Awareness about Risk Factors and Outcomes in Paediatric Population with Chronic Suppurative Otitis Media in a Tertiary Care Institute

Prabu Velayutham[1], Joemol John[1], Senbagadevi S[1], Vignesh Palani[1*], Lakshanaa Manoj[2], Janani Gopi[3]

[1]Department of ENT, Sri Venkateshwaraa Medical College Hospital and Research Centre, Ariyur, Puducherry, India*
[2]MBBS Student, Sri Venkateshwaraa Medical College Hospital and Research Centre, Ariyur, Puducherry, India
[3]Department of Pharmacology, Sri Venkateshwaraa Medical College Hospital and Research Centre, Ariyur, Puducherry, India

***Corresponding author:** Dr Vignesh Palani*
Phone (or Mobile) No.: +91 9003212933, Email: vigneshseptember1997@gmail.com

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ABSTRACT
A serious public health issue, especially in developing nations, is chronic suppurative otitis media (CSOM). Complications include brain infections, speech delays, and hearing loss might result from inadequate awareness and postponed treatment. The purpose of this study is to evaluate treatment outcomes, risk factors, and parental awareness of CSOM in children in a tertiary care hospital. A cross-sectional study was conducted over six months on 200 pediatric patients diagnosed with CSOM at a tertiary care hospital. A structured questionnaire was used to assess parental awareness. Risk factors were analysed, and audiometric evaluations were performed to assess hearing loss. Data were statistically analysed using SPSS v25. The mean age of children was 7.5 ± 3.2 years. About 68% of parents had inadequate knowledge about CSOM, and 42% delayed seeking medical help for more than four weeks after symptom onset. The most common risk factors identified were poor hygiene (52%), upper respiratory infections (46%), bottle feeding (38%), and overcrowding (33%). Post-treatment hearing improvement was noted in 68% of cases, while 15% had persistent hearing deficits. Poor parental awareness and delayed treatment-seeking behaviour contribute significantly to complications in CSOM. Health education and early intervention can reduce morbidity and long-term sequelae.

INTRODUCTION

The hallmark of COM, a chronic inflammation of the middle ear and mastoid cavity, is persistent ear discharge through a non-intact tympanic membrane. Particularly in nations with low to middle incomes, it is one of the major factor of readily preventable childhood hearing loss [1,2]. Poor parental knowledge of risk factors and consequences has been linked to late presentation and more problems, according to studies [3,4].

It is predicted that about 31 million cases of CSOM occur annually worldwide, with a higher frequency in developing nations [5]. Numerous modifiable risk factors, such as upper respiratory tract infections, poor hygiene, overcrowding, and passive smoking, have been closely linked to its incidence [6,7]. Inadequate access to healthcare exacerbates the problem by increasing the burden of hearing loss [8].

The study's goals are to evaluate caregiver knowledge, find common risk factors for CSOM, and examine treatment outcomes in a paediatric population receiving care in a tertiary care hospital.

MATERIALS AND METHODS

Study Design

A cross-sectional observational study

Duration of study
6 Months

Sample Size and Population
A total of 200 children aged 2–15 years diagnosed with CSOM were included. Informed consent were obtained from the parents

Inclusion Criteria
- Children aged 2–15 years with clinically diagnosed CSOM
- Consent from parents/guardians to participate in the study

Exclusion Criteria
- Children with congenital ear anomalies
- Patients with previous ear surgeries

Data Collection
A structured questionnaire was administered to parents to assess awareness levels, risk factors, and health-seeking behaviour. Pure tone audiometry was performed to determine hearing impairment.

Statistical Analysis
SPSS v25 was used to analyse the data. The categorical data were analysed by chi square test and descriptive statistics were analysed by mean ± SD. P-value of < 0.05 was statistically significant.

RESULTS AND DISCUSSION
1. Demographic Profile of Patients
The average age of the children was 7.5 ± 3.2, 55% of instances were in men and 45% were in females as given in table 1.

2. Parental Awareness Levels
Only 32% of parents had good knowledge about CSOM, while 68% had inadequate awareness, which is shown in table 2.

3. Identified Risk Factors for CSOM
The most frequently observed risk factor was poor hygiene, reported in 52.0% of cases, highlighting the importance of sanitation and ear care in preventing CSOM. Upper respiratory infections were the second most common risk factor, affecting 46.0% of children, reinforcing the link between recurrent infections and middle ear disease. Bottle feeding was identified in 38.0% of cases, suggesting a potential role in increasing the risk of ear infections due to improper feeding practices. Overcrowding, reported in 33.0% of cases, may contribute to the spread of infections and delayed medical intervention. Passive smoking was found in 20.0% of children, indicating exposure to environmental smoke as a contributing factor to persistent middle ear infections. This data emphasizes the need for targeted health education on hygiene, respiratory infection prevention, and reducing environmental risk factors to lower the prevalence of CSOM in children.

