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A randomised comparative study of Hydroethanolic extract of *Chenopodium* versus Epley's maneuver on improving the quality of life of benign paroxysmal positional vertigo patients

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Abstract

Background: Benign Paroxysmal Positional Vertigo (BPPV) occurs mainly due to the dislodgment of Calcium crystals which can be corrected with certain repositioning techniques like Epley's maneuver. The Homoeopathic preparations are also known to be effective in the management of vertigo.

Objectives: Primary objective was to compare the effect of Hydro ethanolic preparations of *Chenopodium* and Epley's maneuver on improving the vertigo and also to assess the quality of life of BPPV patients.

Methods: A Randomised Comparative Trial was conducted on 30 patients at ANSS Homoeo Medical College Hospital, Kottayam. The patients enrolled were randomised to receive either Epley's maneuver (Group A-15 participants) or Homoeopathic treatment with Hydro ethanolic extract of *Chenopodium* (Group B-15 participants) and were reviewed on two weeks interval for 3 months. The outcome parameters used were vertigo symptom scale-short form score (VSS) and quality of life was assessed by Dizziness Handicap Inventory score (DHI).

Results: The paired t test were done to evaluate the difference within the group. There was a statistically significant reduction of VSS Score, {For Group A (SD=4.8; t=2.4, p<0.05)}, {For Group B (SD=4.5; t=2.1, p<0.05)}. The student t test was done to evaluate the difference between Group A & B which showed that the therapeutic efficacy did not differ between the groups. There was a statistically significant reduction in DHI Score in Group A, (SD=4.8; t=2.5, p<0.05) and statistically significant increase of DHI Score in Group B, (SD=4.7; t=2.0, p<0.05).

Conclusion: From the study we found that Epley's maneuver significantly reduces the intensity of vertigo and also helped to improve the quality of life of patients suffering with BPPV. Hydroethanolic extract of *Chenopodium* significantly reduces only the intensity of acute episodes of BPPV, but there is no significant difference on the improvement in quality of life of patients with BPPV.

Keywords: Benign paroxysmal positional vertigo, *Chenopodium*, Epley's maneuver, randomised comparative study

Introduction

Benign paroxysmal positional vertigo (BPPV) is a common vestibular disorder leading to significant morbidity, psychosocial impact, and medical costs^[1]. BPPV is triggered by certain changes in head position. People can experience dizziness, a spinning sensation (Vertigo), light headedness, unsteadiness, loss of balance and nausea. Calcium crystals called canaliths can end up in the semicircular canals. If these crystals become dislodged and move around, they can cause the sensation that the world is spinning or moving, also known as vertigo^[2]. The standard clinical test for diagnosis is Dix Hallpike maneuver^[3]. There are certain repositioning techniques like Epley's maneuver, can dislodge these crystals and remove them from the semicircular canals. The maneuver begins with placement of the head into the Dix-Hall pike position, to evoke vertigo. The posterior canal on the affected side is in the earth's vertical plane with the head in this position. After initial nystagmus subsides, a 180 degree roll of the head to the position in which the offending ear is up is performed. The patient is then brought to the sitting upright position^[4]. The maneuver is repeated until no nystagmus is elicited. The efficacy of Epley's maneuver has been determined in previous studies^[4]. It is important to reduce the frequency, intensity and duration of vertigo with a cost effective medication that has no adverse effects.

Some clinical trials shows the efficacy of the homoeopathic remedies when compared with the conventional treatment in the management of vertigo [5]. It is the need of the hour to find a specific remedy for BPPV where there is scarcity of characteristic symptoms. The medicine *Chenopodium Anthelminticum* is prepared from the plant belongs to Family *Chenopodiaceae* [6]. The Hydro-ethanolic extract of *Chenopodium* is prepared from fresh plant according to Homoeopathic Pharmacopoeia of India (HPI, Vol IX) is found to be effective in the management of vertigo [7].

According to Boericke's *Materia medica*, Homoeopathic preparations of *Chenopodium Anthelminticum* is used for Auditory nerve affections, Meniere's disease, tinnitus etc [8]. But the randomised clinical trials are lacking with the homoeopathic preparations of *Chenopodium*. The objective of the present study is to compare the effect of Epley's maneuver with the Hydro ethanolic extract of *Chenopodium* on improving the vertigo and Quality of life of Benign paroxysmal positional vertigo patients.

