

# Prevalence of Chronic Suppurative Otitis Media in Nepalese Children: Experiences of Free health Camps

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## Citation

P Adhikari. *Prevalence of Chronic Suppurative Otitis Media in Nepalese Children: Experiences of Free health Camps*. The Internet Journal of Otorhinolaryngology. 2008 Volume 10 Number 2.

## Abstract

**Objective:** This study was done to find out the prevalence of chronic suppurative otitis media (CSOM) in children of different regions of Nepal. **Material and Methods:** This is a prospective cross sectional study among 2000 children aged between 5 -13 years. Children those attending free health camps in places of six districts of Nepal were included. All these children were interviewed and examined otoscopically from January 2005 to December 2008. Data were analyzed statistically using frequency and percentage. **Results:** Results showed that the prevalence of CSOM in children attending free health camps of Nepal is 7.6%. Unilateral disease was seen in 69.9% and 38.6% had active disease. Around 83.0% had tybotympanic type of disease. Only 58.8% children attended hospitals. **Conclusion:** Health education through school health program to prevent ear diseases, which is one of the major causes of deafness, is in need to reduce the prevalence of CSOM and prevent the school children from disability. As our study had high prevalence of chronic suppurative otitis media than other studies done in school children, the authors recommend free health camps, especially for ear diseases, in different parts of Nepal.

This work was done in different districts of Nepal

No financial support was received. But author would like to thanks to all the members of Healthy Human Society for arranging the free health camps.

## INTRODUCTION

Nepal is a developing country. Ignorance and poverty were the major problem for not attending hospitals in Nepal. Children and their parents or caretakers were not aware of chronic suppurative otitis media and did not know its consequences. Thus, Healthy Human Society organized these free health camps so that the target populations get benefited.

Chronic suppurative otitis media (CSOM) is one of the most common ear diseases <sup>12</sup> in many of the developing countries including Nepal. It is the most common cause of persistent mild to moderate hearing impairment in children and young adults. <sup>3</sup> The etiology and pathogenesis of otitis media are multifactorial and include genetic, infections, allergy, environmental, social and racial factors and Eustachian tube dysfunction. <sup>4</sup> During the recent decades, the incidence of chronic suppurative otitis media has dramatically declined due to improvements in housing, hygiene and antimicrobial

chemotherapy. <sup>5</sup> Still, ignorance, poverty and traditional beliefs are the major risk factors for not attending hospital.

## MATERIALS AND METHODS

This is a prospective cross sectional study among 2000 children aged between 5 -13 years. Children those attending free health camps in places of six districts of Nepal were included. These free health camps were organized either by Healthy Human Society (non governmental organization run by doctors of Nepal) or in association with other organizations. All these children were interviewed and examined otoscopically from January 2005 to December 2007. Data were analyzed statistically using frequency and percentage.

## RESULTS

Out of 2000 students, 64.2% were male and 35.8% were female. The prevalence of CSOM in school children revealed 7.6% (Table-1).

**Figure 1**

Table 1: Distribution of CSOM

CSOM	Number of students (Percentage)
Present	153 (7.6%)
Absent	1847(92.4%)
Total	2000 (100.0%)

Unilateral disease was seen in 69.9% (Table-2). Around 83.0% had tybotympanic type of disease (Table-2) and 38.6% had active disease. (Table-3). Only 58.8% children attended hospitals. (Table-4).

**Figure 2**

Table 2: Types and side of CSOM

Types of CSOM	Number of students (Percentage)
CSOM-Tubotympanic	
Right	58 (37.9%)
Left	32 (20.9%)
Both	37 (24.2%)
CSOM-Tubotympanic (Total)	127 (83.0%)
CSOM- Atticoantral	
Right	11 (7.2%)
Left	6 (3.9%)
Both	9 (5.9%)
CSOM- Atticoantral ( Total)	26 (17.0%)
CSOM (Total)	153(100.0%)

**Figure 3**

Table 3: Active and Inactive CSOM

CSOM	No. of students (Percentage)
Active	59 (38.6%)
Inactive	94 (61.4%)
Total	153 (100.0%)

**Figure 4**

Table 4: Treatment seeking pattern

Treatment Pattern	No. of students (percentage)
Attended Hospitals	90 (58.8%)
Not attended Hospitals	63 (41.2%)
Total	153 (100.0%)

## DISCUSSION

Nepal is a landlocked country, surrounded by Himalayas. Majority of the population are engaged in agricultural works. Health care facilities are easily available in urban areas but in semi urban and rural areas, it is difficult to get treatment especially when patients had ear diseases. As in these areas, doctors are not easily available and paramedics do not have enough knowledge to treat ear diseases like CSOM, Healthy Human Society (HHS) did free health camps.

