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Fungal Infection of Ear in Immunocompromised Patients

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Abstract:- Fungal infection of ear involving external auditory canal, middle ear are commonly encountered by otolaryngologists. It presents with symptoms of itching, earache, discharge and loss of hearing in late stages. Recent years due to increase in immunocompromised patients there is higher chances of fungal infection in ear. We perform mycological analysis of fungal debris from external auditory canal of 60 patients clinically.

We conducted a prospective study which involves 60 cases of immunocompromised patients. After detail history and clinical examination required investigations are carried to identify the fungal organism. In the study fungal infections are found more common among males (54%) and majority in age group 21-30 years (42%) disease was predominantly unilateral (80%) bilateral involvement is (20%) aspergillus species (70%).which is followed by candida species (54%) which is also seen.

Fungal infection of ear mostly affects the external auditory canal. Presents with symptoms of itching, ear discharge, ear ache. Major factor for fungal infection is trauma to external auditory canal, immunocompromised state. Aspergillus species and candida species are commonly isolated in immunocompromised patients.

- ***Aim***

To find out the incidence of commonest fungal organism which causes the infection of external auditory canal of ear in immunocompromised patients.

- ***Objective***

To identify the common fungal organism in immunocompromised patients.

I. INTRODUCTION

Immunodeficiency is a state in which the immune system's ability to fight infectious disease and cancer is compromised or entirely absent. It is a state in which patients are more prone to develop and more prone to develop more vulnerable to opportunistic infections.

This study, we'll be discussing about the opportunistic fungal infections of immunocompromised patients that affects mainly the ear. The most common fungal infections occur in ear is otomycosis.

Fungal infection of auditory canal and middle ear are usually left unnoticed and regarded as a harmless saprophytic growth.(3) otomycosis is a fungal infection of external auditory canal and sometimes associated complications in middle ear.(1)

In recent years, opportunistic fungal infection have gained greater importance because of increase in immunocompromised patients.(1) Although wide spectrum of fungi are involved the most common fungi are aspergillus and candida species which cause infections.

However these infections may become clinically significant in immunocompromised patients or patients undergoing long term antibiotic treatment.(3)As immunocompromised patients are more susceptible to otomycosis, patients with diabetes, human immunodeficiency virus or lymphoma and patients undergone chemotherapy or under steroid intake are increased risk of infection leading to otomycosis.(1)

The most common fungal infection of ear is otomycosis where aspergillus has 75% in fungal infection of ear followed by candida. Other forms of infection are present which are a lot rare which include phycomycetes, actinomycetes and rhizopus. Otomycosis is a superficial mycotic infection of outer ear canal. Common in tropical countries caused by aspergillus niger, Candida albicans. It may appear white, blacker brown when examined with otoscope and ear swabs where aspergillus niger-black with filamentous growth. Aspergillus fumigatus- pale blue (green).candida-white/creamy deport.

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Otomycosis causes inflammation, dry skin and smelly discharge from ear canal. Along with symptoms of itching, earache, ear discharge, hearing loss, tinnitus. The prevalence of otomycosis is more in hot humid and dusty areas of tropics and subtropics.

II. MATERIAL AND METHODS

A prospective study was conducted on 60 patients who were immunocompromised patients at our out patient clinic at saveetha medical college and hospital during period from January 2019 to March 2019.

➢ *Inclusion Criteria:*

The study includes patients of all age group and either sex who are immunocompromised.

➢ *Clinical Study:*

A total of 60 cases were clinically diagnosed immunocompromised patients with fungal infection of ear presenting to above mentioned department where subjected to comprehensive history and clinically investigated for this study.

The outer part of patients external auditory canal was cleaned using sterile swabs, deeper portions of external auditory canal was taken using sterile aural swabs and sent to microbiology department for processing. Each swab was subjected to microscopic examination with 10% KOH and inoculated over sabouraud dextrose agar media for culture.

