

Original article :

Effectiveness of Topical Treatment with Clotrimazole in Management of Otomycosis: An Institutional Based Study

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ABSTRACT

Background: Fungal otitis externa, also known as otomycosis is basically described as fungal infection of external ear, external auditory meatus. The prevalence of otomycosis is very low amongst patients of otitis externa and high in patients with inflammatory ear conditions. The treatment of otomycosis is divided into specific and non-specific. Various antifungal drugs such as clotrimazole, nystatin, tolnaftate come under specific drugs. Medications for non-specific treatment include acetic acid, boric acid and gentian violet. The aim of the present study is to determine the efficacy of clotrimazole in the management of otomycosis.

Materials and Methods: This one year prospective study was carried out in the department of ENT, Government Medical College, Haldwani, Uttarakhand (India). Topical application of clotrimazole was done twice daily for two weeks. Efficacy of clotrimazole was established at the end of two weeks. Absence of pain, itching and clearance of masses from the ear indicated that drug was efficacious. All the data was arranged in a tabulated form and analysed using SPSS software.

Results: The study involved 120 subjects who reported to the department with otomycosis. In our study majority of patients were aged between 26-30 years(30.8%). There were 24.2% patients (n=29) who were aged between 31-35 years. There was healing in 84.1% subjects(n=101) and no or little improvement was seen in 15.8% (n=19) patients.

Conclusion: From the above study, it can be concluded that females are predominant sufferers of the condition. It is more prevalent in younger patients. Mechanical debridement followed by topical application ofazole antifungal's is an effective mode of treatment.

Keywords: Clotrimazole, Efficacy, Otomycosis, Prevalence.

INTRODUCTION

Fungal otitis externa, also known as otomycosis is basically described as fungal infection of external ear, external auditory meatus.¹The prevalence of otomycosis is very low amongst patients of otitis externa and high in patients with inflammatory ear conditions. It varies between 9% to 30.4%.²It is considered more prevalent in females than in males. Persons residing in tropical and subtropical humid

climatic conditions are more prone to this condition. Young adults are frequently affected by this occurrence compared to children.³ Complication and reoccurrence rate is higher in immunocompromised patients, requiring longer treatment time. Aspergillus and Candida isolates have been obtained from patients suffering from fungal otitis externa.⁴⁻⁶ Very rarely species like Fusarium, Rhodotorula and Cryptococcus are also found.⁷⁻⁸

Various factors predispose to otomycosis include swimming, medications such as steroids and cytotoxic drugs, self-induced trauma, bacterial infections, neoplasia and immune disorders.⁹ The diagnosis of otomycosis is based on imaging and microscopic examination of samples. Computed tomography, nuclear imaging and magnetic resonance imaging all come under various radiological studies for diagnosis.¹⁰⁻¹¹

The treatment of otomycosis is divided into specific and non-specific. Various antifungal drugs such as clotrimazole, nystatin, tolnaftate come under specific drugs. Medications for non-specific treatment include acetic acid, boric acid and gentian violet.¹² Managing otomycosis is a challenging situation for a physician. The aim of the present study is to determine the efficacy of clotrimazole in the management of otomycosis.

MATERIALS AND METHODS

This one year prospective study was carried out in the department of ENT, Government Medical College, Haldwani, Uttarakhand (India). Total 120 patients with the diagnosis of otomycosis based on the history of pain, discharge from the ear and growth on the external ear on examination were included in the study. Patients between the ages of 20-40 years were included in the study. The study was approved by the Institute's ethical board. A written informed consent was obtained from all the patients in their vernacular language. Any patient with bacterial infection was excluded from the study.

Topical application of clotrimazole was done twice daily for two weeks. Efficacy of clotrimazole was established at the end of two weeks. Absence of pain, itching and clearance of masses from the ear indicated that drug was efficacious. All the data was arranged in a tabulated form and analysed using

SPSS software. Efficacy was estimated by percentage of the total data.

RESULTS

The study involved 120 subjects who reported to the department with otomycosis. Table 1 shows the distribution of the patients according to gender. There were 46 males (38.3%) and 74 females (61.7%) who came to the department with the problem of otomycosis. Table 2 shows the distribution of patients according to age. In our study majority of patients were aged between 26-30 years (30.8%). There were 24.2% patients (n=29) who were aged between 31-35 years. There were 23.3% patients (n=28) who were aged between 20- 25 years. The least number of patients were between 36-40 years (21.6%). Table 3, Graph 1 shows the efficacy of the drug. There was healing in 84.1% subjects (n=101) and no or little improvement was seen in 15.8% (n=19) patients.

