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Corresponding Author
B.K. Noorjihan,
Department of Otorhinolaryngology, Sree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu, India
noorjihan11gvmc@gmail.com

Author Designation
[1]Assistant Professor
[2,3,4]Final year postgraduate
[5]Second year postgraduate
[6]First year postgraduate

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Comparative Study of BPPV with Epley's and Medical Therapy Versus Medical Therapy Alone: A Prospective Observational Study

[1]Lyra Joy, [2]B.K. Noorjihan, [3]Dayana Babu, [4]V. Deepak Rajadurai, [5]S. Keerthana and [6]S. Asmitha
[1-6]Department of Otorhinolaryngology, Sree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu, India

ABSTRACT
Dizziness and disequilibrium are common complaints in both general adult and the geriatric population. Dizziness is often used to describe the sensations of vertigo, light headedness, imbalance, presyncope, disorientation and/or gait instability. The cause may be otologic, neurologic, cardiovascular, psychiatric, orthopaedic or ophthalmologic. Benign paroxysmal positional vertigo (BPPV) is, by far, the most common cause of episodic vertigo. The purpose of the study was to compare the efficacy of Epley's maneuver with medical therapy versus medical therapy alone in patients of BPPV. This study was done in Sree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu, in patients above age of 20 and with BPPV. A total of 100 patients were divided into two groups: 50 to the group A which received Epley's maneuver with medical therapy and 50 to the group B which received only medical therapy. In our study, Epley's maneuver with medical therapy was found to be more effective than medicine given alone. This study shows that the Epley's maneuver with medical therapy provides effective and longterm control of symptoms in patients with BPPV. It benefits over medical therapy alone in terms of avoiding the delay in vestibular compensation and recurrence.

INTRODUCTION

In 1921, Barany described a syndrome characterized by episodic vertigo, induced when the subject assumed a critical head position relative to gravity, of acute onset and limited duration[1]. BPPV is believed to be a result of a plug of calcium carbonate and protein crystals (otoconia) that have become dislodged from the utricle, settling most frequently in the posterior semicircular canal[2]. Dix and Hallpike, further defined the syndrome and coined the term 'benign paroxysmal positional vertigo[2]. They also identified correctly the undermost ear as the ear causing the rotatory nystagmus, which is characteristic of BPPV. Approximately 25% of cases of dizziness are due to benign paroxysmal positional vertigo, a condition that can be severely incapacitating. The causative mechanism is usually abnormal dense particles (canaliths) in semicircular canal. These particles can be repositioned and the symptoms completely resolved in a high percentage (nearly 90%) of cases by means of the Epley's canalith-repositioning manoeuvre (CRP).

Objective: The purpose of the study was to compare the efficacy of Epley's maneuver with medical therapy versus medical therapy alone in patients of BPPV.

MATERIALS AND METHODS

This prospective observational study was conducted among the patients attending ENT department of Sree Mookambika Institute of Medical Sciences, Kulasekharam for a period of 6 months from July 2023 to January 2024. They were followed at the end of 1st week, 1st month and 2nd month. In this study 100 Patients presenting to OPD who have been diagnosed with BPPV via a Positive Dix Hallpike were randomized into two age and sex matched groups of 50 each: 50 to the group A and 50 to the group B. Informed written consent was taken. Each patient in group A was treated with the Epley's maneuver-canalith repositioning maneuver and Betahistine (16mg BD) and cinnarizine (25 mg BD). Group B received the more common conventional medication therapy (Betahistine 16mg BD cinnarizine 25 mg BD) till patient was symptom free. All the patients were followed for 2 months.

Inclusion Criteria: Patients with age >20 years and with history suggestive of BPPV and positive Dix-Hallpike maneuver. A Dix-Hallpike maneuver is considered positive when the patient experiences nystagmus but resolves or fatigues in <60 seconds.

Exclusion Criteria: Subjects with severe cervical spine disease, known cerebral vascular disease like carotid stenosis, history of Meniere's disease, cardiac complaints and vertigo due to other CNS cases.

- Lie down on your back, turn head to left for 1 minute
- Then turn head to right for 1 minute
- Turn whole body to right, head facing towards floor for 1 minute
- Sit up slowly, head tilted forward for 1 minute

If Above does not work to Relieve Nausea and Dizziness, try:

- Lie down on your back, turn head to right for 1 minute
- Then turn head to left for 1 minute
- Turn whole body to left, head facing towards floor for 1 minute
- Sit up slowly, head tilted forward for 1 minute

RESULTS AND DISCUSSIONS

Among all 100 patients, 63 were female and 37 were male.

(Table 2) shows age profile of the patients. Patients from age group 61-70 were involved maximum in our study.

