

A comparison of 10% Ichthammol Glycerine pack with steroid-antibiotic pack for relieving pain in cases of Acute otitis Externa

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Background: Acute otitis externa, a common painful clinical condition is managed by aural packing to reduce edema and pain. Pack usually contains 10% Ichthammol Glycerine (IG) or commercially prepared steroid with antibiotic cream. The aim of study is to compare the clinical efficacy of 10% IG pack with steroid-antibiotic pack in relieving pain in cases of acute otitis externa.

Materials and Methods: A prospective randomized clinical trial was carried out in 106 patients at Ganesh Man Singh Memorial Academy (GMSMA) of ENT and Head Neck studies, Institute of Medicine. Pain was assessed by Wong –Baker Scale in <12 years child and Numerical Rating Scale (NRS) in patients more than 12 years of age on the day of presentation and subsequent visits till tragal tenderness disappeared.

Results: Age ranged from 1 to 75 years (mean 20.08 years) out of which 46 (43.4%) were females and 60 (56.6%) were males. Average duration of pain at presentation was 3.9 days (range 1-15 days). Average number of visits in IG pack group (n=55) was 2.82 (2-4 visits) while in steroid-antibiotic group (n= 51) it was 2.38 (2-4 visits). There was statistically significant decrease in the number of visits in steroid group ($p < 0.05$). However, decrease in pain score in second visit as compared to first visit was not significant ($p > 0.05$) in both groups. Average number of visits in steroid-antibiotic group required to have reduction in Wong –Baker Scale by 50% or more was 2.0 which was statistically significant ($p < 0.01$) as compared to IG pack group (2.9). Similar results in NRS were not significant ($p > 0.05$).

Conclusion: Steroid-antibiotic pack can be used for earlier relief of pain and decrease number of visits in management of acute otitis externa.

Keywords: acute otitis externa, ichthammol glycerine (IG) pack, steroid-antibiotic aural pack.

Introduction

Acute otitis externa, one of the most painful lesions in body is also a commonly encountered clinical entity. It is commonly diagnosed in patients presenting with otalgia in a primary care center or to an otologists. It can present as diffuse or localized form of inflammation of external ear canal.

Skin is adherent firmly to the cartilage of external auditory canal. The initiating event is believed to be an abrogation

of the hydrophobic ceruminous coating of the external canal. Edema occurring due to inflammation stretches nerve fibers and cause extreme amount of pain. So treatment includes not only antibiotics and analgesics systemically but also aural packing. It acts not only by its chemical ingredients but also mechanically by splinting action to prevent nerve stretch. Traditionally these packs are impregnated with 10% Ichthammol Glycerine. Ichthammol has antiseptic action while glycerine due to its hygroscopic nature decreases

edema. Glycerol and ichthammol solution has a specific antistaphylococcal action.^{1,2} Steroid-antibiotic cream can serve both functions. Steroid reduces edema by its action over capillary wall tone and antibiotic controls overall infection.

Studies comparing different antibiotics and steroid combinations have been done.^{3,4,5,6,7,8} Topical antibiotic-steroid combination therapy is superior to steroid therapy alone for symptomatic control of otitis externa.^{9,10} This study was carried out with the objective of comparing clinical efficacy of 10% IG pack with steroid-antibiotic pack for relieving pain in cases of acute otitis externa.

Materials and Methods

Patients of all age and both gender presenting in OPD of Ganesh Man Singh Memorial Academy of ENT and HN studies from October 2008 to December 2008 and diagnosed to have acute otitis externa were evaluated. Number of patients with acute otitis externa needing aural packing was 124. Out of these, six had periaural abscess, ten lost to follow up and two removed the pack themselves before 48 hours. These cases were excluded from the study. Hence, 106 patients were included in the study. Any evidence of discharge from middle ear cavity was looked for. In such cases aural packing was not done. Periaural Abscess secondary to otitis externa were drained and not included in the study. When patient were evaluated, those needing aural packing were randomized for the type of pack. Alternately IG and steroid packing was done.

Before packing was carried out, pain was assessed. In children less than twelve years, it was done by using Wong Baker Scale. The scoring system was explained and the children were asked to select the face that best resembled their feeling. In children less than five years, mother was instructed to provide the score. In patient more than twelve years, a ten point Numerical Rating Scale (NRS) was used and the score was given by the patient. The score of pain on first visit was recorded.

