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A COMPARATIVE STUDY OF EPLEY'S MANOEUVRE VERSUS EPLEY'S MANOEUVRE PLUS BETAHISTINE IN THE MANAGEMENT OF BENIGN PAROXYSMAL POSITIONAL VERTIGO

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ABSTRACT

Background: Vertigo is a common problem encountered in otorhinolaryngological practice. Benign paroxysmal positional vertigo (BPPV) account for approximately 31% of all cases seen in dizziness clinics. The cause of BPPV is unknown in nearly half of the patients. Antivertiginous drugs (e.g., betahistine) that improve labyrinthine microcirculation are being administered to treat residual dizziness. However, there is no good evidence that these medications provide relief for residual dizziness. Several approaches to treating BPPV, such as Epley's manoeuvre, it results in rapid short-term improvements. **Methods:** A total of 50 patients presenting with postural giddiness who were not on any previous history of medication for BPPV were randomly divided into 2 groups. Group A underwent Epley's manoeuvre alone and Group B patients underwent Epley's manoeuvre and received 16mg betahistine twice daily. Both the groups were followed up for 2 weeks. **Results:** Epley's manoeuvre alone or when combined with betahistine was found to alleviate the symptoms of BPPV. Symptoms were significantly reduced in Group B when compared with patients in Group A after 2 weeks. **Conclusion:** Betahistine in addition to Epley's manoeuvre is more effective than Epley's manoeuvre alone in alleviating the symptoms of BPPV. However, more studies regarding the benefits of betahistine in addition to Epley's manoeuvre is required.

KEYWORDS

Benign paroxysmal positional vertigo; Epley's manoeuvre; Betahistine; Dizziness Handicap Inventory

INTRODUCTION

Vertigo is a common problem encountered in medical and otorhinolaryngological practice. Causes maybe otological, neurological, medical or psychogenic. Benign paroxysmal positional vertigo (BPPV) accounts for approximately 31 per cent of all cases seen in dizziness clinics[1]. Benign Paroxysmal Positional Vertigo (BPPV) refers to the transient vertigo, each episode of vertigo continues for <1 minute[2]. There are several approaches to treat BPPV, such as vestibular habituation exercises, labyrinth sedation drugs, surgical ablation of the posterior semicircular canal, and repositioning manoeuvre[3]. The most commonly used approach for the treatment of BPPV is Epley's manoeuvre which results in rapid short-term improvements.

Betahistine which improves labyrinthine microcirculation are being administered by many clinicians to treat residual dizziness. However, there is no good evidence that these medications provide relief for residual dizziness[7]. The main aim of the study was to compare the efficacy of Epley's manoeuvre alone versus Epley's manoeuvre with labyrinthine sedatives in the management of BPPV.

MATERIALS AND METHODS

A randomized control study was carried out in patients coming to E.N.T outpatient department of our hospital with features of benign paroxysmal positional vertigo (BPPV) between November 2020 to April 2021 after obtaining ethical clearance.

Inclusion criteria:

- Age >18 years to 79 years
- Patient willing to give informed consent
- Patients with postural giddiness
- Patients who were previously not on medication for BPPV

Exclusion criteria:

- Patients not willing to give informed consent.
- Patients with severe neck problems, uncontrolled hypertension or recent history of cerebrovascular accidents
- Patients with other causes of vertigo
- Patients on medication for BPPV

Diagnosis of BPPV was made after a thorough history, clinical examination including Dix Hallpike test. After obtaining an informed consent from the patients, a total of 50 patients were included in the study after obtaining informed consent, and were then divided into 2 groups of 25 each. Group A underwent Epley's manoeuvre alone while Group B underwent Epley's manoeuvre and received 16mg of betahistine twice daily for a total period of 2 weeks. Patients were followed up at weekly intervals for a period of 2 weeks to look for symptomatic improvement based on Dizziness Handicap Inventory (DHI).

Statistical analysis was done using open epi software version 2.3.1 using Post Hoc Dunnett's test with ANOVA and p value <0.05 was considered to be statistically significant.