DISCUSSION

Fungal infection of the auricle, ear drum, external auditory meatus and middle ear is known as otomycosis. Fungal infection of ear is generally by moulds, yeasts and rarely by dermatophytes. The most common presenting signs and symptoms include colourless otorrhea, oedema, erythematous tympanic membrane and cotton like white debris in the external auditory canal. Persistent perforation of the tympanum allows entry of fungi into middle ear.¹³ In certain patients treatment of skin diseases by steroids on long term basis may lead to development of fungal otitis externa especially on auricle and auditory canal. Immunocompromised patients such as patients of marrow transplant, AIDS, cancer or leukemia develop fatal, invasive form of the disease. The main feature of malignant otitis externa is erythematous auditory canal.¹⁴⁻¹⁶ Treatment of otomycosis should be initiated against eradicating

specific fungal species in order to prevent development of resistant strains. Susceptibility testing with antifungal drugs should be performed in vitro. In cases of superficial infections, debridement followed by topical antifungal drugs is the treatment of choice. In case of malignant invasive conditions, systemic drugs are advised. Majority of the patient's respond well to topical application of gels, Ointment or cream. While prescribing topical medications, its ototoxicity should be taken into consideration.¹⁷⁻¹⁹ Nowadays a variety of drugs are available for managing otomycosis like amphotericin B^{20,21}, clotrimazole, fluconazole^{22,23} and posaconazole.^{24,25} Our present treatment was aimed at evaluating the topical application of clotrimazole for treating otomycosis. In our study patients were aged between 20- 40 years. There were 61.7% females

who were affected by the condition indicating that disease was more prevalent amongst females. This drug was found efficacious in 84.2% subjects but there was limited improvement in 15.8% patients. In a study conducted by Zaroret al²⁶ amongst patients of San Paulo, otomycosis was more commonly seen in women. In a study conducted by Kauret al²⁷, there were 41.1% patients between age range of 16 to 30 years who were affected by otomycosis. Clotrimazole is a highly efficacious drug in the management of otomycosis with the success rate of 95% to 100%.²⁸

CONCLUSION

From the above study, it can be concluded that females are predominant sufferers of the condition. It is more prevalent in younger patients. Mechanical debridement followed by topical application of azole antifunagls is an effective mode of treatment.

Table 1: Incidence of patient depending on gender

SEX	FREQUENCY	PERCENTAGE
Male	46	38.3
Female	74	61.7

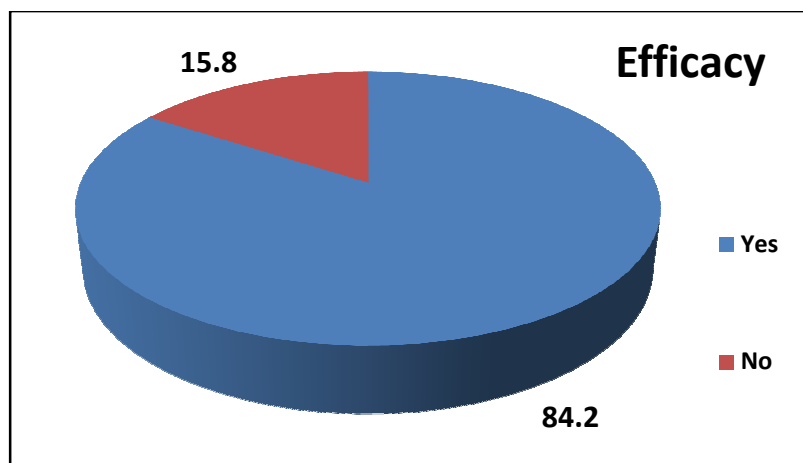
Table 2: Distribution of patients according to age group

AGE GROUP	FREQUENCY	PERCENTAGE
20-25	28	23.3
26-30	37	30.8
31-35	29	24.2
36-40	26	21.6

Table 3: Indicating efficacy of the drug

EFFICACY	FREQUENCY	PERCENTAGE
Yes	101	84.2
No	19	15.8

Graph 1: Efficacy of the drug



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