

## Clinical and microbial study of Otomycosis

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### Abstract

**Introduction:** Otomycosis is fungal infection of external auditory canal, which is common throughout the world. Otomycosis may be refractory to treatment prescribed and hence challenges the clinician.

**Aim:** To identify the organism causing otomycosis and to explore specific predisposing factors and treatment.

**Materials and Methods:** This is a descriptive study of cases of otomycosis attending ENT outpatient department of Patna Medical College and Hospital, Patna which were evaluated clinically and microbiologically for one year.

**Result and Conclusion:** The commonest predisposing factor for otomycosis is trauma due to self-cleaning and water entering the ear. Common presentation is itching of ear and ear ache. Commonest organism isolated is *Aspergillus Niger*. Usually respond to treatment with topical antifungal agent especially clotrimazole. Most of the cases responded satisfactorily with topical clotrimazole.

**Keywords:** Otomycosis, External auditory canal, *Aspergillus*, Clotrimazole

### 1. Introduction

Fungal infection of the external auditory canal is a common source of concern to otolaryngologist which is found throughout the world. Otomycosis may be refractory to the treatment prescribed and hence challenges the clinician. Mainstay of therapy involves removal of debris, thorough aural toilet, and use of antifungal agent and treatment of precipitating factor.

Present study was descriptive study of patients clinically diagnosed as otomycosis. The study was conducted on patients with otomycosis attending ENT department of Patna Medical College and Hospital, Patna from April 2015 to March 2016. 100 cases studied during the period. They were subjected to history taking, clinical evaluation, investigation including fungal stain and fungal culture. Treated with aural toilet, local antifungal drugs and treatment of precipitating factor. Patient was followed at regular interval 2 weeks, 4 weeks, then monthly for 6 months. The data is collected in proposed proforma and subjected to suitable statistical analysis including percentage analysis.

In this study common age group involved by otomycosis is between 20 – 40 years.

### 2. Materials and Methods

Females were affected more as shown in the Fig 1. Common in house wives (47%) followed by students (22%).

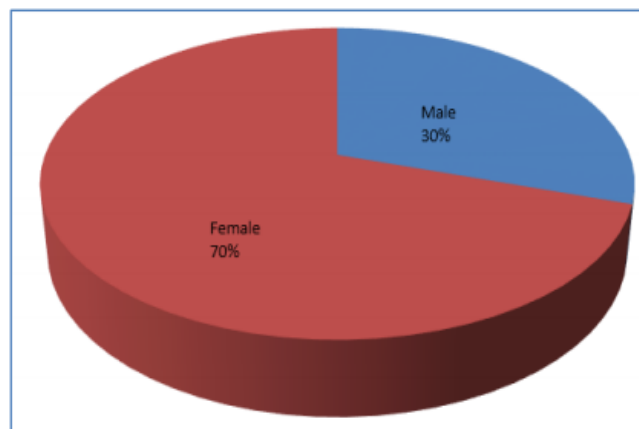


Fig 1

Table 1: Distribution of cases according to the age group

Age group	Percentage
0 - 10 years	2
11- 20 years	15
21-30 years	25
31- 40 years	24
41 – 50 years	17
51 – 60 years	14
61 – 70 years	3
<b>Total</b>	<b>100</b>

Table 2: Presenting complaints

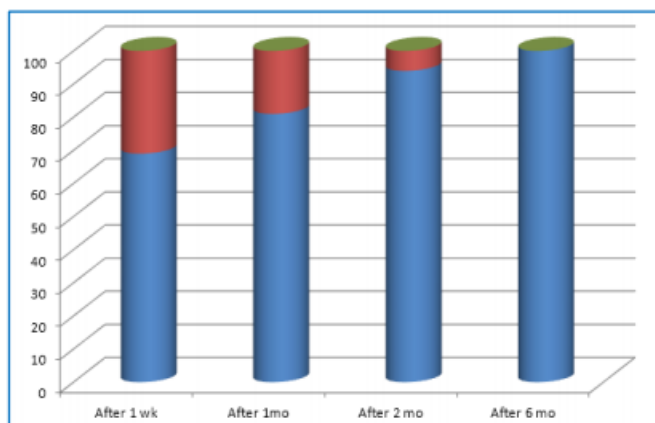
Symptoms	Frequency	percentage
Itching	100	100
Pain	91	91
Ear Discharge	83	83
Sense of fullness	48	48
Hard of hearing	20	20
Tinnitus	15	15

