

Efficacy of 2% Glacial Acetic Acid in External Canal PruritisRashmi Ramashesh¹, Lekha KA², Nagarathna HK³¹Associate Professor, The Oxford Medical College and Research centre,²Assistant Professor, The Oxford Medical College and Research Centre³Associate Professor, The Aakash Institute of Medical Sciences and Research Centre

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Conflict of interest: Nil

Abstract:

Introduction: Isolated itching of ears or external canal pruritis is one of the common conditions seen in ENT outpatient department with no identifiable cause. Examination findings always reveal normal external auditory canal and hence treatment becomes challenging. This study aims to compare the MISS (Modified Itch severity score) before and after topical application of 2% glacial acetic acid in cases of external canal pruritis.

Materials and Methods: This was a prospective study of 35 patients who came to ENT OPD with the complaint of ear itching and were examined. Any patient with pathological otoscopic findings were excluded. They were given Modified Itch severity questionnaire and the scores were noted. 2% glacial acetic acid in the form of ear drops were administered for 3 weeks and the questionnaire scores were noted again by the physician.

Results: Based on the different parameters of the questionnaire it was found that severity of itch was strong in 25.7% of the patients. 37.1% had difficulty in sleeping which indicates the severity of the condition. 18.51% patients suffered from stress along with external canal pruritis. The pre and the post medication MISS score after using 2% glacial acetic acid was found to be statistically significant.(p<0.001)

Conclusion: Stress plays an important role in intractable ear itching. Use of ear buds and ear plugs have been incriminated as predisposing factors for chronic itching. 2% glacial acetic acid ear drops was proved to improve symptoms in patients who had tried all kinds of preventive measures but failed to improve.

Keywords: ear itching; glacial acetic acid; stress Abbreviations: GERD-gastroesophageal reflux disease MISS-Modified Itch severity score.

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Introduction

The external auditory canal skin is richly supplied by nerve fibres and is vulnerable to touch. [1] Hence various causes for ear itching are frequent use of ear buds, minimal ear wax which elicit a sensation of itch in the ear canal. [2] GERD, allergic contact dermatitis and more recently those who constantly use ear plugs have also been implicated in causing ear canal pruritis. [3] Histological and immunohistochemical examination of skin biopsies from patients with isolated itching of the external auditory canal did not support a diagnosis of dermatitis. [4]

The treatment approach for these patients includes diagnosis and control of predisposing factors like using moisturizers in the external auditory canal; removal of cerumen pH; avoidance of ear plugs and ear buds, checking for sensitivity to contact allergens (e.g. nickel earrings) and control of systemic disease (e.g. diabetes mellitus). Patients must be clearly instructed not to manipulate their external auditory canal. Many medications are used for the treatment of itching in the external auditory

canal which include topical hydrocortisone, topical triamcinolone, mineral oil, silver nitrate gel and oral antihistamines. In one of the studies it has been shown that Castellani's paint can be administered safely without affecting the skin bacteria in patients with an itchy external ear canal [10] We believe that further studies are required particularly in order to determine the incidence of somatization disorder. [4]

The ear canal pH of normal individuals is acidic but in otitis externa pH tends to become alkaline. Studies have shown that reacidification of the ear canal may lead to resolution of otitis externa. This is the rationale behind using 2% glacial acetic acid in otitis externa. In our study an attempt was made to find out the efficacy of 2% glacial acetic acid topical application in reducing the symptoms in itchy ears using the modified itch severity scale.

Materials and Methods:

This study included a total of 35 patients to OPD with the complaint of recurrent ear itching. This

was a prospective study and approved by the institutional ethical committee. For all the patients who had no pathological findings in otoscopic examination, symptoms were assessed using Modified itch severity questionnaire. This questionnaire was modified by B Acar et al [6] and assessed five of seven parameters addressed by Majeski and colleagues [7] namely: day time incidence, itch type, itch severity, effect on sleep and effect on general psychological state. Marks for these five parameters were then summed together and multiplied by three to obtain the total score; thus, patients' total Modified Itch Severity Scale scores could range from zero (no pruritus) to 15 (most severe pruritus)

After taking informed consent patients were administered commercially available ear drops containing 2% glacial acetic acid.