In our study, right side was found to be more involved than left. Out of 100 patients, Right side was involved in 54 Patients and left side was involved in 46 patients. Out of 100 patients, 10 had tinnitus, 56 had nausea and vomiting and 6 had tinnitus as well as nausea and vomiting.

Among 50 patients from group A, 30(60%) recovered from vertigo immediately after the Epley's maneuver and 16 patients recovered from vertigo at first week of follow-up. Out of remaining 4 patients, 2 patient recovered from vertigo in the second follow-up visit at the end of 1st month and 2 patient at 2nd month follow up. Among 50 patients from group B, 30(60%) recovered from vertigo at the end of 1st week and total 10(20%) participants recovered from the vertigo at the end of 1st month. Remaining 10 patients recovered at the end of 2nd month. At the end of 2nd month, all 50 patients had recovered from BPPV. The

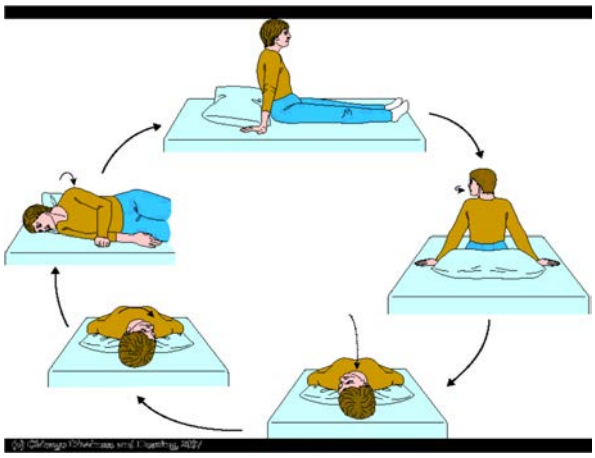

Fig. 1: Epley's Maneuver for Benign Positional Vertigo

Table 1: Gender profile

Gender	Total (%)
Male	37(37%)
Female	63(63%)

Table 2: Age profile

Age group	Total (%)
21-30	3(3%)
31-40	12(12%)
41-50	13(13%)
51-60	29(29%)
61-70	35(35%)
>70	8(8%)

Table 3: Side involved

	Group A	Group B	Total
Left	25	21	46
Right	30	24	54

Table 4: Associated symptoms

Associated symptom	Total (%)
Tinnitus	10(10%)
Nausea and vomiting	56(56%)
Tinnitus, nausea and vomiting	6(6%)

Out of 100 patients, 40(40%) patients had hypertension and 20(20%) had diabetes.

Table 5: Comorbidities

Comorbidities	Total
Hypertension	40(40%)
Diabetes	20(20%)

Table 6: Comparision of efficacy of Epley's maneuver along with medical therapy (group A) and medical therapy alone (group B)

Treatment	Followup	Group A	Group B	Total
1 st		30	0	30
2 nd	1 week	16	30	46
3 rd	1month	2	10	12
4 th	2nd month	2	10	12
Total		50	50	100

Table 7 : Symptoms recurrence after 6 months

Symptoms reccurence	No. of patients		
	Group A	Group B	Total
After 6 months	5	20	25

Table 8: Duration of usage of betahistine (16mg BD) and cinnarizine (25 mg BD)

Mean duration of usage	No. of patients	
(in weeks)	Group A	Group B
1 week	46	0
4 week	4	30
8 week	0	20

patients were followed for recurrence at the end of 6th month. In our study, total 25 patients had recurrence after 6 months, out of them, only 5(10%) belonged to the group in which epley's maneuver was used along with medical therapy whereas 20(40%) belonged to group in which medical therapy was used alone.

In our study, betahistine (16mg BD) and cinnarizine 25 mg BD was given in both the groups till symptoms of vertigo subsided. So, it was observed that 92% patients from group A had to use the drug for <1 week whereas, 60% patients from group B had used the drug up to 4 weeks and 40% had used it for 8 weeks.