III. RESULTS

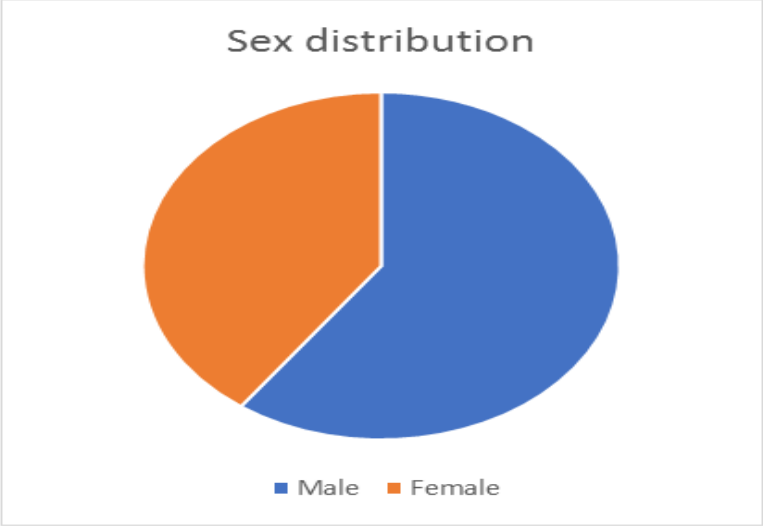

Fig 1

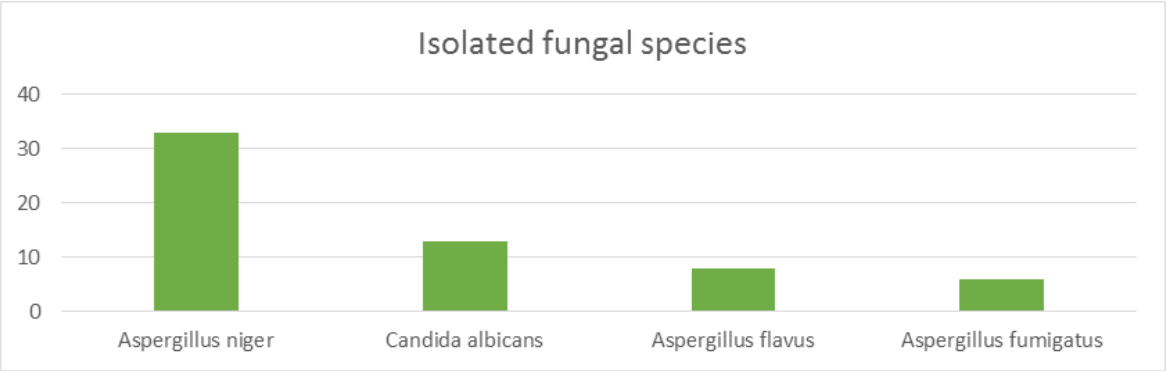

Fig 2

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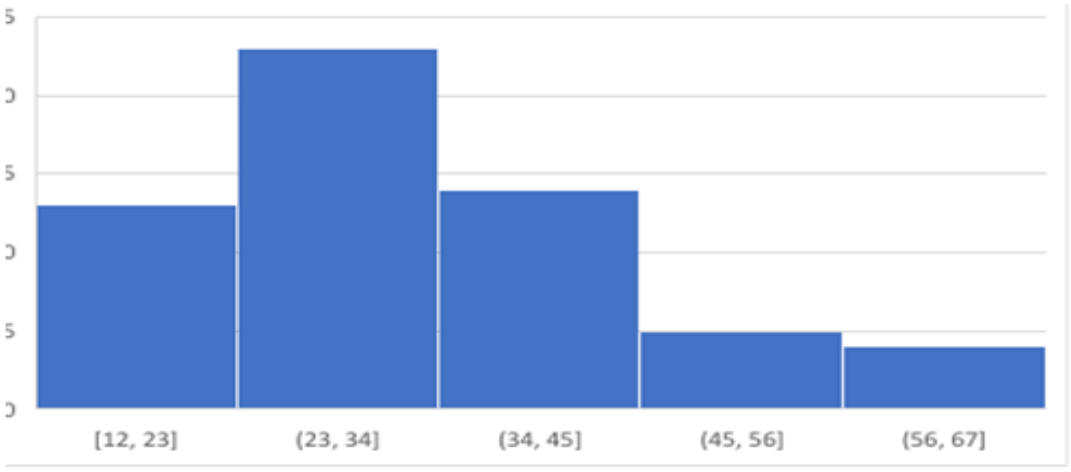

