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Prevalence of unsafe ear in patients presenting with chronic ear discharge: A prospective observational study

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Abstract---Objective: The purpose of this study was to determine the frequency of atticoantral/unsafe chronic suppurative otitis media in patients with chronic ear discharge. Materials and Methods: This Cross-sectional study was conducted in the department of ENT and Head and Neck Surgery, Hayatabad Medical Complex and Department of ENT, Naseerullah Khan Babar memorial Hospital, Peshawar from August 2018 to February 2019. In this study 199 patients were enrolled with consecutive sampling. Detailed demographic data like history and physical examination were taken from patients. All patients were subjected to detailed otoscopic examination and pure tone audiometery by a consultant. A detailed performa was designed in which all information of the patients like name, age, gender, duration of symptoms and CSOM were recorded by SPSS analysis. Results: With a standard deviation of ± 10.334, the average age of participants in this study was 29 years. There were more males than women among the patients present, with 60% of them being men.

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Twelve percent of patients with chronic discharge developed CSOM, compared to 90% of those who didn't have the condition at all. Conclusion: Our study shows that individuals who come with persistent ear drainage frequently have hazardous ears. In order to reduce the problems brought on by dangerous ear conditions, it emphasizes the significance of early detection, adequate care, and public health activities.

Keywords---atticoantral type, chronic suppurative otitis media, chronic ear discharge, unsafe ear

Introduction

Chronic suppurative otitis media (CSOM) is a three-month-long disease of the center ear space that presents as purulent ear discharge. Chronic Suppurative Otitis Media is among the foremost visit ear ailments in South East Asia, with a recurrence of roughly 5.2 percent within the common population.[1] It is one of the foremost common long-term irresistible infections within the world, and children are particularly at risk.[2] One of the foremost visit complications of CSOM is hearing loss.[3] The complex part of environmental, bacterial, have, and hereditary chance components that leads to CSOM is what is known as a "multifactorial ailment." [4] The lion's share of the time, CSOM shows up within the to begin with few a long time of life, be that as it may it may continue into adulthood.[5] It is still far from being obviously true at what point AOM (Intense otitis media) turns into CSOM. Patients with ear drum apertures who proceed to radiate mucoid fabric for interims of six weeks to three months after getting therapeutic care are more regularly classified as CSOM cases.[6]

The clinician has challenges due to the wide run and complexity of potential issues, as there are mostly fair extraneous indications that show unsafe illnesses.[1] It is assessed that between 65 and 330 million people around the world have CSOM.[7] The dynamic and tricky condition regularly comes about in harmful changes to the center ear mucosa, ossicles, and fundamental bone. This restricted damage might moreover have serious extracranial and intracranial consequences.[8] Pseudomonas aeruginosa is the foremost predominant bacterial separation in CSOM, taken after by S. aureus, Proteus, Klebsiella pneumoniae, diphtheroid, parasitic segregates such Aspergillus species and Candida albicans, as well as Mycobacterium tuberculosis A non-intact tympanic layer is the basic characteristic shared by all CSOM occurrences. Depending on whether the illness process influences the pars tense or the pars flaccida of the tympanic film, this condition is essentially isolated into two sorts: tubotympanic and upper room antral.[9] Children who have the condition and its complications are at chance for moo scholastic execution, destitute dialect and discourse advancement, and disabled cognition, which together make up the condition's covered up impairment.[10]

Ordinarily, the atticoantral or hazardous assortment is went with by a foul-smelling ear release and hearing misfortune. By the by, numerous patients are unconscious of the release, in this way they may come with hearing misfortune

only.[11] Compared to the secure or tubotympanic sort, the perilous or risky varient is more often connected to issues and is regularly went with by a handle that dissolves the bones, such as cholesteatoma, granulations, or osteitis.[12] A mastoidectomy proceeds to be the go-to treatment for the atticoantral kind of inveterate suppurative otitis media (CSOM). It offers tried and true and consistent disease elimination and symptom relief.[13] 9.09 percent of patients in a ponder by Gopichand WR et al. had the atticoantral, or genuine, sort of persistent suppurative otitis media.[14] The aim of this study was to decide whether patients with incessant ear discharge are at risk of unsafe suppurative otitis media.