BPPV affects all age groups, though it appears to be more common in the elderly. This condition seems to have a predilection for the older population. In our study BPPV was found more common in 51-70 age group. The dislodgement of otoconia is more common in the elderly, because during lifetime the number and volume of otoliths are progressively reduced and the interconnecting fibers between the otoliths may weaken from age-related reduction of calcium carbonate crystals in the process of demineralization. The result is the separation of the otoconia from the otolithic membrane and free movement within the endolymph[3]. In accordance with our study, Faralli[4] concluded that as age advances, there is a higher rate of paroxysmal positional vertigo as well as worse prognosis, but this is strictly due to the fact that advanced age is also associated with a higher incidence of vascular risk factors. The sex distribution seems to indicate a predilection for women. In our study, among all participants, 63 (63%) were female; so female to male ratio was found to be 1.7:1. Osteoporosis which is more frequent in middle aged women may also play a role in development of BPPV[5]. Predilection to side was found as right side was affected among 54(54%) participants. Interestingly, sleep seems to be involved in the pathophysiology of BPPV and many patients experience their first attack when moving in bed after awakening[6]. Recently, it has been shown that the side affected by BPPV correlates with the preferred position in bed, the side of the involved semicircular canal was the side patients used to lie on. Most patients slept in the right lateral position and had BPPV on the right[7]. Freely moving otoconia in the labyrinth have a higher density than endolymph and follow gravity. In the right lateral position the openings of both the right posterior and the horizontal canals are in the lowermost position, which facilitates entry of heavy particles from the utricle. Thus one might speculate that BPPV predominantly involves the right ear because many persons prefer to sleep on the right side, possibly due to an uncomfortable awareness of the heart beat when lying on the left side[6]. Out of 100 patients, 10 had tinnitus, 56 had nausea and vomiting and 6 had tinnitus as well as nausea and vomiting. Out of 100 patients, 40(40%) patients had hypertension and 20(20%) had diabetes. Among 50 patients from group A, 30(60%) recovered from vertigo immediately after the Epley's maneuver and 16 patients recovered from vertigo at first week of follow-up. Out of remaining 4 patients, 2 patient recovered from vertigo in the second follow-up visit at the end of 1st month and 2 patient at 2nd month follow up. Among 50 patients from group B, 30(60%) recovered from vertigo at the end of 1st week and total 10(20%) participants recovered from the vertigo at the end of 1st month. Remaining 10 patients recovered at the end of 2nd month. At the end of 2nd month, all 50 patients had recovered from BPPV. The patients were followed for recurrence at the end of 6th month. In our study, total 25 patients had recurrence after 6 months, out of

them, only 5(10%) belonged to the group in which epley's maneuver was used along with medical therapy whereas 20(40%) belonged to group in which medical therapy was used alone. In our study, betahistine (16mg BD) and cinnarizine 25 mg BD was given in both the groups till symptoms of vertigo subsided. So, it was observed that 92% patients from group A had to use the drug for less than 1 week whereas, 60% patients from group B had used the drug upto 4 weeks and 40% had used it for 8 weeks.

CONCLUSION

Benign paroxysmal positional vertigo (BPPV) is prevalent among elderly patients, with a higher incidence in women and a tendency to affect the right side more often. Our study found that combining Epley's maneuver with medical therapy is more effective than medication alone for both treating and preventing BPPV-related vertigo. This combined approach not only enhances the patient's quality of life but also potentially reduces long-term medical costs. Patients who received Epley's maneuver along with medication experienced a shorter recovery time compared to those who only received medication. Epley's maneuver is a safe and effective bedside procedure for BPPV and when used alongside medication, it reduces the need for anti-vertigo drugs and minimizes delays in vestibular rehabilitation. In summary, Epley's maneuver proves to be superior to medication alone in alleviating BPPV symptoms and signs, with no significant side effects.

REFERENCES

1. Barany, E., 1920. 1. "Diagnose yon krankheitserscheinungen im bereiche des otolithenapparates". Acta Oto Lary., 2: 434-437.
2. Dix, M. and C.S. Hallpike, 1952. 1. Pathology, symptomatology and diagnosis of certain disorders of the vestibular system. Proc Roy Soc Med., 45: 341-354.
3. Balatsouras, D., G. Koukoutsis, A. Fassolis, A. Moukos and A. Aspris, 2018. Benign paroxysmal positional vertigo in the elderly: Current insights. Clin. Inter Aging, 13: 2251-2266.
4. Faralli, M., G. Ricci, E. Molini, T. Bressi and C. Simoncelli,et al., 2006. 1. Paroxysmal positional vertigo: the role of age as a prognostic factor. Acta Otorh Ital., 26: 25-31.
5. Byun, H., J.H. Chung, S.H. Lee, C.W. Park, E.M. Kim and I. Kim, 2019. Increased risk of benign paroxysmal positional vertigo in osteoporosis: A nationwide population-based cohort study. Sci. Rep., Vol. 9, No. 1 .10.1038/s41598-019-39830-x.
6. Korres, S., D.G. Balatsouras, A. Kaberos, C. Economou, D. Kandiloros and E. Ferekidis, 2002. Occurrence of semicircular canal involvement in benign paroxysmal positional vertigo. Otology amp Neu., 23: 926-932.
7. Lopez, E.J.A., M.J. Gámiz, M.G. Fiñana, A.F. Perez and I.S. Canet, 2002. Position in bed is associated with left or right location in benign paroxysmal positional vertigo of the posterior semicircular canal. Am. J. Otolar., 23: 263-266.
8. Desmond, A.L., 2004. 1. Function and dysfunction of vestibular system. 2nd Edn., Thieme, U.S.A., ISBN-14: 978-1604063615, Pages: 35.