Fig 3

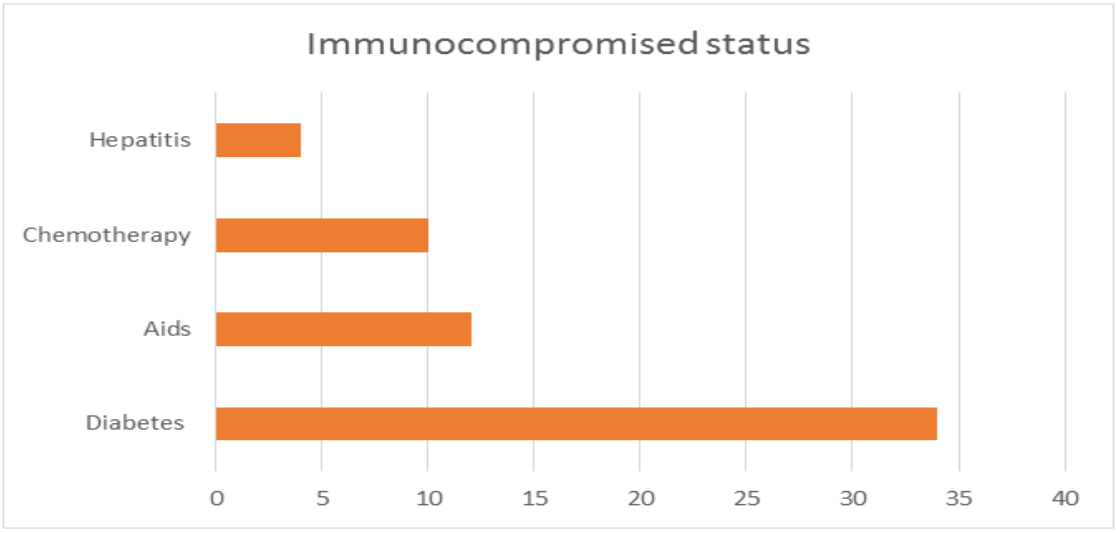

Fig 4

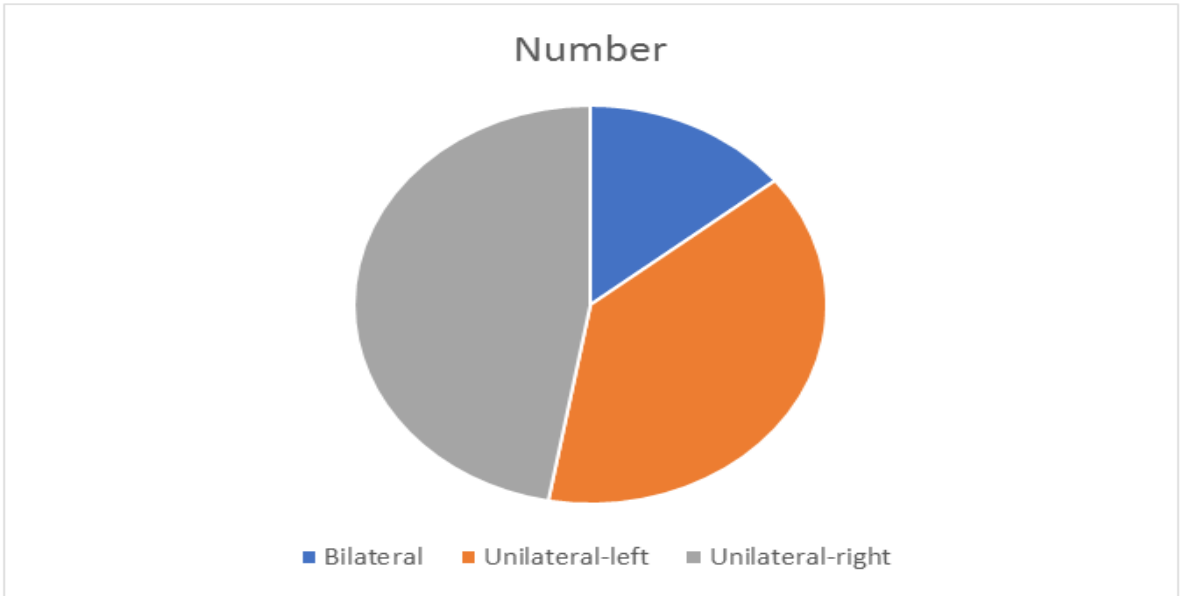

Fig 5

IV. DISCUSSION

Fungal infection of ear are commonly confined to external auditory canal rather than middle ear cavity. Frequently in tropical and subtropical climate because of heat and humidity.(2)The infection may be acute or subacute characterised by itching, ear ache, blocking sensation. The fungal infections result in inflammation, accumulation of debris mass containing fungal elements, suppurations and pain. An analysis of age group revealed infections can occur from 1 year to 80 years of age bur incidence is high in middle age group. In a study incidence is high in 21 to 30 years of age.(2) This may be due to high chances of infective occupational exposure, travelling etc. the immunocompromised status with younger age group are less but incidence of fungal infection is high.

Overview of literature revealed that these infections are common in males than females. In our study it is about 54% in males and 46% in females who are affected. Where it is unilateral than bilateral. Our study shows almost 80% are unilateral. Itching and ear discharge are commonly seen while occurrence of ear pain is less.

In a whole among the fungal isolates aspergillus niger and candida species are more commonly seen. In present study we recorded 54% of aspergillus niger species correlate with study of Viswanath Betal which showed 54.4% of aspergillus species. In case of candida species the study is same as Viswanath betal study regarding the distribution.

V. CONCLUSION

The fungal infection mostly occurs in external auditory canal frequently encountered in patients attending otolaryngology clinic.(1) It presents with symptoms of itching and discharge with slight earache. In our study we found out more affected are males. Major predisposing factors are trauma to external auditory canal, use of contaminated ear drops,Unsterile oil and probably immunocompromised patients.(1) Though the disease can be diagnosed clinically, microscopic examination and fungal culture is required to confirm the infection. Aspergillus niger is predominant species isolated in immunocompromised patients with even chances of candida infection.

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