

ORIGINAL ARTICLE

SEASONAL VARIATION OF ACUTE OTITIS EXTERNA PRESENTING TO AYUB TEACHING HOSPITAL, ABBOTTABAD

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Background: Otitis Externa is a common inflammatory condition of external ear. It is more common in patients having predisposing conditions like trauma, swimming, patients using hearing aids, certain skin pathologies and immunocompromised patients. Increased humidity in rainy season increases the predisposition to otitis externa. **Method:** This descriptive study was carried over the duration of one year in ENT department of Ayub Teaching Hospital, Abbottabad. Patients of all ages and both genders suffering from acute otitis externa were included in the study after taking informed consent. All the information's were recorded in predesigned proforma and then finally evaluated by using SPSS program. **Results:** The mean age of the patients presenting to us was 39.84 ± 14.48 years (Range 1–78 Years) more commonly in male patients (54.14%). The disease was most commonly seen in rainy season, presenting unilaterally and affecting young adults of age ranging from 31–40 years. **Conclusion:** Prevalence of otitis externa is more common in humid climate. Precautionary measures should be taken in rainy and humid condition such as avoidance of self cleaning the ear.

Keywords: Otitis Externa; Humidity; Cleaning the ear

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INTRODUCTION

Inflammation of the external ear is called otitis externa (OE). Otitis externa is a quite common condition presenting to otology OPD. Persons of any age or sex may be affected.¹ In 90% of the cases, only one ear is affected.² Otitis externa is of different types with acute (localized or diffuse), chronic/recurrent, necrotizing, eczematous forms. The duration of acute otitis externa is less than 12 weeks. Majority of cases of acute otitis externa are due to bacterial infection.³ The commonly involved bacteria include staphylococcus aureus and pseudomonas aeruginosa.⁴ Predisposing conditions for the occurrence of otitis externa include trauma (self-inflicted or iatrogenic), swimming, impacted foreign bodies, hearing aid users, chronic otitis media, skin conditions, and different immunocompromised states.⁵ The condition usually presents with pain, itching, obstruction, decreased hearing and scanty discharge. On examination there is local tenderness, oedema which may be diffuse or localized. The ear canal may be narrowed with crusts or debris.

Pakistan, in general, has four seasons with winter, dry spring, and monsoon and post monsoon.⁶ There is increased humidity during the monsoons which extends from June to September. Increased humidity increases the pH of the ear canal and resulting in desquamation of the epithelial layer of the ear canal skin and increases the chances of bacterial infections in predisposed patients.^{2,5} Moreover, in summers, people swim in public pools frequently, which increase wetting

of ear canal resulting in more cases of acute otitis externa. In addition, children and adults in the villages swim in the rivers and streams to relieve them of the heat as well as to have fun.

In this study we want to assess whether increased humidity during monsoons really affects the prevalence of acute otitis externa so that we can educate the masses for adaptation of precautionary measures to avoid the occurrence of otitis externa.

MATERIAL AND METHODS

This descriptive cross-sectional study was conducted at ENT Department, Ayub teaching hospital, Abbottabad from February 2018 to January, 2019. Total of 447 patients of all ages irrespective of gender, who had acute otitis externa were included in our study. Chronic otitis externa, malignant OE, OE associated with CSOM or dermatological conditions were excluded from the study. An informed consent was sought out from patients/relatives before collection of data. Confidentiality of the data was ensured. The institutional ethical committee had granted approval for the study. Data was collected from history and physical examination on a predesigned proforma and entered in SPSS 22 for processing. Frequency, percentages, descriptive statistics were measured for different variables.

RESULTS

The total number of patients with acute otitis externa included in our study was 447. The mean age of the

patients was 39.84 years with a standard deviation of ± 14.48 which is shown in the table below. The minimum age of presentation was 1 year with a maximum of 78 years. The patients were distributed by age in different groups from 0 to >60 years, as shown in figure-1, with most patients belonging to the age group of 31–40 years. Male to female distribution is shown in figure-2 with 54.14% males and 45.86% females. Number of cases of acute otitis externa occurring in different seasons of the year is shown in figure-3, with most cases occurring during the monsoon season. The type of acute otitis externa as shown in figure-4 depicts that most cases were of acute diffuse type. Laterality of AOE is shown in figure-5, with most patients having unilateral disease.

