BENIGN PAROXYSMAL POSITIONAL VERTIGO;
EFFICACY OF VESTIBULAR SEDATIVE VERSUS EPLEY MANOEUVRE

ORIGINAL
PROF-1881

DR. SOHAIL BABAR NIAZI, MBBS, FCPS
ENT Consultant
PAF Hospital Masroor Base, Karachi

DR. MUHAMMAD ALI BHATTI, MBBS, FCPS
ENT Consultant
CMH Okara

DR. MUHAMMAD TAHIR MBBS, FCPS
ENT Consultant
CMH, Multan

ABSTRACT… Objective: To compare the efficacy of Vestibular sedative versus Epley manoeuvre in the management of benign paroxysmal positional vertigo. **Study design:** Interventional Quasi experimental study. **Place and duration of study:** This study was conducted in ENT OPD Combined Military Hospital Rawalpindi from 1st January 2008 till 30th June 2008. **Results:** In this study out of 30 cases managed by vestibular sedative, 10 cases showed complete relief of symptoms after 01 month. Out of 30 cases managed by Epley manoeuvre, 28 cases showed complete recovery after 01 month. The results were compared by Chi square test, as the data was mainly qualitative in nature. The results of both the groups were compared on day 3, day 7 and day 30, which revealed that Epley manoeuvre, is more effective than vestibular sedative in treatment of BPPV. **Conclusions:** Epley manoeuvre is more effective than vestibular sedative for treating the patients of benign paroxysmal positional vertigo.

Key words: Benign Paroxysmal Positional Vertigo, Dix-Hallpike Test, Epley Manoeuvre, Vestibular sedative.

INTRODUCTION

Vertigo and dizziness are common symptoms in the general population[1]. Benign paroxysmal positional vertigo (BPPV) is characterized by brief but violent attacks of paroxysmal vertigo provoked by certain positions of the head. BPPV is the most common cause of vertigo, resulting from migration of otoconia into the semicircular canals[2]. The age of onset is most commonly between the 5th and 7th decade of life. About half of the patients with severe traumatic brain injury who complain about positional vertigo suffer from BPPV[3].

It is the change in head position which provokes an episode of BPPV. The episode occurs when the patient rolls over onto the affected side or tilts the head back while looking in upward direction. It may be accompanied by episodes of severe nausea and vomiting. The Dix-Hallpike test is positive when an anticlockwise rotatory nystagmus occurs towards the under most ear.

Treatment of Benign Paroxysmal positional vertigo is based on Epley manoeuvre and vestibular sedatives. Most cases of Benign Paroxysmal positional vertigo are self-limiting[4]. Studies have shown that canal repositioning procedures remain an efficient and long lasting noninvasive treatment of Benign Paroxysmal Positional Vertigo[5]. Vestibular sedatives are commonly used in management of vertigo in most ENT clinics. However still some controversy exists as to whether these methods actually have an effect other than central habituation. Moreover resistant cases and variants of the disease remain a significant problem[6].

MATERIALS AND METHODS

Study Design

Interventional Quasi experimental study

Sample Size

Sixty patients

Place and duration of study

This study was conducted in ENT OPD Combined Military Hospital Rawalpindi from 1st January 2008 till 30th June 2008.

Inclusion Criteria

All cases of benign paroxysmal positional vertigo diagnosed by Dix Hallpike test.

Age: 20-75 years
Gender: Both sexes

Exclusion Criteria

- Recent head or neck injury.

- Diagnosed case of cervical spondylosis.

Data Collection Procedure

The study was conducted after approval was taken from the hospital ethical committee for the conduction the study. On first sitting history of the patients was taken about duration of vertigo, its severity, associated hearing loss and tinnitus. All patients were asked in detail about the occurrence of vertigo on change of position .Detailed examination of ear was done. Dix Hallpike test was done to confirm the diagnosis. After taking informed consent patients were randomly allocated into two groups by using random number tables. Group A were treated with vestibular sedative. The vestibular sedative given was tab prochlorperazine (stemetil) in a dose of 10 mg thrice daily after meals. The treatment was given for a period of one week.