At each follow up, the compliance of the patient was noted from the amount of drug remaining and whether the patient had recovered. After 3 weeks, the questionnaires were administered to the patients by the same physicians and the scores were noted.

Inclusion criteria: patients aged between 17 to 65 yrs coming with chronic ear itching

Exclusion criteria:

- Pregnancy,
- Chronic otitis externa (more than three weeks),
- Acute otitis media
- Perforated ear drum
- Perichondritis allergy to any of the drugs

Statistical Analysis: Comparative study

Results:

Table 1: Demographic details

Variables	Statistics	
Age	N	35
	Mean (SD)	42.40 (14.306)
	Median	38
	Q1: Q3	33 : 49
	Min: Max	20 : 71
Sex, n (%)	Female	18 (51.4)
	Male	17 (48.6)

In our study we found out that the mean age of the patients who participated in the study was 42 years of age. Among 35 patients the male and female distribution was almost same 1:1

Table 2: Disease characteristics

Variables	Statistics	
Intensity	Moderate	22 (62.9)
	Very strong	02 (5.7)
	Strong	09 (25.7)
	Weak	02 (5.7)

Among the different parameters in Modified Itch severity scale the intensity of itch was compared and it was found that 2 (5.7%) patients had weak, 22 (62.9%) had moderate, 9(25.7%) strong and 2 (5.7%) had very strong intensity.

Difficult sleep	No	22 (62.9)
	Yes	13 (37.1)

In our study it was also found that 22(62.9%) had no difficulty in falling asleep because of the itching and 13(37.1%) had difficulty in falling asleep.

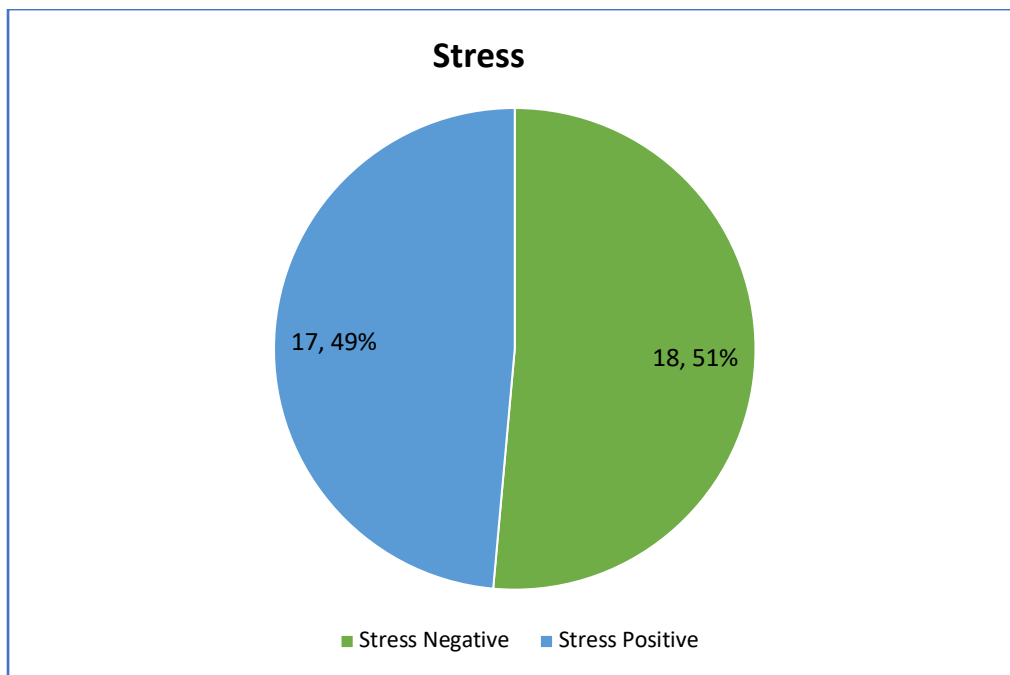


Figure 1: Distribution of patients with ear itching having stress

In present study it was found out that 17.49% had no stress and 18.51% had stress in the form of depression, agitation, anxiety or difficulty in concentration which indicates that stress has a major role to play in external canal pruritis.