Review of literature

A prospective randomized clinical trial conducted by Akdal G,Çelik in elderly patients aged 65 years and above with a positive history of benign paroxysmal positional vertigo (BPPV) shows that elderly patients with BPPV are benefited from the Epley maneuver, and had a significant improvement in Quality of Life of the patients. Epley's maneuver is a well-established and proven method in managing BPPV patients [8]. In a study done by Wang LY, to observe the dizziness handicap inventory (DHI) scores in 72 patients with BPPV, showed that the mean post-repositioning scores were dramatically decreased compared with pre-repositioning scores and the difference was significant ($p < 0.01$). Thus DHI scale can be successfully used in order to evaluate BPPV patients before and after the treatment procedure [9].

A study was conducted by Yanik B *et al.* to investigate the reliability and validity of the VSS scale in the 103 patients among Turkish population. The patients were evaluated with the VSS scale and the scale was found to be valid and reliable. Thus, they can be used in people with BPPV for assessment and monitoring the treatments [10].

A study conducted by Dr Parth aphale *et al.*, on thirty diagnosed cases of BPPV, shows that there was great improvement after treatment with Homoeopathic medicines which shows their efficacy in treating BPPV [11].

This study can offer a cost effective treatment without any side effects to reduce the morbidity of BPPV patients and may provide more evidence about the actions of the Homoeopathic drug *Chenopodium Athelminticum* on Auditory affections.

Objectives

Primary Objectives

- To compare the effect of Hydro ethanolic preparations of *Chenopodium* and Epley's maneuver on improving the vertigo using Vertigo Symptom Scale-shortform (VSS) [12].
- To assess the quality of life of Benign paroxysmal positional vertigo cases using Dizziness Handicap Inventory score (DHI) [13].

Methodology

Study design: Single centred Prospective Randomised

Comparative Trial

Study setting: Outpatient Department of Athurasramam NSS Homoeopathic Medical College (ANSS), Kottayam, Kerala.

Study Population: Patients coming on OPD of ANSS Homoeo Hospital

Sampling size: 30 diagnosed cases that enrolled were randomised (simple random technique) to receive either Epley's maneuver (Group A-15 participants) or Homoeopathic treatment with Hydro ethanolic extract of *Chenopodium* (Group B-15 participants) and were reviewed on two weeks interval for 3 months.

Selection Criteria

Inclusion criteria

- Male and female subjects with age 18-70years
- Able to provide written informed consent.
- Patients fulfilling the diagnostic criteria for BPPV

Exclusion criteria

- Patients with diseases having advanced pathology
- Patients suffering from severe cervical spondylosis and other cervical spine injury.
- Patients with other systemic diseases

Mode of intervention

Group A: Correction of BPPV with Epley's canalith reposition technique. Pre procedural and post procedural instructions were given to all the patients who undergo Epley maneuver. The maneuver was repeated until symptomatic relief. The follow up processes were explained to the patients and were reviewed on two weeks interval for 3 months

Group B: Homoeopathic treatment with Hydro ethanolic extract of *Chenopodium*.

Dose-0.5 ml of Hydro ethanolic extract of *Chenopodium* is mixed with 15 ml of Aqua distillate and taken per oral, three times in a day, after food. The follow up processes were explained to the patients and were reviewed on two weeks interval for 3 months

Primary outcome measure

Assessments to address the Primary Objective, vertigo was assessed by Vertigo Symptom Scale-shortform [114] (VSS) and Quality of Life was assessed by Dizziness Handicap Inventory score (DHI).

Observation and Results

Statistical Analysis

The paired t test were done within the group to evaluate difference in outcome variable of pre and post intervention.

1. Assessment based on VSS score

a) Group A

The paired t ($SD=4.8$; $t=2.4$, $p < 0.05$) showed that there was statistically significant difference observed in the Group A when compared with the mean of VSS score.

b) Group B

The paired t ($SD=4.5$; $t=2.1$, $p < 0.05$) showed that there was

statistically significant difference observed in the Group B when compared with the mean of VSS score.

The student t-test was done to evaluate the difference between Group A & B. The results showed therapeutic efficacy did not differ between the groups, although VSS score decreased in each group.

2. Assessment based on DHI score

a) Group A

The paired t (SD=4.8; t=2.5, p<0.05) shows that there is statistically significant difference observed in Quality of life of Group A patients when comparing with the mean of DHI score.

b) Group B

The paired t (SD=4.7; t=2.0, p<0.05) shows that there is no statistically significant difference observed in Quality of life of the Group B patients when comparing with the mean of DHI score.

