



“A CLINICAL STUDY TO ASSESS THE CLINICAL FEATURES, FREQUENCY AND TREATMENT OUTCOMES IN PATIENTS OF OTOMYCOSIS IN CIMS HOSPITAL BILASPUR, CHHATTISGARH”

ENT

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ABSTRACT

Background: Otomycosis is a very common condition encountered in a general otolaryngology clinic setting and its prevalence in this study is 7% among patients who presented with signs and symptoms of ear disease. It is a pathologic entity, with candida and aspergillus the most common fungal species. It is not clear that the fungi are the true infective agents or mere colonization species as a result of compromised local host immunity secondary to bacterial infection. **Objective:** To assess the clinical features, frequency and treatment outcomes in patients of Otomycosis in CIMS Hospital Bilaspur, Chhattisgarh. **Methods:** This clinical study is conducted in the department of ENT, Chhattisgarh institute of medical sciences, CIMS Bilaspur (C.G.) from 01/07/2019 to 30/09/2020. Sample size consists of 400 patients of both sexes and all age groups selected from ENT OPD. The frequency, predisposing factors, common symptoms and response to different treatment regimens were observed and recorded. **Results:** 400 patients were registered with documented diagnosis of otomycosis. Out of these 232 (58%) were male and 168 (42%) were female patients. The age of patients ranged from 1½ years to 70 years with a mean age of 34 years. Mean follow up time was 6 months. Most common presenting symptom was by pruritis (68.8%) and otalgia (40%). Overall 336 (84%) patients were improved with initial treatment and 64 (16%) did not respond to initial treatment. 16 (4%) patients had a history of otological procedures. 8 (2%) patients had canal wall down procedures that resulted in mastoid cavity. **Conclusion:** Otomycosis is commonly presented with pruritis, otalgia, otorrhoea and decreased hearing. It usually resolves with local toilet of ear and instillation of antifungal agents. Eradication of disease is difficult in presence of a mastoid cavity and metabolic diseases like diabetes mellitus and otitis externa. We suggest 1% clotrimazole drops with oral antibiotics for the treatment of otomycosis.

KEYWORDS

Otomycosis, Otolgia, Clotrimazole, Pruritis, Antifungal Agents.

INTRODUCTION

Otomycosis is a very common condition encountered in a general otolaryngology clinic setting and its prevalence is 7% among patients who presented with signs and symptoms of ear disease.^[1] It is a pathologic entity, with candida and aspergillus the most common fungal species.^{[2][3]} Otomycosis commonly results from overuse of antibacterial ear drops, which should never be used for more than 7 days. In such cases the fungus is an opportunist that results from antibacterial suppression of the normal bacterial flora, combined with the steroid the drops also contain. It is more common in tropical countries. The infection may be either subacute or acute and is characterized by malodorous discharge, inflammation, pruritis, scaling, and severe discomfort. The mycosis results in inflammation, superficial epithelial exfoliation, masses of debris containing hyphae, suppuration, and pain. Otomycosis does not usually cause as much canal skin edema as does acute bacterial external otitis. While a severe pressure type of pain is a prominent feature of advanced cases, the ear is usually much less tender, if at all, to traction or tragal pressure. Appearance of the fungus is variable, most commonly gray, white, or black, often intermixed with cerumen and clinging to the canal skin. Gray concretions may be present. It can require significant time to remove, best done with suction and microscopic ear instruments, by an ENT specialist. It is not clear that the fungi are the true infective agents or mere colonization species as a result of compromised local host immunity secondary to bacterial infection. Various predisposing factors include a humid climate, presence of cerumen, instrumentation of the ear, increased use of topical antibiotics / steroid preparations, immunocompromised host, patients who have undergone open cavity mastoidectomy and those who wear hearing aids with occlusive ear mold.^[4] The infection is usually unilateral and characterized by inflammatory pruritis, scaling and otalgia.^[5] Treatment recommendations have included local debridement, local and systemic antimicrobial agents. Sometimes otomycosis presents as a challenging disease for its long term treatment and follow up, yet its recurrence rate remains high.^[6]