Group B was treated with Epley manoeuvre which started with the patient in head upright position. Then the Dix Hallpike provoking position was assumed. The eyes were observed for nystagmus until it stopped. Then after thirty seconds the head was turned to opposite side while keeping the head extended for three seconds and then patient rolled into lateral position. In this position the head position was in 180 degrees opposite to initial Dix Hallpike position. After the disappearance of nystagmus for 30 seconds maintaining the head position the patient was rapidly brought to sitting position with head rotated forwards. The patient was kept in this position for one minute to complete the Epley manoeuvre. A maximum of three sessions of Epleys manoeuvre were done on a single day.

The patients were examined on 3rd day, 7th day, 30th day and efficacy of treatment was recorded. The study was funded by CMH Rawalpindi and CMH Rawalpindi was responsible for payment of treatment for any side effects during the study.

Statistical Analysis

All the collected data was transferred on SPSS Version 15 for analysis. The variables to be analysed included age, sex etc. Mean and standard deviation were calculated for numerical data for example age. Frequency and percentage were used for qualitative data like improvement in symptoms at day 3, 7 and at 30 day period. The comparison of both groups was made regarding freedom from vertigo on Dix Hallpike test. Both groups were compared by Chi square test, as the data was mainly qualitative in nature. P value of equal to or less than 0.05 was taken

RESULTS

Group A was treated with vestibular sedative. Out of the 30 patients 3 patients became free from vertigo on the Dix Hallpike test on day 3 while out of the remaining 27 patients 3 patients further became free from vertigo on the Dix Hallpike test on day 7. After 30 days a total of 10 patients out of 30 were free from vertigo on the Dix Hallpike test.

Group B was treated with Epley manoeuvre and out of the 30 patients, 19 patients became free from vertigo on the Dix Hallpike test on day 3 while out of the remaining 11 patients, 3 patients further became free from vertigo on the Dix Hallpike test on day 7. After 30 days a total of 28 patients out of 30 were free from vertigo on the Dix Hallpike test. Both groups were compared by Chi square test. P value was calculated and it was found to be less than 0.05 on day 3 (0.04), day 7 (0.03) and day 30 (0.01). Hence the results revealed that Epley manoeuvre is more effective than vestibular sedative in treatment of BPPV.

The age of patients in this study was from 20 years to 75 years with a mean age incidence of 43.12 years with a standard deviation of 9.04. The mean age of patients in group A was 41.1 with standard deviation of 8.6 while the mean age of patients in group B was 45.14 with standard deviation of 9.46. Out of these 35 (58.3%) were females and 25 (41.7%) were males. In Epley group 18 were females while 12 were males. In group A 17 were females while 13 were males. In a total of 30 patients in group A 3 patients (10%) had hearing loss and 1 patient (3.3%) had tinnitus. 5 patients (16.7%) had feeling of nausea when they were undergoing treatment manoeuvres for BPPV. In a total of 30 patients in group B 4 patients (13.3%) had hearing loss and 1 patient (3.3%) had tinnitus. 4 patients (13.3%) had feeling of nausea when they were undergoing treatment manoeuvres for BPPV.

Table-I. Chi square test for freedom from vertigo on day 3 (n=60)

Patients	Freedom from vertigo on dix hallpike test		Total
	Yes	No	
Group A treated with vestibular sedative	3 (10%)	27 (90%)	30
Group B treated with Epley manoeuvre	19 (63.3%)	11 (36.6%)	30

Since p value is less than 0.05 (P=0.004) so Epley manoeuvre is more effective than vestibular sedative.