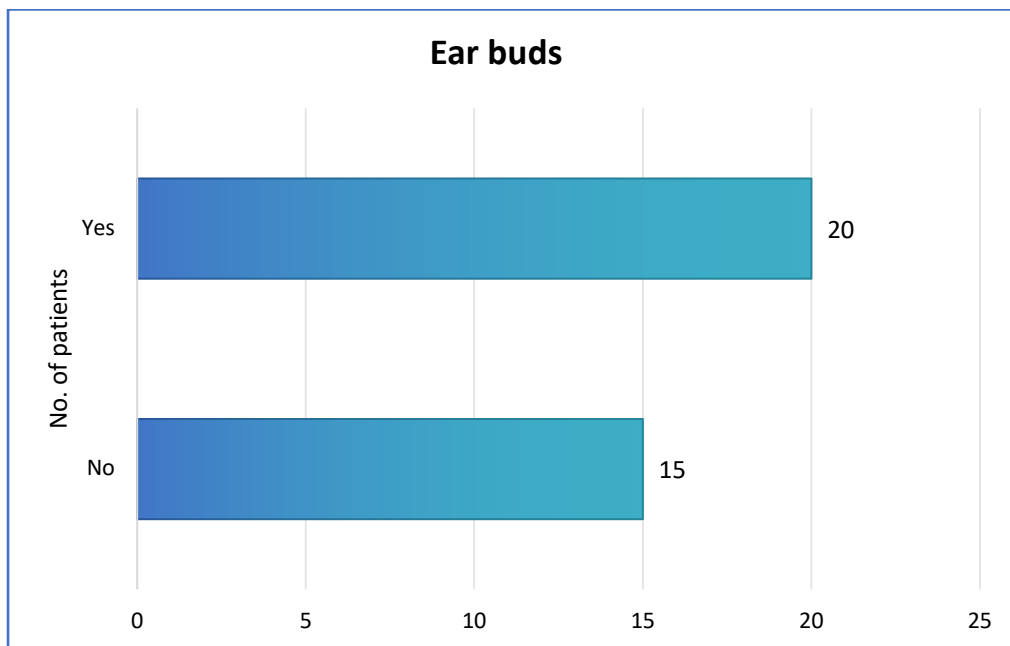


Figure 2: Distribution of patients using ear buds in ear canal pruritis

20 (57.1%) out of 35 patients were using ear buds to get relief from their constant ear itching which may further be incriminated in itch cycle.

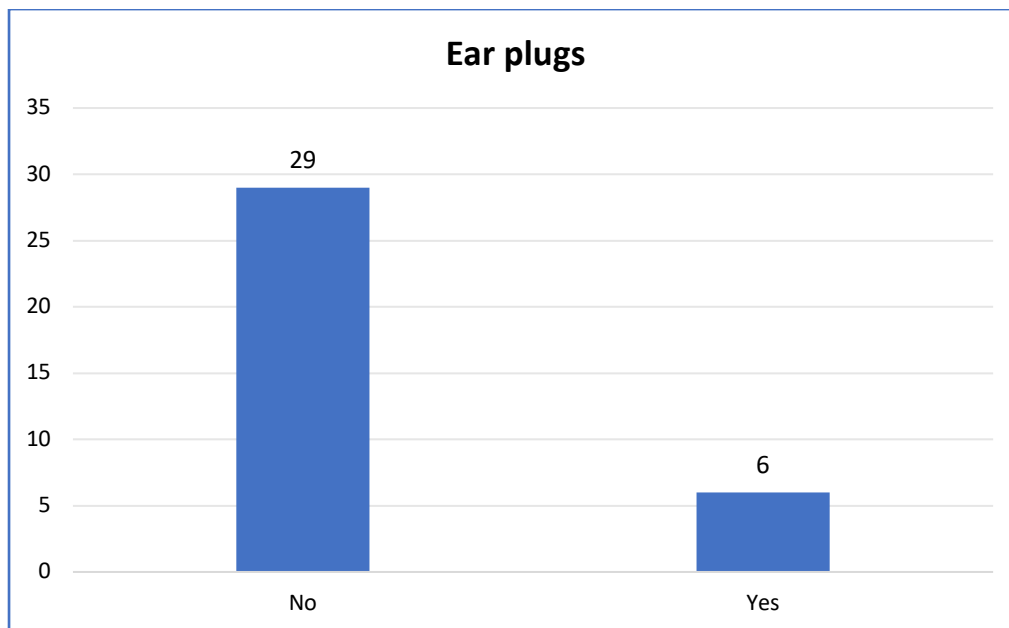


Figure 3: Distribution of patient using ear plugs and having ear itching

It was found that out of 35 patients 29(82.8%) of them were using ear plugs which can be incriminated to be one of the major causes of ear itching in the modern world.