Result

30 patients in Group A and Group B underwent analysis. The mean VSS score for improvement of symptoms was 3+/- 4.8 in Epley’s group and 2.6+/-4.59 in Chenopodium group. The mean DHI score for improvement in quality of life was 3.13+/-4.8 in Epley’s group and 2.5+/-4.7 in Chenopodium group.

Discussion

BPPV is a common clinical syndrome, and increasing age will accelerate its incidence. So it has a higher incidence among elderly. Since this disease affects the quality of life of patients, the treatment drugs and methods need to be explored urgently.

The study aimed to compare the effect of Epley’s maneuver with Hydroethanolic extract of Chenopodium on improving the Quality of Life and treatment of BPPV patients. In our study the mean age of participants was 54years and more common in 50-60 years age group. Male to female ratio in this study was 3:1. Right side was affected in 20 (66.6%) participants. In this study, statistically significant difference

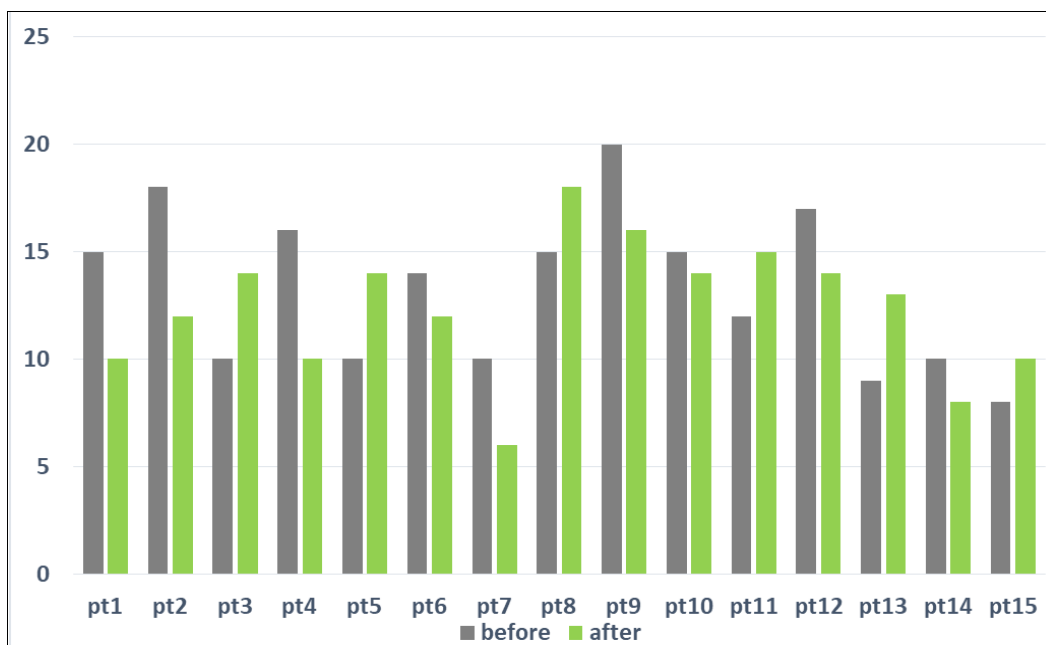
were observed within both groups in reducing the frequency, dizziness, unsteadiness and anxiety symptoms of BPPV based on VSS score of pre and post intervention. But there is no statistically significant difference was observed between the Group A & B. From the study it is evident that Epley’s maneuver shows significant improvement in quality of life of patients based on DHI score. But Chenopodium does not shows the significant improvement in Quality of Life based on DHI score. This shows that Homoeopathic Constitutional prescription is necessary for the recovery of the patients after the acute episodes of vertigo. The concurrent prescription of both Epley’s reposition technique and Chenopodium will be superior than that given individually. Both treatment group showed a clinically relevant reduction in the mean duration and intensity of vertigo attacks during the treatment period.