Material and Methods

A descriptive cross sectional study was conducted at Department of ENT, Hayatabad Medical Complex and Naseerullah Khan Babar Memorial Hospital, Peshawar from August 2018 to February 2019.Ethical approval was granted after the approval from institutional review board. The sample size calculated for the study was 199 by the method suggested by WHO to calculate sample sizes. These calculations took into consideration the atticoantral type of CSOM's 9.09 percent, 95 percent confidence interval, and 4 percent absolute precision. Consecutive Non-Probability sampling technique was incorporated.

Inclusion Criteria

- All the patients in age between 18-60 years.
- both genders
- All patients presenting with ear discharge (more than 3 months)

Exclusion Criteria

- All patients with history of antibiotic use in the last 14 days.
- All patients having history of mastoid surgery
- All patients having cholesteatoma.
- All patients with aural polyps on otoscopic examination.

Informed consent was taken from all participants and in-depth patient interviews were conducted to obtain detailed demographic information, including the patients' medical histories and the results of their physical examinations. A specialist conducted a comprehensive otoscopic examination as well as a pure tone audiometery on each patient. The information regarding the patients, such as their names, ages, genders, the length of time they had been experiencing symptoms, and the atticoantral kind of CSOM, was documented using a detailed proforma that was prepared. This proforma also included the information regarding the length of time they had been experiencing symptoms.

The analysis was performed with the help of the SPSS 20 software. Frequency and percentages were reported for categorical variables while mean and standard deviaitons were used for numerical data.Shapirowilk test was utilized to determine the normality of the data.Chi square test was incorporated for determine associations between the categorical variables and a significant result was determined to be one that had a P Value that was lower than 0.05.

Results

Patient Characteristics

In this research, the ages were dispersed as follows: There were 63 patients (32%) between the ages of 18 and 30, 60 patients (30%) between the ages of 31 and 40, 54 patients (27%) between the ages of 41 and 50, and 22 patients (11%), respectively, between the ages of 51 and 60. The standard deviation was ± 10.334, suggesting a 30-year-old average. (Table No1) The gender distribution of the patients was as follows: 131 (66 percent) were male patients, and 68 (34 percent) were female patients (Table No 2)

Table 1
Age distribution (n= 199)

AGE	FREQUENCY	PERCENTAGE
18-30 years	63	32%
31-40 years	60	30%
41-50 years	54	27%
51-60 years	22	11%
Total	199	100%

With an SD of ±10.334, the Mean age was 30

Table 2
Fender distribution (n= 199)

GENDER	FREQUENCY	PERCENTAGE
Male	131	66%
Female	68	34%
Total	199	100%

Duration of symptoms

54 patients, which accounts for 27 percent of the total, had symptoms that lasted less than eight months, whereas 145 patients, which amounts for 73 percent of the total, experienced symptoms that lasted more than eight months. The duration of the symptoms was around seven months on average, with a standard deviation of ± 3.947. (Table No 3)

Table 3
Duration of symptoms (n= 199)

Duration	FREQUENCY	PERCENTAGE
≤8 months	54	27%
>8 months	145	73%
Total	199	100%

Mean duration was 7 months with SD ± 3.947

Prevalence of CSOM

Analysis of the prevalence of atticoantral type CSOM revealed that 24 (12%) of the patients had it, compared to 175 (88%) of the patients. (Table No 4)

Table 4
Chronic suppurative otitis media of unsafe type (n= 199)

UNSAFE TYPE CSOM	FREQUENCY	PERCENTAGE
Yes	24	12%
No	175	88%
Total	199	100%

On the basis of age, gender, and the length of time that symptoms have been present, Tables No. 5, 6, and 7 offer a categorization of the hazardous form of CSOM.