Commonest complaint was itching (100%) followed by ear ache (91%), ear block and ear discharge. Commonest predisposing factor was trauma due to self-cleaning (69%) followed by topical ear drops. Diabetes mellitus is one of the predisposing factor (18%). 40% cases were reported in the month of June-July. Clinical finding was black mycotic plug (70%) followed by white blotting paper like mycotic plug.

**Table 3:** Fungus isolated

Fungus isolated	No. of cases	Percentage
Aspergillus flavus	3	3%
Aspergillus fumigatus	20	20%
Aspergillus niger	58	58%
Candida albicans	8	8%
Penicillium	5	5%
Mucor species	5	5%
Pseudoalleschia boyde	1	1%
<b>Total</b>	<b>100</b>	<b>100%</b>

From table 3 commonest organism isolated was Aspergillus species followed by Candida species. Patients were treated with topical antifungal drug Clotrimazole.



**Fig 2:** Response to the treatment

**3. Discussion**

Otomycosis remains common source of misery for patients. Often remains unnoticed and unattended until severe pain occurs. Fungi could be mentioned as normal microbial flora in external auditory canal. Various factors pave the way for saprophytic fungus to gain foothold in external canal skin such as trauma by frequent ear cleaning, topical ear drops. Diabetes mellitus is the most important predisposing factor. Regarding incidence most of the patients were in 21-40 years (49%). Age incidence is in accordance with the studies of Baveja C. P and Dhingra. P. L. [1] Which is 50%. In our study 70% cases were female which is in accordance with the study of Yahia. H. M, Al- Habib. H. M. and Shihab. N. M. [2] where as in study by Beveja *et al* incidence was more in male. In our study it was common in house wives because they were exposed to damp environment. In this study all the patient gives history of itching. 91% cases presented with history of ear ache which is

in accordance with K. O. Paulose, Alkhalifa, S. H. Shenoy, R. K. Sharma [3].

Trauma due to itching with fingertip, hair pin etc. lead to sub epidermal invasion of fungus resulting in pain and ear discharge. Otomycosis is common during the month of June – July in our study. Presence of high pH of the ear canal to alkaline side helps in the growth of fungi. This observation is in accordance with the study of Muglistan.

T and G. O. Donoghue [4]. In our study Aspergillus niger was isolated in 58% of cases. Aspergillus niger grow in cerumen, epithelial scales and debris deep in external auditory canal. This is in accordance with study by Joy *et al* [5] and Paulose *et al*. Regarding treatment patients were put on 1% topical Clotrimazole after aural toilet. In patients with edema of external auditory canal clotrimazole, antibiotic, steroid ointment ear pack is given. Patient is followed up at regular interval. It was noted that good response with this treatment in our study. This is in accordance with study by K. Paulose *et al*. [3] where as in study by M. Anvarullah and P. A. Jayakar [6] found Tolnaftate was most effective. But various studies emphasized the effectiveness of clotrimazole and absence of ototoxicity.

**4. Conclusion**

Out of 100 cases studied in department of ENT Patna Medical college & Hospital, Bihar, it is found that otomycosis is common in female and is more in house wives. Present with itching of the ear, discharge and otalgia. Precipitated by ear trauma or ear drops. Commonest organism isolated is Aspergillus Niger and responded well to topical clotrimazole. To conclude early diagnosis, prompt treatment of precipitating cause and topical antifungal therapy along with proper aural toilet will give satisfactory cure in otomycosis.

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