

## Efficacy of Applying Postural Restrictions after Epley Maneuver in Patients with Benign Paroxysmal Positional Vertigo

Gholamali Dashti-Khavidaki,<sup>1</sup> Aghil Absalan,<sup>\*2</sup> Ebrahim Pirasteh,<sup>2</sup> Sara Zekri<sup>3</sup>

1. Department of ENT, Zahedan University of Medical Sciences, Zahedan, Iran
2. Department of Audiology, Faculty of Paramedicine, Zahedan University of Medical Sciences, Zahedan, Iran
3. General Physician, Zahedan, Iran

| Article information   | Abstract  |
|---|---|
| <p>Article history:<br/>Received: 31 Jan 2012<br/>Accepted: 14 Apr 2012<br/>Available online: 5 May 2013<br/>ZJRMS 2014; 16(1): 89-90</p> <p>Keywords:<br/>Positional vertigo<br/>Paroxysmal vertigo<br/>Rehabilitation</p> | <p><b>Background:</b> The purpose of this study was to determine the efficacy of applying postural restrictions after Epley maneuver on therapeutic success in patients with BPPV (Benign Paroxysmal Positional Vertigo).</p> <p><b>Materials and Methods:</b> This randomized controlled clinical trial study was conducted in among 118 patients with BPPV at Khatam-al-Anbia hospital in Zahedan. First group treated with postural restrictions and the second with no restrictions. After one week the presence of BPPV examined and data were analyzed.</p> <p><b>Results:</b> In first group 84.7% did not show symptoms of vertigo, as well as 45 patients in second group. Results did not show any significant difference between two groups.</p> <p><b>Conclusion:</b> This study showed that instructions had no significant effect on the patients' treatment outcomes.</p> <p>Copyright © 2014 Zahedan University of Medical Sciences. All rights reserved.</p> |

### Introduction

Benign paroxysmal positional vertigo (BPPV) is responsible for approximately 17% of the clinical diagnoses of dizziness [1]. It is characterized by brief attacks of vertigo, nausea and/or positional nystagmus during head movements [2]. BPPV may be resulted from problem in any semicircular canal (SCC). In this case, vertigo mostly is manifested when lying down in bed and especially, with head rotation to affected side [3]. The most common maneuver for rehabilitation is Epley maneuver. In study by Dashti et al. this procedure showed 92.5% therapeutic success [4]. First procedure proposed postural restrictions after Epley maneuver to prevent symptoms' relapses [5]. In this case the patient is instructed to avoid head and trunk movement, using a neck collar and sleeping in semi-seated position, with the head inclined at 45 degree from the horizontal plan for two days. Then, in the 5 subsequent days, the patient is instructed to avoid sleeping over the affected ear [5-7]. There is some controversy about the rate of treatment effects by postural restriction in different studies [6-8].

This study was done to investigate the efficacy of applying postural restrictions after Epley maneuver on therapeutic success in patients with BPPV.

### Materials and Methods

This randomized controlled clinical trial study was performed in 2009 at otolaryngology clinic of Khatam-al-Anbia hospital in Zahedan, Iran. First, sample chosen from patients that had history of vertigo after positional movement (available sampling method). After informed with treatment process, we proposed them to participate

in study and the informed consent was taken from all subjects. Otologic, neurologic and audiometric examinations were performed on patients who initially reported vertigo symptoms. Then, Dix-Hallpike test was performed for diagnosis of BPPV on these patients except for whom with history of drug treatment. Samples based on random numbers table (which is including defined computer programs) assigned in two groups: first group who received postural restrictions after Epley maneuver and the second group who had no restrictions after the maneuver. Postural restrictions consist of using a neck collar and sleeping in semi-seated position, with the head inclined at 45 degree from the horizontal plan for two days. Then, in the 5 subsequent days, the patient is instructed to avoid sleeping over the affected ear.

