

## Original Research

### Analysis of Risk factors of acute otitis externa: An observational study

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#### ABSTRACT:

**Background:** The present study was conducted for evaluating the risk factors of acute otitis externa. **Materials & methods:** A total of 50 patients with presence of acute otitis externa were enrolled. The clinical diagnosis of acute otitis externa was based on the major presentations such as rapid onset (usually within 48 h) in the past 3 weeks of otalgia, itching of the ear canal or fullness in the ear canal, and the signs of ear canal inflammation: Tenderness of the tragus/pinna or both with or without otorrhea, regional lymphadenitis. All the results were recorded in Microsoft excel sheet followed by statistical analysis. **Results:** In 62 percent of the patients, the risk factor was cotton bud while in 6 percent and 4 percent of the cases, the risk factors were fingertip & cotton bud and broomstick respectively. Prolonged use of topical ear drops was risk factors in 10 percent of the cases while instilling water into ear canals was risk factor in 6 percent of the cases. **Conclusion:** Self-ear cleaning with cotton bud was the major risk factor seen in our patients with otitis externa.

**Key words:** Acute Otitis Externa, Risk factors

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#### INTRODUCTION

Otitis externa (OE) is an inflammation, that can be either infectious or non-infectious, of the external auditory canal. In some cases, inflammation can extend to the outer ear, such as the pinna or tragus. OE can be classified as acute (lasts less than 6 weeks) or chronic (lasts more than 3 months). It is also known as swimmer's ear as it often occurs during the summer and in tropical climates and having retained water in the ears increases the risk for it. The most common cause of acute otitis externa is a bacterial infection. It may be associated with allergies, eczema, and psoriasis.<sup>1</sup> <sup>2</sup>*Pseudomonas aeruginosa* and *Staphylococcus aureus* are the most common pathogens involved in otitis externa. Otitis externa can also occur as a polymicrobial infection, and rarely, it may result from a fungal infection such as *Candida* or *Aspergillus*. Various factors can predispose patients to the development of OE. Swimming is one of the most common risk factors, and it increases the risk five times when compared to non-swimmers.<sup>3</sup> <sup>4</sup>Otitis externa is also frequently encountered in primary and pediatric care. It ranges in severity from a mild infection of the external auditory canal to life-

threatening malignant otitis externa. Its correct treatment requires a good understanding of the anatomy, physiology, and microbiology of the ear canal.<sup>5-7</sup> Hence; the present study was conducted for evaluating the risk factors of acute otitis externa.

#### MATERIALS & METHODS

The present study was conducted for evaluating the risk factors of acute otitis externa. A total of 50 patients with presence of acute otitis externa were enrolled. The clinical diagnosis of acute otitis externa was based on the major presentations such as rapid onset (usually within 48 h) in the past 3 weeks of otalgia, itching of the ear canal or fullness in the ear canal, and the signs of ear canal inflammation: Tenderness of the tragus/pinna or both with or without otorrhea, regional lymphadenitis. The questionnaires completed consist of biodata and risk factors for otitis externa which includes use of cotton bud and other objects for self-ear cleaning, introduction of extraneous moisture into the ear canals. All the results were recorded in Microsoft excel sheet followed by statistical analysis.

## RESULTS

A total of 50 patients were analysed. Mean age of the patients was 19.7 years. Out of 50 patients, there were 29 males and 21 females. In 62 percent of the patients, the risk factor was cotton bud while in 6 percent and 4

percent of the cases, the risk factors were fingertip & cotton bud and broomstick respectively. Prolonged use of topical ear drops was risk factors in 10 percent of the cases while instilling water into ear canals was risk factor in 6 percent of the cases.

**Table 1: Risk factors**

|                                    | Risk factors                       | Number | Percentage |
|------------------------------------|------------------------------------|--------|------------|
| Objects introduced into ear canals | Cotton bud                         | 31     | 62         |
|                                    | Fingertip and cotton bud           | 3      | 6          |
|                                    | Broomstick                         | 2      | 4          |
|                                    | Fingerstick                        | 2      | 4          |
|                                    | Pen covers                         | 1      | 2          |
|                                    | Matchstick                         | 1      | 2          |
| Extraneous moisture                | Prolonged use of topical ear drops | 5      | 10         |
|                                    | Instilling water into ear canals   | 3      | 6          |
|                                    | Swimming                           | 2      | 4          |

## DISCUSSION

Acute otitis externa (AOE), also known as 'swimmer's ear', is a common disease of children, adolescents and adults. It is defined by diffuse inflammation of the external ear canal. Primarily a disease of children over two years of age, it is commonly associated with swimming. Local defence mechanisms become impaired by prolonged ear canal wetness. Skin desquamation leads to microscopic fissures that provide a portal of entry for infecting organisms. Other risk factors for AOE include: trauma, a foreign body in the ear, using a hearing aid, certain dermatological conditions, chronic otorrhea, wearing tight head scarves and being immunocompromised. Ear piercing may lead to infection of the pinna. While AOE is primarily a local disease, more serious and invasive disease can occur in certain situations. Several evidence-based clinical practice guidelines and reviews have been published.<sup>7-10</sup>Hence; the present study was conducted for evaluating the risk factors of acute otitis externa.

A total of 50 patients were analysed. Mean age of the patients was 19.7 years. Out of 50 patients, there were 29 males and 21 females. In 62 percent of the patients, the risk factor was cotton bud while in 6 percent and 4 percent of the cases, the risk factors were fingertip & cotton bud and broomstick respectively. Prolonged use of topical ear drops was risk factors in 10 percent of the cases while instilling water into ear canals was risk factor in 6 percent of the cases. Teele reported that 66% and 86% of males versus 53% and 77% of females had had an episode of otitis within their first year and third year respectively, and male gender was significantly associated with an increased risk of having atleast one episode of AOM and recurrent AOM in the period between the first and third years. According to Stenstrom's data, 61% of the otitis-prone group were male children and 35% female, while other series (including ours) could find no sex differences.<sup>11-13</sup>Previously, Laine, et al, in the study of an older age group, reported that parents have no better than a 50% chance of guessing the presence of

AOM in infants and children with URI.<sup>14, 15</sup>Abdullahi M et al determined the practices that are risk factors in patients with acute otitis externa in a Nigerian tertiary institution. A total of 2350 patients were seen during the study period, of which 88 (3.7%) were diagnosed with acute otitis externa. The males and females were 32 (36.4%) and 56 (63.6%), respectively, with a ratio of 1:1.8 The age range was 3 months to 70 years, with the mean age of 18.9 years. Self-ear cleaning with cotton bud 65 (73.9%) constituted the majority of object introduced into the ear canal(s) and the reasons for self-ear cleaning were because of itching of the ear(s) in 47 (53.4%), habitual 9 (10.2%), and perceiving that the ears were dirty 32 (36.4%). The introduction of extraneous moisture into the ears was seen in 46 (52.3%) including self-medication with topical antibiotic, instilling plain and soapy water in the ear canal(s), and swimming. The comorbid conditions which are known risk factors for otitis externa were seen in 35 (39.8%) patients, of which allergy was the most frequent with 22 (25%), followed by diabetic mellitus 7 (8%) and AIDS 6 (6.8%). Only 14 (16%) of these patients had their comorbid conditions diagnosed at their first presentation.<sup>16</sup>

## CONCLUSION

From the above results, the authors conclude that self-ear cleaning with cotton bud was the major risk factor seen in our patients with otitis externa.

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