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Comparison of Recovery Rate of Otomycosis Using Topical Clotrimazole Drops vs. Cream Treatment

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Abstract **Original Research Article**

Introduction: Otomycosis is the fungal infection of external ear, canal, tympanic membrane and sometimes middle ear. Clotrimazole (1%) drops or cream is the most effective topical antifungal for treatment of otomycosis. ***Aim:*** Comparison of efficiency of clotrimazole (1%) cream and 1% clotrimazole drops in otomycosis. ***Method:*** 120 patients with otoscopy confirmed otomycosis in external ear included in study and divided in two groups 'A' and 'B'. Group 'A' used clotrimazole (1%) drops while group 'B' used clotrimazole (1%) cream. Symptoms were analyzed initially at presentation and after treatment on 1st and 2nd week. All patients were asked about their favored modality of treatment. ***Results:*** All the symptoms in group 'B' were more improved than group 'A'. Blocked sensation remained as symptom in group 'B' more than group 'A'. ***Conclusion:*** Clotrimazole cream (1%) is more effective then clotrimazole (1%) drops in treatment of otomycosis.

Keywords: Otomycosis, Clotrimazole, Symptoms.

INTRODUCTION

Otomycosis is the fungal infection of external ear, eardrum and middle ear [1]. It may be acute or sub-acute or chronic which is commonly caused by Aspergillus Fumigatus, Aspergillus Niger and Candida Albicans [2, 3]. This infection is more prevalent in tropical and subtropical humid climate. It is usually secondary infection related to various risk factors such as hot weather, swimming, absence of cerumen, dry and dusty environment, poor health status, hearing aid usage, previous ear surgery and genetic factors [2, 4]. The prevalence rate of otomycosis has been reported from 9% to 30.4% in patients with symptoms of fungal otitis externa [5, 6]. This infection is rarely fatal but recurrence is not uncommon and sometimes very difficult to eradicate specially in diabetics and open mastoid cavity patients [5,7]. The recommended treatment for otomycosis commonly includes local cleaning and debridement, local and systematic antifungals and avoidance of predisposing factors [5, 8]. Commonly used tropical antifungal is clotrimazole in form of drops, creams, powders and solution. Clotrimazole drops are used 3-4 times a day for at last one week and very cumbersome to put frequently so some studies suggested use of clotrimazole cream. So this study aimed to compare clotrimazole (1%) cream and drops.

MATERIALS AND METHODS

This study was done from August 2012 to January 2013 in Jodhpur Medical college and hospital, Jodhpur. Inclusion criteria included patients who had fungal otitis externa confirmed on otoscopy .Exclusion criteria included patients who had no infection on direct examination, with mastoid cavity, Tympanic membrane perforation, poorly controlled diabetic patients, those using hearing Aids. The symptoms of otomycosis were pain, blocked sensation and itching and rated on (VAS) Visual Analysis Scale by patients. Proper local debridement, suction and cleaning done under microscope. All patients of otomycosis were divided into two groups 'A' and 'B'. Group 'A' consisted of 1% clotrimazole drops and group 'B' compromised of 1% clotrimazole cream.

Group 'A' patients were instructed to instill 1% clotrimazole drops 4 drops 4 times a day and resume after 1 week. For group 'B' 1% clotrimazole cream was filled in EAC (External Auditory Canal) under microscope with the help of syringe and patient was told to review after one week. During follow up

EAC was examined and symptoms evaluated. If there was no evidence of fungal debris then patient was considered treated. If patients had evidence of otomycosis on 1st week visit then same treatment repeated and again reviewed after a week. All the patients were asked to tell their preference for treatment for one time instillation of cream or multiple times drops.

RESULTS

Total 120 patients divided in group 'A' and 'B' with 60 patients in each group. Table 1 showed the symptoms evaluation of patients in each group when they started treatment.