One week after treatment maneuver, the patients were followed up and evaluated again using the Dix-Hallpike test by another examiner. Patients who did not comeback for evaluation excluded from study as well as who did not perform postural restrictions according questionnaires. In this study two groups matched to prevent the effects of other confounding factors and sampling continued until sample size (59 patients in each group) completed. Statistical analysis was performed by  $\chi^2$  test to compare between group differences.

### Results

The number of men and women in the first group were 36 and 23 and in the second group were 30 and 29 people, respectively. At the first visit, therapeutic exercise for both groups was applied and first group was given one

week training limitation of motion. A week later, both groups were re-examined by Dix-Hallpike. The findings showed negative result in 84.7% of patients of the first group and 76.3% of a second group or otherwise improved.  $\chi^2$  test showed no statistical difference between the two groups.

## Discussion

Findings of this study showed postural restrictions along with Epley maneuver for BPPV patients have no effect upon treatment outputs. A study by Cakir et al. [8] showed effectiveness of postural restrictions in the treatment that their results differ from our finding. This difference could be due to differences in the number of maneuver. In the present study the therapeutic success considered regardless of the number of maneuvers. Our study findings were similar to the studies conducted by Gananca [6] and Simoceli [7]. The researchers reported that postural restrictions followed by maneuver, regardless of considering the number of maneuvers, are not effective in returning of otoconia to semicircular canals. Animal studies showed otoconia fix on their place after maximum 5 minutes and normal movement of body and head shall not influence on releasing these particles

again. Therefore, as applying restriction, might accompany with limitations in patient's activity of daily living and burdensome unnecessary tasks on patients and his/her family, so this issue should be noticed by physicians in planning treatment for patients with BPPV.

## Acknowledgements

Thanks for all the ones that were involved in this project. This article prepared based on a thesis number 1,164 by Sara Zekri, Zahedan University of Medical Sciences.

## Authors' Contributions

All authors had equal role in design, work, statistical analysis and manuscript writing.

## Conflict of Interest

The authors declare no conflict of interest.

## Funding/Support

Zahedan University of Medical Sciences.

\*Corresponding author at:

Department of Audiology, Faculty of Paramedicine, Zahedan University of Medical Sciences, Zahedan, Iran  
E-mail: [aghilabsalan@yahoo.com](mailto:aghilabsalan@yahoo.com)

## References

1. Katsarkas A. Benign paroxysmal positional vertigo (BPPV): Idiopathic versus post traumatic. *Acta Otolaryngol* 1999; 119(7): 745-9.
2. Korn GP, Dorigueto RS, Gananca MM and Caovilla HH. Epleys maneuver in the same session in benign positional paroxysmal vertigo. *Braz J Otorhinolaryngol* 2007; 73(4): 533-9.
3. Cummings CW. Cummings otolaryngology head and neck surgery. 4<sup>th</sup> ed. Pennsylvania: Mosbey; 2005.
4. Dashti Gh, Absalan A, Boroumand P. Therapeutic effect of Epley maneuvers on patients with posterior semicircular canal benign paroxysmal positional vertigo. *Zah J Res Med Sci* 2010; 12(2): 36-39.
5. Herdman SJ. Vestibular rehabilitation. 3<sup>rd</sup> ed. Philadelphia: F.A. Davis Company; 2007.
6. Ganancal F, Simasll R, Ganancal M, et al. Is it important to restrict head movement after Epley maneuver? *Braz J Otorhinolaryngol* 2005; 71(6): 764-8.
7. Simoceli L, Saraiva R, Bittar M, et al. Posture restrictions do not interfere in the results of canalith repositioning maneuver. *Braz J Otorhinolaryngol* 2005; 71(1): 55-9.
8. Cakir BO, Ercan I, Cakir ZA and Turgut S. Efficacy of postural restriction in treating benign paroxysmal positional vertigo. *Arch Otolaryngol Head Neck Surg* 2006; 132(5): 501-50.

*Please cite this article as:* Dashti-Khavidaki G, Absalan A, Pirasteh E, Zekri S. Efficacy of applying postural restrictions after Epley maneuver in patients with benign paroxysmal positional vertigo. *Zahedan J Res Med Sci (ZJRMS)* 2014; 16(1): 89-90.