

FIELD MEDICINE

FREQUENCY OF CHRONIC SUPPURATIVE OTITIS MEDIA IN THE JUNIOR RANKS OF PAK ARMY

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ABSTRACT

Objective: The purpose of this study were to find out the frequency of chronic suppurative otitis media (CSOM) in the junior ranks of army, and to find out the number of such patients serving in low medical category due to CSOM.

Study design: It was a simple multi-centre descriptive study.

Place and Duration of Study: This study was conducted in ENT department of Combined Military Hospital Lahore from March 2003 to August 2003. Feedback was also taken from CMH Abbottabad and HIT Hospital Wah during this period.

Subjects and Methods: A total of 5000 junior ranks were examined for CSOM.

Results: Out of these 56 (1.12 %) were suffering from inactive mucosal disease. Seventy nine (1.58%) had active mucosal disease. Attico antral disease was present in 33 (0.66%) subjects and out of these 8 (0.16%) subjects had undergone mastoid exploration in the past. Ninety (1.8%) cases were serving in low medical category due to CSOM.

Conclusion: The frequency of CSOM is significantly high in the army (03.36 %), considering that all inductions are made after initial medical examination. By observing few precautions the frequency may be reduced, thus decreasing the financial drain on national exchequer.

Keywords: CSOM, Army personnel disability.

INTRODUCTION

Chronic suppurative otitis media (CSOM) is chronic middle ear disease, which affects the tympanic membrane, middle ear mucosa and other middle ear structures. Clinically CSOM presents with ear discharge and conductive deafness. The presence of otalgia, foul smelling discharge, blood stained discharge and headache is heralding and indicator of developing complications [1].

CSOM is one of the diseases for which individual is scanned at the time of enrolment in the army. This disability prevents a soldier from performing various necessary military duties that involve getting into water for fear of ear infection e.g. swimming and sea diving and the duties that require accurate hearing e.g. border patrolling Thus an individual in this disability becomes a source of this disease in the army.

The purpose and aim of this study was therefore to identify the number of serving army personal suffering from CSOM, and to suggest means to reduce the frequency of this disease in the army.

SUBJECTS AND METHODS

It was a multi-centre study, conducted mainly at CMH Lahore with feedback from HIT hospital Taxila and CMH Abbottabad, from March 2003 to August 2003. 5000 troops of Pakistan Army were kept in study. These consisted mainly the battalions located in different cantonments, whose lower ranks (JCO's, NCO's and other soldiers) had reported for getting routine medical fitness to proceed on various UN Mission and peacekeeping forces abroad. Since the troops had come from different cantonments therefore the sample could be taken as representative of whole army. To make the study truly multi-centre, feedback of a

battalions consisting of 600 troops were added from HIT hospital Taxila and another 600 from CMH Abbottabad.

the study including the feedback from CMH Abbottabad and HIT Hospital Wah Cantt.

Exclusion Criteria

There were no exclusion criteria. However the study was closed after 5000 troops had been included in the study.

A detailed history was taken with particular emphasis on duration of ear discharge. The ear examination was done with headlight and set of Hartman ear specula. Those suffering from CSOM were examined in detail under microscope. The findings were recorded in the history sheet of the patient. Each soldier was questioned about the medical category in which he was serving and weather down-categorized due to CSOM, and his record maintained. The patients were advised treatment and follow up.

RESULTS

The total number of subjects examined was 5000. The mean age was 28.5 years minimum 18 years and maximum 45 years. There were 168 (3.36%) patients suffering from CSOM. Attico-antral disease was diagnosed in 33 (0.66%) subjects and out of them 8 had already undergone mastoid exploration. Frequency of various types of SOM is shown in Table 1.

Ninety (1.8%) patients were serving in lower ranks due to CSOM (Table 2).

DISCUSSION

Chronic suppurative otitis media (CSOM) has been an important cause of middle ear disease since prehistoric times [2]. Its incidence appears to depend on race and socioeconomic factors. Poor living condition, overcrowding and poor hygiene and nutrition

Inclusion Criteria

All troops reporting for routine medical examination to CMH Lahore were included in have been suggested as a basis for the widespread prevalence of CSOM [3]. A study conducted in 189 patients of CSOM demonstrated sociodemographic risk factors including low socioeconomic class in 153 (81%) out of which 136 (72%) lived in congested houses with more than 10 people [4]. This later risk factor may account for CSOM among troops who often live in congested environment. The most common type of CSOM is Tubotympanic or mucosal disease. It is characterized by a perforation of the pars tensa. The infecting organism is usually *Pseudomonas aeruginosa* (36.4%) followed by *Staphylococcus aureus* (30.2%) [5]. Majority isolates are resistant to commonly used antibiotics, but sensitive to quinolones, amikacin, aztreonam, and imipenem [6]. Patients with tubo-tympanic form of otitis media are generally not considered to be at risk of developing complications. The term safe otitis media is often applied to this condition; Perforations in Pars-tensa vary in size and position. Marginal perforations are considered to be more sinister, because they may, in some cases, be associated with formation of cholesteatoma [7]. Active mucosal disease present with mucoid or mucopurulent discharge. The ear remain dry during inactive period.

