ORIGINAL ARTICLE

Immediate Pain Relief in Acute Otitis Externa with Ichthammolglycerine Wick versus Steroid Antibiotic Ear Drops

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ABSTRACT

Aim: To compare efficacy of ichthammolglycerine wick with steroid antibiotic ear drops for immediate relief of pain in acute otitis externa.

Methods: This was a randomized clinical trial carried out on 70 patients at Department of ENT Mansoora teaching Hospital Lahore. Patients between the age of 13 to 60 years, both male and female, presenting in outpatient department from May 2017 to April 2018 suffering from acute otitis externa were evaluated. Ichthammolglycerine pack and steroid antibiotic drops were used in alternate patients. Pain was assessed by using Numerical Rating Scale on presentation and after 48 hours. Statistical analysis was done by using Mann Whitney U Test to compare average of pain scores in two groups at presentation and after 48 hours.

Results: There were 35 patients each in the Ichthammolglycerine and steroid antibiotic group. There were 48 males and 22 females in both groups. The immediate decrease in pain score was found more in the Ichthammolglycerine group as compared to steroid antibiotic drops group. The P-value was found less than .001 which is statistically significant.

Conclusion: Ichthammolglycerine wick in acute otitis externa causes earlier pain relief than steroid antibiotic drops. Thus Ichthammolglycerine wick is better than steroid antibiotic drops for the treatment of acute otitis externa.

Keywords: Otitis externa, Pain relief, Ichthammolglycerine wick, Steroid antibiotic drops

INTRODUCTION

Otitis externa is one of the most common otolaryngological emergency[1]. Otitis externa is inflammation of external auditory canal. Skin is adherent to cartilage of external auditory canal so edema resulting from inflammation stretches nerve fibers and causes severe pain[2]. Diagnosis of acute otitis externa is mainly clinical. Patient presents with severe earache, itching, discharge and hearing loss[3]. On examination, ear canal looks narrow, edematous and erythematous. Tragal tenderness is positive in acute otitis externa. Warm humid environment, vigorous ear cleansing and swimming are major predisposing factors but only swimming proven as risk factor[4].Common pathogens in acute otitis externa include staphylococcal aureus, pseudomonas, anaerobes and gram negative organisms [5]. According to Russel et al only 40% cases of otitis externa are associated with microbes[6].

Otitis externa is managed by ear cleaning and topical medication in the form of ear drops, ointments and wicks[7]. Ichthammolglycerine is a mixture of pure glycerine with ichthammol. Ichthammol is antiseptic and glycerine is hygroscopic and helps in reduction of edema[8,9].

Acute otitis externa is a very painful condition which causes disturbance in daily life activities. There are different studies comparing antibiotic drops,antibiotic wicks and Ichthammolglycerine wick for relief of pain in otitis externa, with different results. In some studies, ear drops were found more effective[10], in some studies antibiotic wicks were more useful [2]whereas in some studies there was no difference between drops and Ichthammolglycerine wick [11].So we conducted this study to find out which treatment option is more effective in immediate relief of pain in acute otitis externa.

This study was carried out with objective of comparing clinical efficacy of ichthammolglycerine wick and steroid antibiotic drops in immediate relief of pain in acute otitis externa.

MATERIAL AND METHODS

This was a randomized clinical trial carried out on 70 patients at Outpatient department of ENT Mansoora Teaching Hospital Lahore from May 2017 to April 2018.There were 35 patients each in Ichthammolglycerine group and steroid antibiotic drop group. Informed consent for inclusion in the trial was taken from study participants. Patients between the age of 13 to 60 year and both gender were included in our study.Patients with otitis media, perichondritis, diabeties, wax and foreign body were excluded from our study. Patients who were immunocompromised and those who developed allergy to ear drops and ichthamolglycerine were also excluded. Ichthammolglycerine wick and antibiotic steroid ear drops were used in alternate patients of acute otitis externa presenting at outpatient department. Pain was assessed by using Numerical Rating Scale[12], 0 meant no pain and 10 meant extreme pain. All patients were given systemic antibiotic, cloxacillin 60mg per kg body weight per day and analgesic diclofenac 50 mg BD orally. Patients were called after 48 hour for reassessment in early morning without taking morning dose of analgesic. Statistical; analysis was done by using Mann Whitney U Test to compare average of pain scores in two groups.

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RESULTS

A total number of 35 Patients were randomized to Ichthammolglycerine and steroid antibiotic ear drops group each.T here were a total of 48 males and 22 females (Table 1). Mean age scores were 31.37 and 33.49 years or ichthammolglycerine wick and steroid antibiotic drops group respectively (Table 2). Right ear was involved in 45 patients and left ear in 20 patients. Bilateral involvement was in 5 patients. The mean pain scores with ichthammolglycerine group were 3.03 and 8.31 after 48 hours and at presentation respectively (Table 3). In steroid antibiotic group mean pain scores were 6.40 and8.26 after 48 hours and at presentation respectively (Table 4). Mann Whitney U test was used to find the p value for difference of means of pain scores between the two groups. P value was found less than .001 which is statistically significant.