Implication

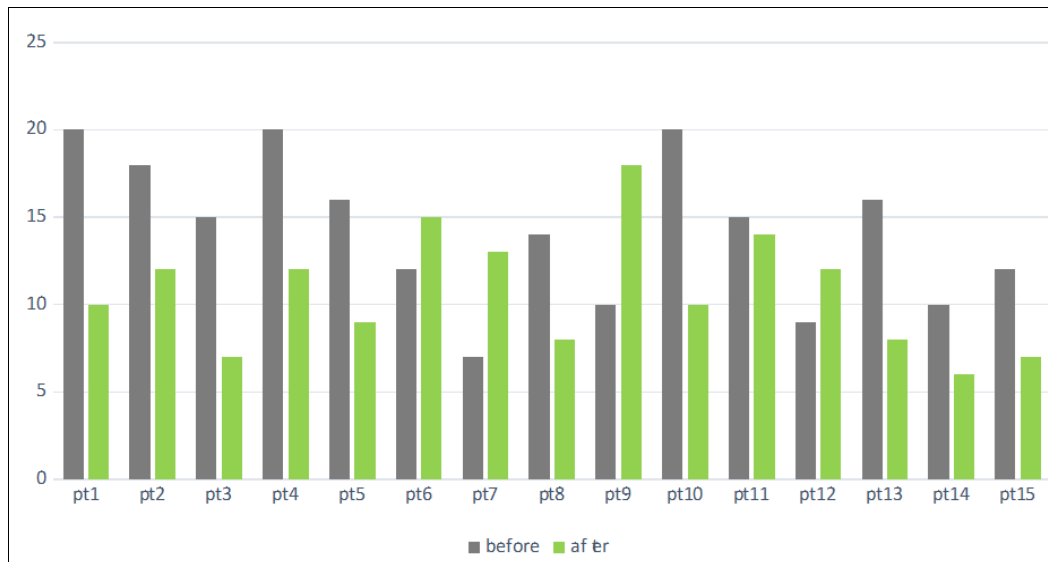
Inexpensive and simple repositioning technique would result in rapid improvement of many of the BPPV patients, but that require training of Professionals. In addition to that it would be more effective in elderly patients especially those with various prescribed medications to decrease the complications and quantity of drugs. The result of the study may provide more evidence about the actions of the Homoeopathic drug Chenopodium on Auditory affections. Homoeopathic preparations of Chenopodium can be used effectively in the management of acute episodes of Vertigo. But further double blind multicentric randomised studies are required for the confirmation of results.

Limitation

Since our study did not adopt a control group, we could not exclude bias for spontaneous remission. A relatively low sample size is another limitation of the present study. However there are very few studies which have compared the medical therapy with repositioning manoeuvres. This study should be replicated with large sample size to evolve a valid conclusion. Further studies with a Randomised Controlled Design are needed to validate the efficacy of Hydro ethanolic extract of Chenopodium.



Graph 1: Duration of vertigo – Chenopodium (In minutes)



Graph 2: Duration of vertigo-epilepsy maneuver

Summary

BPPV is common among elderly patients. The study was conducted to compare the effect of Epley's maneuver with Hydroethanolic extract of *Chenopodium* on improving the Quality of Life and vertigo of BPPV patients. In our study, the cases fulfilling the diagnostic criteria for BPPV were randomly allocated into two groups, one with Epley's Reposition maneuver and other with Hydro ethanolic extract of *Chenopodium* for 3 months. The patients were evaluated for the symptoms using VSS score and DHI score before and after intervention. From the study we found that Epley's maneuver significantly reduces the intensity of vertigo and also helped to improve the Quality of Life of patients suffering with BPPV. Hydroethanolic extract of *Chenopodium* significantly reduces the intensity of acute episodes of BPPV. However there is no significant difference on the improvement in Quality of Life of patients with BPPV. The study also shows that the therapeutic efficacy did not differ between the two groups although there is significant difference within the group. From the study it was also observed that Homoeopathic preparations of *Chenopodium* can be used effectively in the management of acute episodes of Vertigo. The concurrent prescription of *Chenopodium* and Epley's reposition technique will be superior to other options. This should be followed by Homoeopathic Constitutional management for the better improvement in the Quality of Life of BPPV patients.

Conclusion

In conclusion we found that Epley's maneuver significantly reduces the intensity of vertigo and also helped to improve the Quality of life of patients suffering with BPPV. Hydroethanolic extract of *Chenopodium* significantly reduces the intensity of acute episodes of BPPV. However there is no significant difference on the improvement in quality of life of patients with BPPV. The study also shows that the therapeutic efficacy did not differ between the two groups although there is significant difference within the group. Further studies are suggested with more follow up period and large sample size with control group for evaluating the effects of different Homoeopathic preparations of *Chenopodium* with or without repositioning maneuvers.

Conflict of Interest: None

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