Patients were prescribed the same systemic antibiotic (cloxacillin) and analgesics (ibuprofen+paracetamol). Patients were called after 48 hours for reassessment. On subsequent visits, they were called in the early morning without taking morning dose of analgesic. This ensures that the scoring done at that time was not influenced by analgesics.

Scoring in subsequent visit was done by same method as per age. If tragal tenderness was present repacking was done and patient was asked for follow up again after another 48 hours. Assessment and repacking was done every 48

hours till tragal tenderness disappeared.

Statistical analysis was done using Z test of mean to compare average number of score and visits in two different groups.

Results

Age ranged from 1 to 75years (mean 20.08years) (Table 1). Right sided disease was found in 61 where as left sided was in 39 with 6 patients having bilateral otitis externa. Amongst the total of 106 patients, IG packing was done in 55 (51.88%) while 51 (48.11%) had steroid packing.

Table 1: Age and sex Distribution

Age(years)	Male	Female	Total
d"10	12	16	28
11-25	31	16	47
26-50	15	12	27
51-75	2	2	4
Total	60	46	106

At presentation, average duration of pain was 3.92 days. (Range 1-15 days). Fever was complained by 25 patients. Disturbed sleep and pain on movement of jaw was found in 25 patients. The maximum number of visit was six by a single patient during the course of treatment. Seventy one came twice, twenty four patients visited three times, nine visited four times and only two patients had more than five visits. Average number of visits in IG pack group (n = 55) was 2.82 (2-4 visit) whereas, in steroid antibiotic group (n=51) it was 2.38 visits (2-4 visits). There was statistical significant decrease in no of visits in steroid group ($p < 0.05$).

Discussion

Otitis externa is mostly caused by bacteria, especially *Staphylococcus aureus*.^{11, 12, 13} Fast and effective control of pain in cases of acute otitis externa is the basic part of its management. Aural packing is basically targetted to decrease pain. As both gram positive and gram negative bacteria cause infections of the external ear, antimicrobial preparations with broad spectrum activity are required for its effective treatment

Topical preparations provide a concentration of antibiotic locally many times greater than that which can be obtained by systemic administration. Thus, organisms listed as "resistant" to a particular antibiotic will likely be susceptible to the antibiotic when it is given topically.¹⁴ Drugs in ear drops are potentially ototoxic, an issue if prolong use is required in the presence of a perforated tympanic membrane.¹⁴ Topical medications will not be able to penetrate an edematous canal, a problem that can be overcome by the

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insertion of an ear wick.¹⁴ Hence insertion of wick is a better topical therapy of otitis externa than instilling ear drops¹¹.

Acidification of the ear canal is toxic to many bacterial (including pseudomonas) and fungal species. Thus, topical medications with an acidic pH have been a mainstay of treatment for otitis externa.¹⁴ Studies using drop also showed significant improvement with steroid and antibiotic combination when compared with only antibiotic drop.¹⁵ Fungi account for 2% of cases with otitis externa hence routine use of antifungal in wick or ribbon gauge is not advisable.¹⁴ Few studies have compared topical and oral antibiotic treatment with a single topical agent, but we have used same oral antibiotics in both groups to prevent biasness.

We found acute otitis externa to be common in young children and young adults which is in contrast to that observed by Neher.¹⁶

Masood et al¹⁷ in their randomized control trial found no difference in pain parameters when steroid pack was compared with 10% IG pack. Similar prospective study done by Hernigold et al failed to show any difference.¹⁸ But, Masood et al had used steroid pack only whereas, Hernigold et al had used ear drop only. In both studies, sample size was much lower than that of our study. In our study, pain assessment was done by two scoring systems as appropriate to age and intelligence. In addition to that, the sample size was larger and randomization was done.

Acute otitis externa was found more in the right side and in males. This could be related to right handedness of majority of people which may lead to more ear pricking, leading to trauma and more outdoor activities in male. Steroid packing has less no of visits that indicate faster control of pain. Relief of pain was not significantly obvious in obvious visit in both groups. Faster decrease in pain was shown in patient evaluated with Wong Baker Scoring as well. No serious side effect of steroid and antibiotic pack was seen during the study period.

Conclusion

Steroid-antibiotic pack can be used for earlier relief of pain leading to decrease number of hospital visits in the management of acute otitis externa.

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