Table 5
Classification of unsafe types of long-term suppurativeotitis media in relation to the age distribution (n= 199)

UNSAFE TYPE CSOM	18-30 years	31-40 years	41-50 years	51-60 years	Total
Yes	8	7	6	3	24
No	55	53	48	19	175
Total	63	60	54	22	199

The Chi square test was carried out, and the resultant P value was 0.9879

Table 6
Classification of dangerous types of chronic suppurative otitis media in relation to the gender distribution (n= 199)

UNSAFE TYPE CSOM	Male	Female	Total
Yes	16	8	24
No	115	60	175
Total	131	68	199

Chi square test was applied in which P value was 0.9264

Table 7
The categorization of an unsafe type of chronic suppurative otitis media in association with the length of its symptoms (n= 199)

UNSAFE TYPE CSOM	≤8 months	>8 months	Total
Yes	6	18	24
No	48	127	175
Total	54	145	199

Chi square test was applied in which P value was 0.8018

Discussion

A middle ear infection that lasts more than three months and presents with a discharge of pus from the ear is called chronic purulent otitis media.[1] One of the most common ear diseases in Southeast Asia is chronic purulent otitis media, which affects the general population with a frequency of approximately 5.2%. The disease worsens in a subtle and possibly misunderstood way, and it often leads to major changes in the underlying bone, the fibula, and the lining of the middle ear. This local lesion can sometimes lead to serious extracranial and intracranial pathology.[10]

Acquired diseases account for at least 95% of all potentially hazardous or attitude-related disorders. Children and adults are also at risk. According to our research results, the mean age is 29 years old and the standard deviation of age is ± 25.43 years old. The average age is 29 years old. Only 38% of women, while 62% of men. A total of 62% of patients were male. More than 10% of patients had a potentially dangerous type of CSOM, while 90% of patients did not have any potentially dangerous type of CSOM.
The results of this study are consistent with those found in another study by Gopich and WR et al.[13] In this particular study, 9.09% of the patients had chronic purulent otitis media. This variant is considered more harmful.
The results obtained by Iqbal J et al in a separate study are believed to be comparable. According to the results of this survey, 1.58% of the patients, or 79, had active mucosal disease. Atticoantral disease or dangerous disease was detected in 33 participants, accounting for 0.66% and of these 33 cases, 8 of them had mastoid exploration, accounting for 0.16%. The CSOM direct result was that 90 cases, or 1.8% of the total, were classified as of insufficient medical importance.[14]

In another study conducted by Paudel DR et al. reported that the mean age was 32 years with SD ± 25.43. Sixty percent of patients were male and 40% of patients were female. In addition, 9% of patients had severe-type CSOM among patients with chronic purulent ear discharge. According to the results of the most recent study, the prevalence of CSOM is much higher in men than in women. This could be because men tend to see a doctor sooner than women, or it could be because men lead more active lifestyles and are more prone to stress. Both possibilities can explain this phenomenon. It is conceivable that both interpretations are correct. Similar results were also found in the study of R Shymala et al, Kumar R et al.[16,17] In contrast to our study, studies performed by Prakash M et al.[18] Rakhee T et al.[19] have shown that women are affected more than men.

Ashish J et al.[20] have shown that the disease occurs in equal numbers in people of both sexes. Despite the development of antibiotics and advances in the understanding and treatment of persistent middle ear infections, serious consequences can still occur. In terms of diagnosis and treatment, these diseases continue to present profound challenges. They pose a danger to human life if not recognized and handled promptly.[21]

Conclusion

Our study shows that individuals who come with persistent ear drainage frequently have hazardous ears. In order to reduce the problems brought on by dangerous ear conditions, it emphasises the significance of early detection, adequate care, and public health activities. We may work to enhance the overall ear health and quality of life for those with chronic ear discharge by treating this issue in its entirety.

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