOM has been related to the presence of prior or concurrent nasal disease. Chronic infections of the nose and paranasal sinuses (PNS) can involve the Eustachian tube leading to its dysfunction.[9,10] The present study was conducted to assess cases of CSOM.

We found that out of 110 patients, males were 75 and females were 35. M Miura and H Takashi[11] studied the influence of upper respiratory infection including rhinosinusitis on tubal compliance in children and adolescents with chronic otitis media and they

concluded that 72% of patients with refractory tubal compliance due to chronicity of upper respiratory infection including rhinosinusitis lead to persistence of otitis media.

We found that type identified was tubotympanic in 52 and atticoantral in 58. Left side was involved in 48 and right in 62. Discharge was mucoid in 56 and purulent in 54. Bluestone and his colleagues[12] studied 40 patients of chronic otitis media and found Eustachian tube dysfunction to be the reason for the persistence of the disease. They concluded that diseases of the sinuses as the main cause for Eustachian tube dysfunction.

We observed that education was primary in 66, high in 40 and degree in 4 cases. Family history was positive in 60. Kerosene as fuel was used by 38, LPG by 10 and wood by 62. SES was upper in 15, middle in 40 and lower in 55. Fuiita A[13] in their study a total 200 cases of chronic suppurative otitis media including both safe (mucosal) and unsafe (squamous) type were studied. The mean age of participants was 22.8 ± 15.18 years. Of the total participants, 111 were males, 89 were females and the majority (60.5%) of them were from rural background. Around one-fourth of the patients were illiterate and the patients mostly belonged to lower side (lower middle, upper lower and lower) of the spectrum of Kuppuswamy socioeconomic classification. The distribution of age-group, gender and laterality (side of involvement) was similar (P>0.05) in both safe and unsafe type. Overall, 151 patients were found to have conductive hearing loss, 30 (15%) with mixed and 19 (9.5%) did not have any hearing loss at presentation. The distribution of patients with regards to hearing loss was found to be similar in both safe and unsafe groups (P = 0.311). Prakash et al[14] isolated the organisms associated with CSOM and to detect the antibiogram of the aerobic isolates. A total of 204 patients clinically diagnosed of CSOM were enrolled in the study and the samples were obtained from each patient using sterile cotton swabs and cultured for microbial flora. Drug susceptibility testing for aerobic isolates was conducted using Kirby-Bauer disc diffusion method. The most common causative organisms isolated were Staphylococcus aureus (48.69%) and Pseudomonas aeruginosa (19.89%) amongst the 191 aerobic isolates. Anaerobes accounted for 29.41% of the isolates while 12.25% were fungi. Antimicrobial profile of aerobic isolates revealed maximum sensitivity to amikacin (95.5%), ceftriaxone (83.4%) and gentamicin (82.7%).

The shortcoming of the study is small sample size.

## CONCLUSION

Authors found that common risk factors for chronic suppurative otitis media were poor SES, low education, use of wood as fuel.

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