CONCLUSION

We can conclude that ichthammolglycerine wick is more effective than steroid antibiotic drops in immediate relief of pain in acute otitis externa. Results are shown in table below.

Table 1: Gender

Valid	Frequency	%	Valid%	Cumulative%
Male	48	68.6	68.6	68.6
Female	22	31.4	31.4	100.0
Total	70	100.0	100.0	

Table 2: Age in years

	Mean	SD
Ichthammol group	31.37	11.755
Steroid Antibiotic drops	33.49	12.908

Table 3: Pain score -Ichthammolglycerine group

	Mean	SD
At presentation	8.31	1.6O5
After 48 hours	3.03	1.706

Table 4: Pain score-Steroid antibiotic drops group

	Mean	SD
At presentation	8.26	1.721
After 48 hours	6.40	1.701

Fig. 1

Null hypothesis	Test	Sig.	Decision
The distribution of pain score on presentation is the same across categories of treatment modality	Independent Samples Mann Whitney U Test	.995	Retain null hypothesis
The distribution of pain score after 48 hrs is the same across categories of treatment modality	Independent Samples Mann Whitney U Test	.000	Reject null hypothesis

Asymptomatic significances are displayed. The significance level is .05.

DISCUSSION

Otitis externa is a common otolaryngological emergency because it causes severe pain resulting in disturbance in daily life activity. Treatment of otitis externa is targeted on removal of microorganism and relief of pain .Mostly topical antibiotics with or without steroids or ichthammol and analgesics are used. Ichthammol contain salts of sulphonic acid[8,9]. Ichthammol has got antibacterial activity against the gram positive organisms. Glycerine has got hygroscopic effect resulting in reduction of edema. Topical steroid antibiotic combination therapy is superior to topical steroid therapy alone[13]. Topical treatment is regarded as treatment of choice in acute otitis externa[14].Topical antibiotics are highly effective in acute otitis externa[15].We performed this study using same antibiotic, cloxacillin and analgesic, diclofenac in both groups of patients to avoid bias that may result from use of different salts in two groups. Cloxacillingives best results in acute otitis externa[16].

In our study Ichthammolglycerinewick was found more effective than steroid antibiotic drops for relieving pain in acute otitis externa. Masood et al found no differance in pain between steroid pack and Ichthammolglycerine pack[16]. Hornigold et al found no difference between ear drops and ichthammolglycerine pack [11].Masood et al used steroid pack while Hornigold used steroid ear drops in their studies. Emgard found topical steroid therapy more useful than steroid antibiotic combination therapy in otitis externa without complications[17] but there were only 43 patients in Emgard study. Schwartz,s supports retaining antibiotics in topical preparations for treatment of otitis externa[10].Bhatt et al showed more relief of pain with steroid antibiotic pack than ichthammolglycerine pack[2].Ichthammolglycerine wick and steroid antibiotic wick were equally significant in a study by Jasdeep Mongia et al in acute otitis externa[18].In all of the above studies there was fallow-up of 10 days or more divided into 4 or 5 visits.In our study there was one fallow-up visit only as purpose of our study was to look for immediate relief of pain.After good initial response with Ichthammolglycerine wick we can put these patients on drops until the complete resolution of the condition.

In our study, most otitis externa patients presented during the period between July to September probably due to hot humid environment and excessive sweating. We think that there are less chances of water entry and trauma by match stick, hair pin and cotton buds used for self-cleansing of ear due to presence of wick because patients with Ichthammol group become more careful than steroid antibiotic group as they are more conscious due to presence of wick. Ichthammolglycerine wick causes mild irritation and blocked ear which was not much of a problem for most of the patients. Ichthammolglycerine is also cost effective with no serious side effects and this may be the reason for more compliance with it than steroid antibiotic drops but Ichthammolglycerine wick needs to be replaced at least after 48 hours. In our opinion because of the reasons mentioned above the patients in the steroid antibiotic group were less compliant with treatment, showed less water precautions and inflicted more ear trauma to the ear during treatment when compared to the Ichthammolglycerine group. Antibiotic resistance and quality of ear drops is thought to be another factor for less relief of pain in steroid antibiotic group than Ichthammolglycerine group. Poor penetration of drops due to edema of external auditory canal may also be responsible for poor results in steroid antibiotic drops group.

CONCLUSION

Ichthammolglycerine wick in acute otitis externa causes early relief of pain than Steroid antibiotic drops. Thus Ichthammolglycerine is better than steroid antibiotic drops for the treatment of acute otitis externa.

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