Chronic suppurative otitis media (CSOM) is one of the common health problems in Nepal. <sup>6</sup> It is one of the most common diseases of the ear, particularly in childhood. <sup>2</sup> It is more common in children of rural community where health facilities are least available. Otitis media can present itself in different forms because of large variations in the nature of the disease. This could range from silent otitis media with clinically undetectable middle ear pathology to late stage intracranial life threatening complications like meningitis, brain abscess etc. It is a recognized cause of mild to moderate hearing loss. <sup>7</sup>

CSOM with and without complication continues to affect a large number of patients. <sup>8</sup> Poor living conditions, overcrowding, poor hygiene and nutrition have been suggested as a basis for the widespread prevalence of CSOM

in developing countries.<sup>9</sup> Poverty is a major risk factor in developing countries and certain neglected population. Okafor et al study showed that there were only a few cases where CSOM affected patients from the higher socio-economic ladder and even then the pathology started before the patient moved up the socio-economic ladder.<sup>1</sup> The only exceptions to this finding were a few children born in good circumstances but with special problems such as cleft palate.<sup>1</sup> Unfortunately, the two factors very often co-exist.

The prevalence of CSOM varies in different countries, different populations and ethnic groups.<sup>6</sup> Studies in Bangladesh, India, various countries in Africa and among some disadvantaged ethnic groups have shown that CSOM may have a prevalence between 2 and 17 % among children.<sup>10</sup> In Nepal, the prevalence of CSOM as quoted by Little et al study is 7.2%.<sup>11</sup> Okeowo observed a statistically significant difference in the prevalence of CSOM among rural school children (3.6%) and urban school children (0.6%).<sup>12</sup> In our study, the prevalence of CSOM in children attending free health camps of Nepal is 7.6%. However, Ologe and Nwawalo et al found the prevalence of CSOM to be 6.0% in rural government primary schools while 0% in the children of urban private schools.<sup>13</sup> The prevalence of CSOM as quoted by Adhikari study was found to be 5.7% in the school children of government schools while it was 4.8% in the school children of private schools.<sup>6</sup>

In our series, the prevalence of CSOM in children is higher than the study by Adhikari study.<sup>6</sup> This might be due to the fact that most of these children were from lower socioeconomic status. So, even if there are limited health care facilities 41.2% did not receive any treatment or could not attend hospitals for CSOM. Among the children attending a health care center, only 30.0%% attend to ENT doctor while majority (70.0%) attend a health care center or private clinics and their health check up was done by paramedics/ MBBS doctor or General physicians. The next reason for high prevalence of CSOM in our settings to be high is because of the study was done by conducting free health camps. Those children even not attending hospitals previously also came to the camps. And the reason to bring their children by parents or caretakers is that the camps did not charge any money for health check up and even there were medicines distributed free of costs. So, it is necessary to conduct such free health camps along with free medicines distribution programs in developing countries like Nepal.

Children from lower socioeconomic groups being more

vulnerable to otitis media, they have to be given special care to prevent hearing retardation. Probably the habit of swimming in polluted water in a pond or river regularly may be a factor responsible for discharging ear. Untreated acute suppurative otitis media can also be factors which persist as CSOM. Malnutrition and poor living conditions are more highly likely among the children in the rural school. Poor housing and sanitation are prevalent in rural area, which is supported in WHO/CIBA foundation workshop of 1996 where poor housing has been recognized as a risk factor for CSOM.<sup>14</sup> Potential loss of hearing because of otitis media has important consequences on the development of speech and cognitive abilities, including academic performance of children.<sup>9</sup> Thus the gap between the fortunate and the less privileged is further widened by an innate difficulty in learning occasioned by CSOM.

As clinicians in developed countries recognize that episodes of otitis media often do not require treatment, there is a need to identify the clinical features of otitis media associated with poor outcome. A better understanding of otitis media in populations with higher rates of perforation of the tympanic membrane is likely to be helpful. The primary health care priorities in remote communities should be: i) support strategies that reduce the transmission of bacterial infections to infants and toddlers; ii) encourage timely immunization; iii) advice on effective communication strategies for hearing impaired children; iv) provide frequent and accurate assessment of middle ear disease in the first 18 months of life; v) educate families about the appropriate management for different types of ear disease; and vi) help families give prolonged antibiotic treatment to their children with persistent suppurative otitis media.

## **CONCLUSION**

Health education through School health program to prevent ear diseases, which is one of the major causes of deafness, is in need to reduce the prevalence of CSOM and prevent the school children from disability. Improvement of socioeconomic status and health care facilities will also be helpful in reducing the prevalence of CSOM. However, conducting health camps is one of the most important means to search for disease and treat it accordingly. As our study had high prevalence of chronic suppurative otitis media than other studies done in school children, the authors recommend free health camps, especially for ear diseases, in different parts of Nepal.

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