From the above, the most common risk factors identified were poor hygiene (52%), recurrent upper respiratory infections (46%), and bottle feeding (38%) as described in table 3.

4. Audiometric Evaluation
The majority of children (29%) had mild hearing loss, while 26% had moderate hearing loss. Severe and profound hearing loss was seen in 11% of cases, indicating the need for long-term audiological rehabilitation as shown in table 4.

5. Post-Treatment Hearing Improvement

After appropriate medical, hearing improvement was assessed at 3-month follow-up. Post-treatment, 68% of children regained normal hearing, while 17% had mild residual hearing loss. However, 4% of cases still had severe hearing loss, necessitating further intervention such as hearing aids or surgical intervention. This was given in table 5.

According to the study, CSOM still poses a serious health risk to kids, and a major contributing factor is a lack of parental knowledge. Complications, such as long-term hearing loss and speech impairment, are more likely to occur when therapy is delayed [5,6].

Numerous studies have demonstrated that the high frequency of CSOM is caused by modifiable risk factors like bottle feeding, sanitation, and passive smoking [7,8]. As with previous research, our results suggest that treatment outcomes can be enhanced by teaching parents how to identify symptoms early and modify risk factors. The 68% treatment success rate is consistent with other research that highlights the importance of early intervention and following medical treatment [9]. In 15% of instances, persistent hearing loss indicates that long-term audiological follow-up is necessary [10].

CONCLUSION

This study emphasizes the rising incidence of Chronic Otitis Media in children as well as the need of parental understanding for managing and preventing the condition. The results we obtained indicate that bottle feeding, crowding, infections of the upper respiratory tract, and lack of hygiene are all major risk factors for COM. Delays in seeking medical attention are frequently caused by inadequate parental awareness, which increases the risk of issues including speech impairment and persistent hearing loss. With 68% of children exhibiting improved hearing after therapy, the study also highlights the beneficial effects of early medical intervention and treatment adherence. Nonetheless, 15% of individuals had ongoing hearing impairments, highlighting the necessity of ongoing audiological testing and treatment. Programs for health education aimed at parents and caregivers are desperately needed to lessen the burden of CSOM. Early detection and management can be greatly aided by school screenings, community-based awareness programs, and easier access to otologic care. Reducing the incidence and complications of CSOM in children would also be made easier by strengthening healthcare regulations to encourage good cleanliness and prompt treatment. We can improve treatment outcomes, avoid long-term disability, and improve early diagnosis by putting these strategies into practice, which will eventually improve the quality of life for kids with CSOM.

Table 1: Demographic Characteristics of Study Population

Parameter	Number (N=200)	Percentage (%)
Age (Mean ± SD)	7.5 ± 3.2	-
Gender	-	-
Male	110	55
Female	90	45
Socioeconomic Status	-	-
Low	140	70
Middle	50	25
High	10	5

Table 2: Awareness of CSOM among Parents

Awareness Level	Number (N=200)	Percentage (%)
Good Awareness	64	32
Poor Awareness	136	68

Table 3: Common Risk Factors for CSOM

Risk Factor	Number (N=200)	Percentage (%)
Poor Hygiene	104	52
Upper Respiratory Infections	92	46
Bottle Feeding	76	38
Overcrowding	66	33
Passive Smoking	40	20

Table 4: Audiometric Evaluation of CSOM Patients (Pre-Treatment)

Degree of Hearing Loss	Hearing Threshold (dB)	Number of Patients (N=200)	Percentage (%)
Normal Hearing	≤ 25 dB	40	20
Mild Hearing Loss	26–40 dB	58	29
Moderate Hearing Loss	41–55 dB	52	26
Moderately Severe Loss	56–70 dB	28	14
Severe Hearing Loss	71–90 dB	12	6
Profound Hearing Loss	> 90 dB	10	5

Table 5: Post-Treatment Hearing Improvement

Hearing Outcome (Post-Treatment)	Number of Patients (N=200)	Percentage (%)
Complete Recovery (≤ 25 dB)	136	68
Mild Residual Hearing Loss	34	17
Moderate Residual Hearing Loss	22	11
Severe/Profound Hearing Loss	8	4

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Conflict of interest:
The authors declare that they have no competing interests.

Ethical approval:
All procedures performed in this study involving human participants were in accordance with the ethical standards of the Internal Human Ethics Committee of the Sri Venkateshwaraa Medical College

Hospital and Research Centre, and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards

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