Table-II. Chi square test for freedom from vertigo on day 7 (n=60)

Patients	Freedom from vertigo on dix hallpike test		Total
	Yes	No	
Group A treated with vestibular sedative	6 (20%)	24 (80%)	30
Group B treated with Epley manoeuvre	22 (73.3%)	8 (26.6%)	30

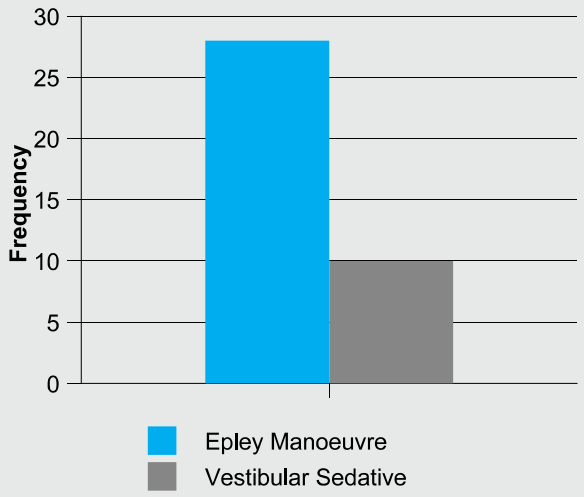
Since p value is less than 0.05 (P=0.003) so Epley manoeuvre is more effective than vestibular sedative.

Table-III. Chi square test for freedom from vertigo on day 30 (n=60)

Patients	Freedom from vertigo on dix hallpike test		Total
	Yes	No	
Group A treated with vestibular sedative	10 (33.3%)	20 (66.6%)	30
Group B treated with Epley manoeuvre	28 (93.3%)	2 (6.6%)	30

Since p value is less than 0.05 (P=0.001) so Epley manoeuvre is more effective than vestibular sedative.

Fig-1. Outcome of vestibular sedative and Epley manoeuvre on one month (n=60)



DISCUSSION

Vertigo and dizziness are common symptoms in the general population. A minimum of 20 % of all patients complaining of vertigo have BPPV. Due to increased incidence and prevalence of BPPV a large number of studies have been conducted internationally about the effectiveness of various treating manoeuvres for BPPV. Prokopakis et al[5] assess the long-term efficacy of Epley manoeuvre in the treatment of patients with BPPV. 544 (92%) of 592 patients treated reported no symptoms of vertigo after one month revealing the efficacy of Epley manoeuvre. In our study we were also able to achieve 93.3% cure of BPPV from Epley manoeuvre.

Richard et al[7] assessed the efficacy of the Epley manoeuvre in a study of 81 patients with posterior semicircular canal BPPV. A group of 61 patients underwent the manoeuvre, while a control group of 20 patients received no therapy. All patients were evaluated at 1 and 6 months. The percentage of patients who experienced subjective improvement was significantly higher in the treatment group at both 1 month (89% vs. 10%) and 6 months (92% vs. 50%). Three patients in the treatment group who did not improve after treatment underwent a second manoeuvre, and all achieved a positive result. The results of this study support our study regarding the efficacy of Epley manoeuvre.

Pérez Vázquez P et al[8] conducted a study that included 37 consecutive cases of BPPV treated with the Epley manoeuvre. 97% of patients improved and the manoeuvre was well tolerated. Ruckenstein[9]showed 74

percent of cure rate in patients that were treated with one or two Epley manoeuvres.

Lynn et al[10] reported a success rate of 89 percent after a single treatment session with Epley manoeuvre, as compared with a success rate of 23 percent in an untreated control group. Ahmed et al reported 79.7% recovery in BPPV patients after single treatment with Epley manoeuvre[11].

Pospeich[12] presented the results of rehabilitation with the use of Epley manoeuvre in 46 patients. The regression of symptoms in 22 cases treated with the use of Epley manoeuvre in 73%. Although this study showed significant success rate of the manoeuvre but in our study we had even better results . Niamatullah and Yousaf N[13] documented 57% cure rates with Epley manoeuvre. Moreover in our study we observed predominance of female subjects (58.3%), which is also according to the literature reports[14]. However inspite of the clear female predominance, the studies do not reveal any statistically significant differences between genders.