Table -1: No. of patients with symptoms at time of presentation

SYMPTOMS	GROUP 'A' (Total 60)	GROUP 'B' (Total 60)
Ear Discharge	46(76.6%)	44(73.3%)
Fungal Debris	60(100%)	60(100%)
Pain	50(83.3%)	52(86.6%)
Itching	45(75%)	44(73.3%)
Blocked sensation	48(80%)	44(73.3%)

At the time of starting treatment almost all patients had otomycotic debris in their ear in both groups while pain as symptoms present only in 50 cases (83.3%) in group 'A' and 52 cares (86.6%) in group 'B'. Ear discharge was present in 46 cases (76.6%) in group 'A' and 44 cases in group 'B'(73.3%). Itching was also present in 45 cases in group 'A' (75%) and in 40 cases (73.3%) in group 'B'.

All the patients in both group were evaluated and suction cleaning with removal of local debris done and clotrimazole 1% drops for group 'A' for instillation and clotrimazole 1% cream filled in EAC in group 'B' patients. All patients with both groups examined after 1 week and evaluated for symptoms as showed in table -2 after taking treatments.

Table-2: Evaluation of symptoms 1 week after starting treatment

SYMPTOMS	GROUP A B	GROUP
Ear Discharge	12	6
Fungal Debris (+)	15	10
Pain	12	8
Itching	8	6
Blocked Sensations	6	16

After 1 week antifungal treatment all patients showed improvement in their symptoms. Ear discharge was present only in 12 cases in group 'A' from 46 cases (73.9 % improved) while only 6 cases recovered with ear discharge in group 'B' from 44 cases (86.4 % improved). Fungal debris was present in 15 cases in group 'A' (75% improved) and only 10 cases remained in group 'B' (83.3% improved).

Pain was improved in 76% cases in group 'A' and 84.6% cases in group 'B'. Itching was cured only in 8 cases in group 'A' and 6 cases in group 'B'.xxx

Blocked sensations were present only in 6 cases in group 'A' compared to that 16 cases remained with blocked sensation in group 'B'.

All symptomatic patients after 1 week therapy again started with local debridement & suction cleaning and topical treatments and evaluated on second week for same symptoms with microscopy of ear. The results of examination were shown in table -3.

Table-3: Evaluation of symptoms with 2nd week examination

Symptoms	Group 'A' 'B'	Group
Ear Discharge	3	1
Fungal Debris	4	1
Pain	4	2
Itching	6	2
Blocked sensation	2	5

Ear discharge presented only in 3 cases in group 'A' and one case in group 'B' while fungal debris prevents in 4 cases in group 'A' and only 1 case in group 'B'. Pain was present only in 4 cases in group 'A'

and 2cases in group 'B'. Blocked sensation was present in 2 cases in group 'A' while 5 cases presented in group 'B'.

DISCUSSIONS

Otomycosis is a external fungal infection of external ear and canal and commonly encountered in OPD of ENT Clinic. The symptoms of otomycosis are ear discharge, pain, blocked sensation, itching and sometimes hearing loss. The otoscopic finding of otomycosis shows white, grey , black or cheese like tissues and inflammation of outer ear [9]. The main stage of treatment of otomycosis is local debridement, suction and cleaning and topical antifungal agents. Clotrimazole in form as drops, creams or solution is most widely used antifungals [8]. In our study we used clotrimazole (1%) drops 4 times a day in group 'A' and clotrimazole (1%) cream direct single instillation in EAC used in group 'B'. After 1 week all symptoms were less common in group 'B' then group 'A' except blocked sensation which was persist more even after two week treatment in group 'B'. The result of blocked sensation was similar in study done by Hurst *et al*. [10]. The more symptomatic relief in group 'B' may be due to more contact time of cream in EAC. In our study, after 1 or 2 weeks treatment, recurrences were common as shown by other studies and complete cure of Otomycosis took 2-3 weeks [7, 11]. At the end of study most of patients went in favor of clotrimazole (1%) cream usage. This may be due to single usage of cream compare to putting drops many times a day and drops also caused burning sensation especially in perforated drum.

CONCLUSION

In this study we concluded that single time usage of 1% clotrimazole cream is more effective in relieving symptoms to then clotrimazole (1%) drops and also preferred by patients for use because of its easiness to use, single time usage, less burning sensation in EAC compared to clotrimazole drops (1%). But blocked sensation was more than drops in patient of otomycosis during treatment.

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