Table 3: Table showing the comparison of MISS score before and after the treatment

Variables	Statistics	Pre MISS score	Post MISS score	Z	P value
Age	N	35	35	-4.744	<0.001
	Mean (SD)	12.43 (2.638)	8.40 (3.696)		
	Median	12	9		
	Q1: Q3	12 : 15	6 : 9		
	Min: Max	3 : 15	3 : 15		

Wilcoxon signed ranks test was performed to compare the median values of MISS score between pre and post medication. The pre and the post medication MISS score after using 2% glacial acetic acid was found to be statistically significant.($p < 0.01$)

Discussion

The mean pH of normal external auditory canal was 3.950 ± 1.199 . The normal EAC pH is relatively acidic and it became more alkaline in cases of acute otitis externa with reversion back to acidic pH after treatment. Acidification of the external auditory canal is the only treatment required in most cases. [12]. The same principle has been applied in our study and the effect of instillation of 2% glacial acetic acid in chronic pruritis has been studied. On thorough literature search there were no studies related to present study. Clinicians have tried different modalities of treatment like topical ear steroids with low potency (e.g. hydrocortisone) or with combined treatments with acetic acid ear drops. In our study we found out that the mean age was 42 years of age when compared to study done by Abacar et al where symptoms are more frequently seen in middle-aged

and elderly women. In the present study it was found that 18.51% had stress in the form of depression, agitation, anxiety or difficulty in concentration which indicates that stress has a major role to play in external canal pruritis. This is in accordance with another study where it was concluded that type D personality were independently associated with itch severity. [8] 29(82.8%) of them were using ear plugs which can be incriminated to be one of the major causes of ear itching in the modern world. This was similar to a study where it was concluded that in 39% of the subjects ear itching was found to be a side effect of use of ear plugs and potential pathological growth was found to be significantly more [9]. The pre and the post medication MISS score after using 2% glacial acetic acid was found to be statistically significant. In a similar study it was found that glacial acetic acid, dexamethasone and neomycin sulphate was significantly more effective in treating otitis externa when compared with glacial acetic acid [11]. We were unable to find any studies done to establish the efficacy of glacial acetic acid for external canal pruritis.

Conclusion

Ear itching is a debilitating condition which can hamper the quality of life of patient. An attempt has been made to make to introduce a safe and cost effective treatment (2% glacial acetic acid ear drops) which has been used effectively for chronic ear infections.

Stress plays an important role in external canal pruritis which needs to be addressed aggressively while treating the patients. The use of ear buds and ear plugs have been incriminated in ear itching and their use has to be curtailed in order to prevent further complications. There is statistically significant improvement in modified itch severity scale after 3 weeks of use of 2% glacial acetic acid. Hence 2% glacial acetic acid can be used effectively in cases of intractable ear itching.

Appendix 1. Modified Itch Severity Scale questionnaire for external auditory canal pruritis

1) For each part of the day, what is the frequency of appearance of the itch? (Please mark with 'X' in the box that corresponds to your answer.)

Never itchy occasionally itchy Often itchy Always itchy

- Morning
- Noon
- Evening
- Night

2) To what extent do each of the following describe the itch?

Not at all To a small extent To a moderate extent To a great extent

- Stinging
- Stabbing
- Burning
- Annoying
- Unbearable
- Worrisome

3) Please indicate the intensity of itch for each of the following:

- None Weak Moderate Strong Very strong
- Itch in its average state
- Itch in its worst state
- Itch in its best state

4) Please indicate how often any of the following happens:

- Never Sometimes Almost always
- Difficulty falling asleep due to itch
- Awakening due to itch
- Use of sleep medications

5) Has your mood changed because of the itch? (You may circle more than one answer.)

- No change
- Depressed
- More agitated
- Difficulty in concentration
- Anxious

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