It involves the pars flaccida and is characterized by the formation of a retraction pocket in which keratin accumulates to produce cholesteatoma, or postero-superior marginal perforation. The disease erodes adjacent structures and can cause life-threatening complications [8]. The commonest middle ear structure that cholesteatoma erodes are the middle ear ossicles [9], thus leading to severe conductive hearing loss. In case it erodes through the dural or sinus plate the more life threatening intracranial complications develop. The symptoms of

inactive mucosal disease while 1.5% had active mucosal disease [11]. However in another study conducted among the children of two-selected slum dwellers in Dhaka City on a sample size of 203 individuals, showed a frequency of CSOM in the order of 7.37 % [12]. In a similar study carried out in Nigeria, 6 % pupils out of 699 had CSOM in rural population although the prevalence was much lower in urban population of same age group [13]. Highest incidence of CSOM was however found in a study in Ethiopia in which 391 patients constituting 0.6% of the

Table-1: Type of CSOM (n=168)

Type of SOM	Number of Cases (Percentage)	Percentage in population scanned (Total – 5000 cases)
Inactive Mucosal	56 (33%)	1.12
Active Mucosal	79 (47.6%)	1.58
Attico-Antral	33 (19.4%)	0.66
Total	168	3.36

Table-2: Categorization status of various ch som cases (n=168)

Category status	No (Percentage)	Percentage in a Total of 5000 Cases Examined
Cee permanent	31 (18.4%)	0.63
Cee temporary	38 (22.6%)	0.73
Bee permanent	09 (5.4%)	0.18
Bee temporary	12 (7.2%)	0.25
Not downcategorized	78 (46.4%)	1.57
Total	168	3.36

intracranial spread of infection are those of infection, and those of brain tissue compression.

Some patients may also have a silent CSOM where they do not have any symptom of the disease and discovered accidentally on routine ear examination. The prevalence of this later type of CSOM is particularly high in developed countries where the 80.97 % cases of this disease may be silent [10]. This silent type of disease may also be missed during initial medical examination at time of recruitment.

The most recent study for the prevalence of chronic middle ear disease carried out by MRC Institute of Hearing Research, UK has indicated that 2.6% adults had evidence of

hospital patient population and 22.3% of those seen at the ear, nose, and throat clinic had chronic suppurative otitis media [14]. According to a study, in developing countries, the incidence of complications from CSOM is also high due to inadequate health facilities [15].

In our study, the frequency of CSOM in the army may be considered high due to the fact that subjects were inducted in army as disease free (Although the figures may still be low when compared to the prevalence of this disease in general population). The disease developed while serving in army. Atticoantral disease was present in 33(0.66%) subjects, which is very near to the prevalence reported in literature [16].

Cases of tubo-tympanic type of CSOM if seen during active phase, should be managed with frequent meticulous aural toilet, local and systemic antibiotics. When disease becomes inactive, tympanoplasty should be done. The Attico-antral disease however requires more aggressive management. They should be assessed and investigated for retraction pocket, granulations, cholesteatoma and bone erosion. The retraction pockets are caused by negative pressure in middle ear cleft. In all adults with retraction pockets, thorough examination of nose and nasopharynx is mandatory. The unsafe type of retraction pocket, cholesteatoma, granulations or bone erosion needs surgical treatment to avoid complications [17]. Various types of surgery ranging from conservative drainage procedures to total mastoidectomy have been suggested to make ear safe and free of discharge. A soldier who undergoes any type of surgery in the ear must be re-evaluated after surgery for further suitability for the service.

Recommendations

The individuals in the study were serving Army personnel who had been inducted in Army after thorough medical examination, the disease developed subsequently during active Army service. A number of factors in Army, ranging from poor living conditions of troops to exposure to heavy arm fire, deep sea diving and waterman ship exercise may all be responsible for it. The risk of developing this disease may thus be reduced by taking the following measures –

- Provision of healthy living conditions, adequate living space and good nutrition.
- Earplugs should be used by all ranks during firing.
- Anyone already suffering from CSOM must be identified and disallowed for swimming.

- Troops suffering from rhinosinusitis should refrain from swimming during waterman ship exercise. Excessive nose blowing during rhinosinusitis is to be avoided.
- Patients suffering from CSOM with dry central perforations should be offered surgery and operated. In good hands myringoplasty success rate is more than 90%.
- All patients serving in low medical category, after having successful myringoplasty should be evaluated and upcategorised to avoid financial loss to the state.

CONCLUSION

Despite the fact that soldiers at the time of induction in the army are expected to be free from any disease, the frequency of CSOM in junior ranks of Pakistan army is around 3.36 %. About 1.8 % of the lower ranks are serving in low medical category due to this disease, which is adversely affecting the efficiency of troops and it is also going to burden the national exchequer at the time of their retirement as compensation for this disability. With proper education and adequate precautions this frequency can be reduced significantly thus decreasing the unnecessary financial burden on the state and loss of human resources.

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