METHODOLOGY

METHOD: This clinical study is conducted in the department of ENT, Chhattisgarh Institute of Medical Sciences, CIMS Bilaspur (C.G.) from 01/07/2019 to 30/09/2020. Sample size consists of 400 patients of both sexes and all age groups selected from ENT OPD. We prescribed 1% clotrimazole drops with oral antibiotics in 50 % of patients and 1% clotrimazole drops without antibiotics to 50% of patients who were randomly selected

The frequency, predisposing factors, common symptoms and response to different treatment regimens were observed and recorded.

RESULTS

This clinical study involved samples of 400 otomycosis patients who were registered and treated in ENT OPD from 01/07/2019 to 30/09/2020. This study is conducted in department of ENT, CIMS hospital, Bilaspur Chhattisgarh.

The results are as follows:

Age

84 out of 400 patients (21%) belonged to <18 year age group, 13% were in >45 year age group whereas 66% belonged to 18-45 yr age group. This data shows that middle aged and old patients were predominantly affected by otomycosis than young patients.

Table 1 Age wise distribution of patients

Age Range(yr)	< 18	18-45	> 45
N = 400	84(21%)	264(66%)	52(13%)

Gender

232 out of 400 (58%) patients were male whereas female patients were 167(41.7%); 1 patient of transgender community was reported. This data revealed that the otomycosis affected the male patients predominantly than female.

Table 2 Gender wise Distribution of patients

Gender	Male	Female	Transgender
N=400	232(58%)	167(41.7%)	1(0.25%)

Socio-economic status

239 out of 400(59.75%) patients of lower socioeconomic status were registered in OPD, on the other hand 30% patients were of middle class SES and only 10.25% were of upper class SES. This data clearly stated that the patients of lower socioeconomic strata were affected more by otomycosis than other SES group.

Table 3 Socio-economic status wise distribution of patients

SES	Lower Class	Middle Class	Upper Class	Total
Percentage	239(59.75%)	120(30%)	41(10.25%)	400

Clinical Presentation of disease

345 out of 400(86.2%) patients complained of pruritus in ear. 76.5% patients had otalgia. Hearing loss was complained by 56% patients and tinnitus was present in 120(30%) patients. Physical examination findings that suggest otomycosis include a thick fibrinous accumulation of debris, small well circumscribed areas of granulation tissue within the external canal or on the tympanic membrane and watery discharge.

Table 4 Clinical Feature wise distribution

C/F N=400	Pruritus	Otalgia	Otorrhoea	Hearing Loss	Tinnitus
	345(86.2%)	306(76.5%)	245(61.5%)	224(56%)	120(30%)

Therapeutic Agents Used

Topical ear drops containing Clotrimazole 1%, beclomethasone 0.025%, neomycin 0.5%, lidocaine 2% instilled after cleaning the canal with the use of microscope in all 400 patients, oral analgesics were prescribed in 76.5% patients, oral antihistaminics were prescribed for a week in among 330(61.5%) patients. Some of the patients were also given oral antibiotics for 7 days (56%) patients.

Most of the cases were settled within one week. The topical treatment was continued for three weeks in resistant cases. Successful treatment outcome was defined as resolution of all evidence of fungal infection on physical examination. Residual disease was defined as a condition that failed to respond to our initial choice of treatment. Recurrent disease was defined as a condition that occurred in patients who had resolution of disease after initial treatment but recurred in the same ear later on.