The mean age of patients in our study was 43.12 and there were associated symptoms of tinnitus and hearing loss in 3.3% and 11.6% of the patients respectively. These associated features of tinnitus and hearing loss in patients were most probably representing the co-morbidities of older age.

In many international studies about vertigo latest investigations like electronystagmography, dynamic posturography, vestibular illusion demonstration are done but unfortunately these studies could not be included in the study because of unavailability.

CONCLUSIONS

BPPV is the most common cause of peripheral vertigo and it can be easily diagnosed in outpatient department by typical history of occurrence of vertigo on positional change and on examination by appearance of nystagmus during dix hallpike test. Epley is more effective than vestibular sedative for treatment of patients with BPPV.

REFERENCES

1. Feazadeh A, Carmeli E. **Rehabilitation exercise for treatment of vestibular disorder: A case study.** Scientific World Journal 2006; 6: 291-4.
2. Robert RA, Gans RE, DeBoodt JL, Lister JJ. **Treatment of benign paroxysmal positional vertigo: necessity of postmaneuver patient restrictions.** J Am Acad Audiol 2005; 16:357-66.
3. Motin M, Keren O, Groswasser Z, Gordon CR. **Benign paroxysmal positional vertigo as the cause of dizziness in patients after severe traumatic brain injury: diagnosis and treatment.** Brain Inj 2005; 19:693-7.
4. Mujeeb M, Khan N. **Epley's manoeuvre: treatment of choice for benign paroxysmal positional vertigo.** J Laryngol Otol 2000; 114:844-7.
5. Prokopakis EP, Chimona T, Tsagournisakis M, Christodoulou P, Hirsch BE, Lachanas VA et al. **Benign paroxysmal positional vertigo: 10-year experience in treating 592 patients with canalith repositioning procedure.** Laryngoscope 2005; 115:1667-71.
6. Nakayama M, Epley JM. **BPPV and variants: improved treatment results with automated, nystagmus-based repositioning.** Otolaryngol Head Neck Surg 2005; 133:107-7.
7. Richard W, Bruintjes TD, Oostenbrink P, van Leeuwen RB. **Efficacy of the Epley maneuver for posterior canal BPPV: a long-term, controlled study of 81 patients.** Ear 2005; 84:22-5.
8. Pérez Vázquez P, Manrique Estrada C, Munoz Pinto C, Baraga o Río L, Bernardo Corte MJ, Suárez Nieto C. **Treating benign paroxysmal positional vertigo with the canalith repositioning maneuver of Epley. Our experience.** Acta Otorrinolaringol Esp. 2001; 52:193-8.
9. Ruckenstein MJ. **Therapeutic efficacy of the Epley canalith repositioning maneuver Laryngoscope.** 2001; 111:940-5.
10. Lynn S, Pool A, Rose D, Brey R, Suman V. **Randomized trial of the canalith repositioning procedure.** Otolaryngol Head Neck Surg 1995; 113:712-20.
11. Ahmed Z, Akhtar MR, Ahmed T, Raza N, Ayub W. **Modified Epley's manoeuvre for treatment of benign positional vertigo: An experience with over 100 cases.** Pak Armed Forces Med J 2003; 53:160-3.

12. Pospeich L. **Rehabilitation of benign paroxysmal positional vertigo in the experience of the Wrocław Clinics.** Otolaryngol Pol. 2000; 54:557-60.

13. Naimatullah, Yousaf N. **Single treatment approaches to benign paroxysmal positional vertigo.** Pakistan Journal of Otolaryngology 2004; 20:3-5.

14. Froehling DA, Bowen JM, Mohr DN, Brey RH, Beatty CW, Wollan PC, et al. **The canalith repositioning procedure for the treatment of benign paroxysmal positional vertigo: a randomized controlled trial.** Mayo Clin Proc 2000; 75: 695-700.

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Correspondence Address:
Dr. Muhammad Tahir
ENT Consultant
CMH Multan
dr_gopang@yahoo.com

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