

Study of Fungal Isolates Associated with Otomycosis in a Tertiary Care Hospital

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Abstract: *Acute, subacute, or chronic fungal infections of the external auditory canal are known as otomycosis. Pruritus, otalgia, auditory fullness, hearing loss, and tinnitus are its primary symptoms. The current investigation was carried out to identify the fungal isolates linked to otomycosis and to determine which species is more common among cases of otomycosis that have been clinically diagnosed. The investigation carried out over a five - month period. Samples from otomycosis patients were taken, inoculated into culture plates, and examined for the development of fungal growth. Aspergillus niger (37.5%) was the most common isolate from 32 confirmed otomycosis specimens collected during the study period. Candida albicans (31.25%), Aspergillus flavus (12.5%), Candida tropicalis (12.5%), and Aspergillus fumigatus (6.25%) were the next most common isolates. Males were more likely to have these isolates. According to the study, otomycosis was prevalent in middle - aged and adult populations.*

Keywords: AOE - Acute Otitis Externa, COE - Chronic Otitis Externa, KOH - Potassium hydroxide, LPCB - Lacto Phenol Cotton Blue, SDA - Sabouraud Dextrose Agar

1. Introduction

Otomycosis is a fungal infection of the external auditory canal and ear that can be acute, subacute, or chronic. It can also result in middle ear complications. Worldwide, otomycosis is a disease that is more common in warm, humid climates. It is estimated that fungi cause ear infections in about 25% of cases [1].

Otomycosis is more common in tropical and subtropical regions, and its prevalence is correlated with geographic location. Predisposing factors include using hearing aids, broad spectrum antibiotics, dermatological diseases, immune system changes, loss of cerumen, and steroid use. Otomycosis's primary symptoms include tinnitus, pruritus, otalgia, auditory fullness, hearing loss, and otorrhea. Usually, the infection is only one side affected. The external auditory canal's (EAC) flora consists of a variety of microorganisms, including Aspergillus species, which are yeast - like fungi, Candida, species, Staphylococcus aureus, Staphylococcus epidermidis, Streptococcus species and Micrococcus, Corynebacterium spp, Bacillus spp, Pseudomonas aeruginosa, Escherichia coli, Hemophilus influenza, and Moraxella catarrhalis [3].

Aspergillus and Candida are the most prevalent fungal species, and it is a pathogenic entity. Patients with otomycosis frequently have yeasts and mold growing in their auditory canals. The thermophilic component's dominance Aspergillus and candida species are associated with ear inflammation. Typically, Aspergillus niger, Aspergillus fumigatus, Aspergillus flavus molds are isolated from the ear. Immunocompromised individuals have a higher incidence of otomycosis [2].

Using mycological examinations, the diagnosis can be verified following a clinical examination. Most frequently found in the world are Aspergillus and Candida species. These fungi are opportunistic and typically exhibit varying degrees of pathogenicity, as they are a component of the normal microbiota found in various body parts. Otomycosis can occasionally present as a disease that requires long - term care and monitoring, but its recurrence rate is still quite high.

2. Method

This study was conducted in Department of Microbiology, Total Thirty Two (32) patients with otomycosis diagnoses based on clinical criteria. The evaluation of microbiological causes was conducted through the culture of samples obtained from every individual. Clinical characteristics of otomycosis were included in the study, and improperly collected samples were excluded. To diagnose otomycosis, samples were cultured on Sabour dextrose agar and Sabour dextrose agar containing chloramphenicol, as well as directly tested with 10% KOH.

3. Result

3.1 Distribution of Otomycosis according to Gender

Gender	Number of cases	Percentage
Male	20	62.5%
Female	12	37.5%

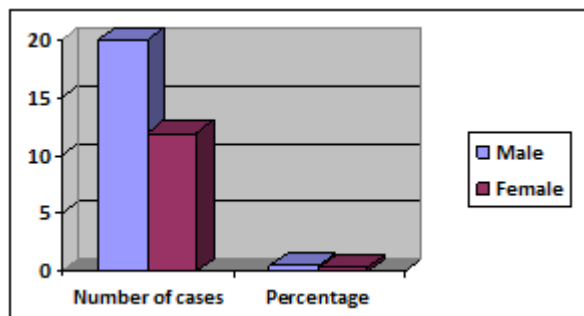


Figure 1: Distribution of Otomycosis according to Gender

3.2 Distribution of Fungal Isolate obtained in the Study

Isolates	Frequency	Percentage
Aspergillus niger	12	37.5
Aspergillus flavus	4	12.5
Aspergillus fumigatus	2	6.25
Candida albicans	10	31.25
Candida tropicalis	4	12.5

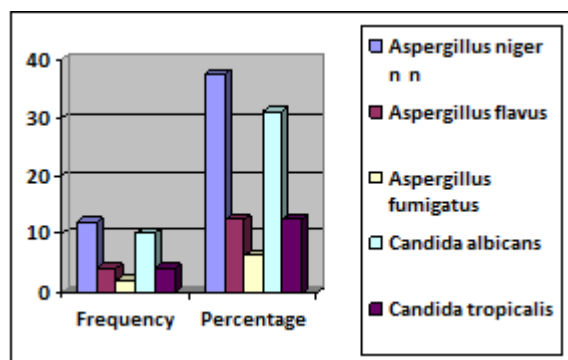


Figure 2: Distribution of fungal isolate obtained in the study

3.3 Comparison of KOH & Culture

	KOH	Percentage	Culture	Percentage
Positive	12	37.5	24	75
Negative	20	62.5	8	25
Total	32	100	32	100

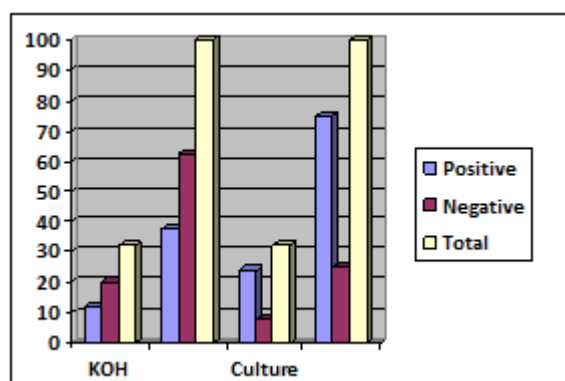


Figure 3: Comparison of KOH & culture

4. Conclusion

Otomycosis is a disease that is common throughout the world, particularly in tropical nations. The samples from 32 patients with otomycosis were analyzed for the study. Male young adults reported the majority of cases. The most

frequently isolated fungi were Aspergillus species (Aspergillus niger, Aspergillus flavus, and Aspergillus fumigatus) and Candida species (Candida albicans, Candida tropicalis), and these reports are consistent with other reports from different regions of India and the world. Males, particularly those in their young adult and middle age, are more susceptible to otomycosis. The lowest numbers of cases were discovered in the oldest age groups. When compared to culture, direct methods for detecting fungi from samples were frequently less sensitive. Of the 32 cases, 24 had a culture that revealed the presence of clinically relevant fungi. For most patients, otalgia was the initial symptom to manifest. Laboratory diagnosis is helpful in determining the precise etiology of otomycosis in order to start the proper antifungal therapy because clinical features are non-specific. Improved patient management may be possible with this outcome.

References

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