Table 5 Therapeutic Agents used

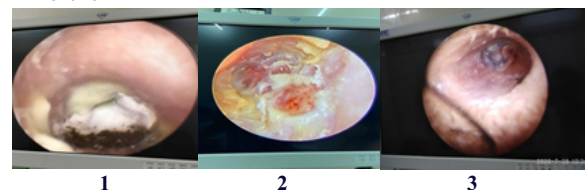
Therapeutic Agents	Otological antibiotic ear drops	Oral analgesics	Oral antihistaminic	Oral antibiotics
	400(86.2%)	362(76.5%)	330(61.5%)	200(56%)

The therapeutic agents were always used in conjunction with thorough mechanical debridement of visible fungal elements in the external auditory canal. 1% clotrimazole appeared to be effective. Treatment duration ranged from 1-3 weeks. Over all 332(83%) patients improved with initial treatment. 68(17%) patients were lost to follow up after initiation of treatment, and 64 (16%) failed initial treatment. Among the 332 patients that responded to initial treatment, 152 (38%) patients had recurrent disease.

DISCUSSION

Otomycosis is a superficial mycotic infection of the outer ear canal frequently encountered by otolaryngologist and can usually be diagnosed by clinical examination. However the correct diagnosis requires a high index of suspicion. It was reported among the chief complaints in 346 (86.25%) of the current study population. Aspergillus and Candida species are the most commonly identified fungal pathogens in otomycosis.^[7] Infections with Candida can be more difficult to detect clinically because of its lack of a characteristic appearance like aspergillus and can present as otorrhoea not responding to aural antimicrobial.^[8] **Stern JC et al** concluded in their study that otomycosis attributed to Candida is often identified by culture data. Although multiple in vitro studies have examined the efficacy of various antifungal agents, there is no consensus on the most effective agent.^[9] Various agents have also been used clinically with variable rate of success. **Kurnatowski P et al** found in their study that application of appropriate topical antifungal agents coupled with

frequent mechanical debridement usually results in prompt resolution of symptoms, although recurrent or residual disease can be common. In this series more than 70% of the patients had resolution of the infection with initial treatment, often in less than two weeks. Topical clotrimazole is our preferred antifungal agents for its efficacy against both aspergillus and Candida species.^[10] TM perforation and serous otitis media are not uncommon with otomycosis and tend to resolve with treatment. The pathophysiology of the TM perforation may be attributed to avascular necrosis of the TM as a result of mycotic thrombosis in the adjacent blood vessels. The rate of 7% (8 patients) of TM perforation in this series is similar to that observed by **Pradhan et al.**^[11] there were no clinical features predictive of TM perforation. TM involvement is likely a consequence of fungal inoculation in most medial aspects of the external canal or direct extension of the disease from adjacent skin. There appear to be little consensus with respect to the predisposing factors for otomycosis. For instance the presence of cerumen has been speculated to be supportive of fungal growth by some, yet inhibitory by others.^[12] There have also been reports of autoinoculation of ear canal that result in otomycosis by patient with untreated dermatomycosis. More recently there has been increasing concern with respect to increasing incidence of otomycosis from wide spread use of fluoroquinolone otic drops.^[13] The data appear to support prior otologic procedures particularly that result in a mastoid cavity, as a potential risk factor for otomycosis. Several factors may contribute to the development of otomycosis in the previously operated ear. First recurrent drainage or subsequent antibiotic / antiseptic application may alter the local environment of the external canal and allow super infection of nosocomial fungi. Second alteration of the anatomy by canal wall down procedures may also produce changes in cerumen production or relative humidity that favor fungal growth. This suggests that eradication of disease is more difficult in the presence of mastoid cavity.

Annexure

1. White and black spores with fibrinous hyphae..
2. After mechanical debridement of spores and fungal debris-ear canal
3. Follow up after one week- no congestion over tympanic membrane...

CONCLUSION

Otomycosis is commonly presented with pruritis, otalgia, otorrhoea and decreased hearing. It usually resolves with local toilet of ear and instillation of antifungal agents. Eradication of disease is difficult in presence of a mastoid cavity and metabolic diseases like diabetes mellitus and otitis externa. We suggest 1% clotrimazole drops with oral antibiotics for the treatment of otomycosis.

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