Table-1: Number (n) of patients with acute otitis externa

n	Mean of age	Std. Deviation
447	39.8412	14.48594

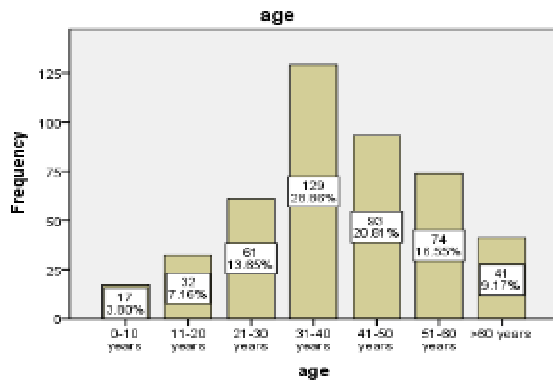


Figure-1: Distribution of patients having otitis externa by age group

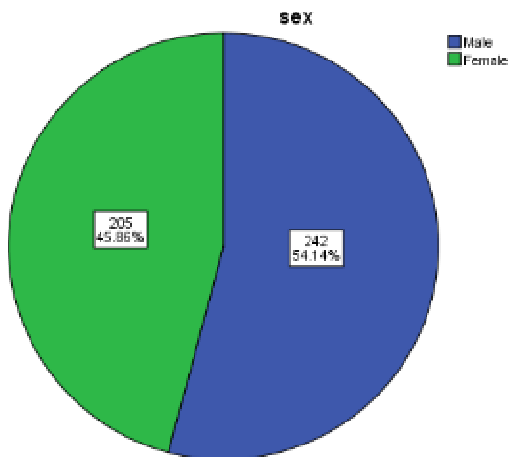


Figure-2: Gender distribution

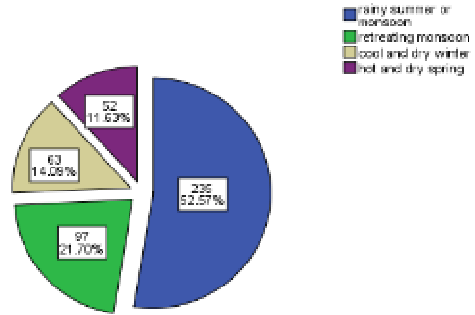


Figure-3: Seasonal distribution of patients with acute otitis externa

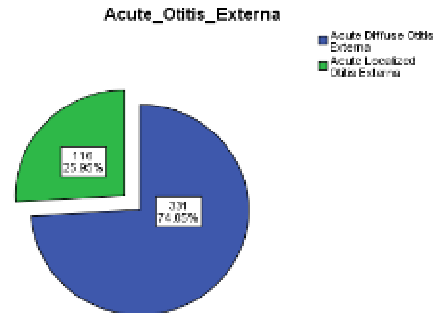


Figure-4: Diffuse vs. localized acute otitis externa

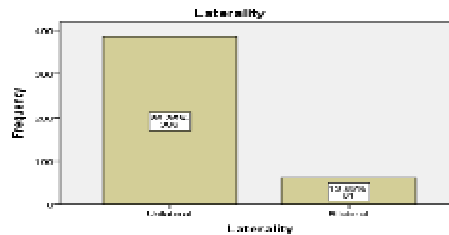


Figure-5: Laterality of acute otitis externa

DISCUSSION

In our study we are trying to establish the relationship of Otitis Externa with different seasons in our catchment area which is Hazara and Kohistan region as well as northern areas. In our study male patients were more than female, with male 54.14% and female 45.86% which is comparable to Musa TS *et al*⁷ who showed in their study as 60.9% were male and 39.1% were female while in a study by Battikhi *et al*.⁸ showed that 55.5% male were affected. Also, in a study by Cheong *et al*.⁹ male were more affected than female, i.e., 52.7% male. Burgos *et al*¹⁰ in his study reported 56% male. On the other hand, Kiakojuri K *et al*.² suggested women were affected more than men, with 54.31% women affected and men comprised 45.69%.² The most likely reason why the males are more commonly affected is that males are more exposed to the humidity and heat of the environment and swimming is also more prevalent in males. The age of presentation in our study extended from a Child of 1 year to an adult patient of 78 years.

Mean age of patients with otitis externa in our study was 39.84±14.48 years. The age group of 31–40 years was most affected with 28.86% patients falling in this age group followed by 41–50 years age group (20.81%). Musa TS *et al*⁸ in his study had a minimum age of one year and maximum age of 64, in which otitis externa presented.⁸ Mean age in his study was 24 with standard deviation of 1.12 years while the average age of presentation in another study by Burgos *et al*¹⁰ was 30.5 years. Musa TS *et al* also concluded in their study that most patients with otitis externa were young adults compromising 58.6%.⁸ Hajjoff D *et al*¹¹ in their study reported that otitis externa is more common in adults and humid conditions.¹¹ Kiakojuri K *et al* also suggested that 25% adults between ages of 35–44 years were affected by otitis externa and around 90% of the cases were unilateral with excessive moisture to be an important risk factor. He also concluded the average age of 43.87 with SD 18.08.² In our study 86.35% cases were unilateral with bilateral cases compromising 13.65%. Rowland *et al* also reported otitis externa to be common in all age groups with bilateral involvement in only 7.6% cases.¹² McWilliams CJ *et al* also reported that 90% cases were unilateral, with most cases seen during the summer months.¹³ In our study 74.05% patients were having acute diffuse otitis externa (ADOE) with rest of patients suffering from acute localized otitis externa, which is 25.95%. In study conducted by Musa TS *et al* most cases were of ADOE, accounting for 75.9% cases.⁸ 52.57% of the cases presented during the rainy season of monsoon. Olina M *et al* reported that otitis externa is more common during summers.¹⁴ Mittal A *et al* reported that otitis externa is most commonly seen in monsoon in India.¹⁵ He also concluded that mostly otitis externa was unilateral. Villedieu *et al* reported a seasonal variation of OE occurrence with more cases presenting in three months from August to October.⁶ Mohammed N. Battikhi *et al* also reported the seasonal variation of acute otitis externa with high incidence during June-August months.⁸

In humid weather even a minor trauma to the ear canal like scratching lightly may result in abrasion which will provide area for the growth of bacteria. In addition, due to the heat and humidity people tend to swim more often which is another reason of the condition. Even if the patient doesn't swim there is more frequent bathing with associated trying to clean the ear which also predisposes to increased chances of Acute Otitis Externa.

CONCLUSION

Self-ear cleaning is not advisable especially in the monsoon weather swimming in the dirty water should be avoided. During swimming ear protection should be worn.

AUTHORS' CONTRIBUTION

MIS: Concept, data collection, write up. TS: Data collection, write up, editing, reference collection, proof reading. SMA: Data collection, editing. MI: Data collection. AZ: Data collection. WS: Data collection

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