RESULTS

A total of 50 patients were included in the study. Forty (80%) were males and ten (20%) were females (Table 1). The age group ranged from 25 to 55 years with an average age of 38 years. Dix Hallpike was positive on the right side in 20 patients (40%), on the left in 10 patients (20%), and bilaterally positive in 20 patients (40%).

Table 1: Sex distribution

Males	40 (80%)
Females	10 (20%)

Table 2: Age distribution

25-35	10 (20%)
35-45	30(60%)
45-55	10 (20%)

Table 3: Positivity of Dix Hallpike manoeuvre

Right	20 (40%)
Left	10 (20%)
Bilateral	20 (40%)

It was found that Epley's manoeuvre was effective in alleviating the symptoms in all the patients irrespective of when done alone or in combination with betahistine. Patients were evaluated after 1 week for the persistence of symptoms, received the same treatment as earlier, and were re-evaluated in 2nd week. Symptom improvement was analyzed based on pre-treatment and post-treatment DHI.

The mean DHI score was 42.8 ± 5.8 before the treatment and 23.68 ± 4.7 in group A and 19.44 ± 2.4 in group B at the end of 1 week (*p value - 0.03)*; 11.12 ± 2.9 in group A and 6.72 ± 1.9 in group B at the end of 2 weeks (*p value - 0.001)*, which was statistically significant (Table 4).

Table 4: Comparison of post-treatment DHI

	DHI at week 1	DHI at week 2
Group A	23.68±4.7	11.12±2.9
Group B	19.44±2.4	6.72±1.9

Our study showed a statistically significant improvement in DHI in patients with BPPV when treated with Epley's manoeuvre with betahistine than in those who were treated with Epley's manoeuvre alone.

DISCUSSION

Canalolith repositioning manoeuvres like Epley's manoeuvre have proven to be effective in alleviating symptoms of BPPV. The present study was to find the efficacy of Epley's manoeuvre alone versus Epley's manoeuvre with labyrinthine sedatives in alleviating the symptoms of BPPV. In our study, Epley's manoeuvre alone or in combination with betahistine was effective in abolishing the symptoms of BPPV.

Appropriate and carefully applied repositioning manoeuvres and/or suitable vestibular rehabilitation exercises are the most effective treatments for BPPV can be treated with a single Epley's manoeuvre in most cases[4,5]. It is seen that the symptoms of BPPV may persist for up to more than 3 months in less than 20% of patients despite repositioning manoeuvres[6]. To alleviate the symptoms, many studies were done with betahistine in an effort to decrease the severity of vertigo, for its effect on increasing the microcirculation of the labyrinth and suppress the neuronal activity in vestibular receptor cells[7].

Mira et al conducted a placebo-controlled prospective study where they found that 32mg betahistine was effective in improving QOL in patients with recurrent vestibular vertigo[7].

Study conducted by Cavaliere et al showed that addition of 32mg of betahistine had a significantly faster recovery in BPPV compared to Semont manoeuvre or Brandt-Daroff exercises alone[8].

Sundarajan et al conducted a study comparing Epley's manoeuvre alone with Epley's manoeuvre with labyrinthine sedative and concluded that patients receiving Epley's manoeuvre alone had a better recovery when compared to those receiving both Epley's manoeuvre and labyrinthine sedative[1].

Guneri EA et al conducted at double-blinded randomized control trial where they found that Epley's manoeuvre alone or when combined with betahistine or placebo was effective in providing symptomatic improvement. However, symptomatic improvement was significantly better in those receiving Epley's manoeuvre along with betahistine[3].

In our study, it was found that there was significant improvement in symptoms in those patients who were treated with Epley's manoeuvre along with betahistine than in those who were treated with Epley's manoeuvre alone.

CONCLUSION

In conclusion, the present study shows that Epley's manoeuvre alone or when combined with betahistine is effective in alleviating the symptoms of BPPV. However, Epley's manoeuvre when combined with betahistine gives a better symptomatic improvement compared to Epley's manoeuvre alone.

Compliance with Ethical standards

Conflict of interest – None

Ethical approval – This article does not contain any studies on animals

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