

ASSESSMENT OF EFFICACY OF VESTIBULAR REHABILITATION EXERCISES ON QUALITY OF LIFE IN PATIENTS WITH VESTIBULAR DISORDERS

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Abstract

Background: The aim is to assessed efficacy of vestibular rehabilitation exercises on quality of life in patients with vestibular disorders. **Materials and Methods:** Eighty patients with vestibular disorders of both genders were included. 4 groups were made and each group comprised of 20 patients. Group I performed adaptation exercises, group II performed habituation exercises, group III substitution exercises and group IV combined exercises. Vestibular activities and participation (VAP) was administered before and after exercises. **Result:** Group I comprised of 12 males and 8 females, group II had 11 males and 9 females, group III had 10 males and 10 females and group IV had 8 males and 12 females. The mean VAS score before exercise in group I was 2.9 and after exercise was 1.4. The mean VAS score before exercise in group II was 3.1 and after exercise was 1.2. The mean VAS score before exercise in group III was 3.4 and after exercise was 1.5. The mean VAS score before exercise in group IV was 3.1 and after exercise was 1.02. The difference was significant ($P < 0.05$). **Conclusion:** VAP Scale results revealed significant difference between pre and post treatment score in all groups, suggestive of positive effect on QOL in patients with vestibular disorders.

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INTRODUCTION

Vertigo, the illusion of motion, namely of rotation of the body or the environment, is a common and debilitating complaint in patients presenting with peripheral or central vestibular disorders.^[1] It reflects a distortion of spatial orientation and is the most prevalent type of dizziness (which encompasses sensations of vertigo, light-headedness, presyncope and disequilibrium) accounting for 54% of reports of dizziness in primary care.^[2]

The Vestibular rehabilitation protocols are considered effective at reducing dizziness and its consequences. Treatment of vestibular deficits reduces the burden of fall related injuries and improves quality of life.^[3] Vestibular exercises improve balance, decrease risk of falling, decrease dizziness, and improve quality of life. Vestibular exercises improve vestibulospinal compensation in patients with acute peripheral vestibular disorders.^[4] Vestibular adaptation exercises result in improved postural stability and in a diminished perception of disequilibrium in both the chronic and acute stages. Vestibular adaptation exercises have also been shown to produce a more rapid recovery during the acute stage following unilateral vestibular loss.^[5]

Despite the high prevalence of dizziness complaints and the health implications of vestibular impairment, currently available conventional diagnostic tests (i.e. bed-side vestibular examination, caloric and rotational tests and posturography) are inadequate for evaluating the debilitating effects associated with vestibular disorders.^[6] Considering this, we selected present study to compare efficacy of vestibular rehabilitation exercises on quality of life in patients with vestibular disorders.

MATERIALS AND METHODS

After considering the utility of the study and obtaining approval from ethical review committee of the institute, we selected eighty patients with vestibular disorders of both genders.

Demographic profile of each patient was recorded. 4 groups were made and each group comprised of 20 patients. Group I performed adaptation exercises, group II performed habituation exercises, group III substitution exercises and group IV combined exercises. Vestibular activities and participation (VAP) was administered before and after exercises to fulfill the aim. VAP Scale results revealed significant difference between pre and post treatment score in all groups, suggestive of positive effect on QOL in

patients with vestibular disorders. Improvements in VAP Score between all groups were compared. The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

RESULTS

Group I comprised of 12 males and 8 females, group II had 11 males and 9 females, group III had 10 males and 10 females and group IV had 8 males and 12 females [Table 1].

The mean VAS score before exercise in group I was 2.9 and after exercise was 1.4. The mean VAS score before exercise in group II was 3.1 and after exercise was 1.2. The mean VAS score before exercise in

group III was 3.4 and after exercise was 1.5. The mean VAS score before exercise in group IV was 3.1 and after exercise was 1.02. The difference was significant ($P < 0.05$) [Table 2, Figure 1].

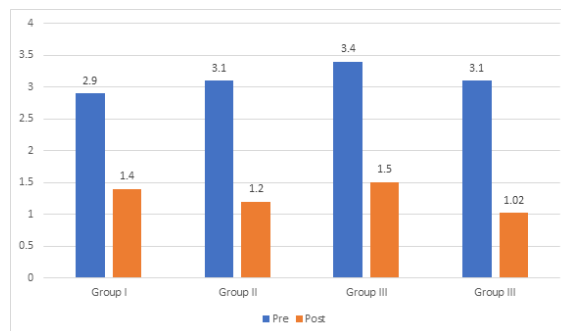


Figure 1: Comparison of VAS

Table 1: Patients distribution

Groups	Group I	Group II	Group III	Group IV
Method	Adaptation exercises	Habituation exercises	Substitution exercises	Combined exercises
M:F	12:8	11:9	10:10	8:12

Table 2: Comparison of VAP

Groups	Pre	Post	P value
Group I	2.9	1.4	0.02
Group II	3.1	1.2	0.01
Group III	3.4	1.5	0.03
Group III	3.1	1.02	0.05

DISCUSSION

Vertigo is the sensation of spinning or having one's surroundings spin about them. Many people find vertigo very disturbing and often report associated nausea and vomiting.^[7] It represents about 25% of cases of occurrences of dizziness. About 40% patients have peripheral vestibular dysfunction.^[8] Vestibular disorders also result in reduced postural control with instability in stance during ambulation and during transitional activities such as moving from lying to sitting to standing.^[9] Dizziness, unsteadiness and imbalance experienced by patients are linked with an increased incidence of falls, psychological and psychiatric disturbances, panic disorders and cognitive impairment, particularly amongst the elderly.^[10,11] The evidence is therefore clear that vertigo and related vestibular troubles can dramatically affect patients' QoL and even totally incapacitate the individual.^[12,13,14] We compared efficacy of vestibular rehabilitation exercises on quality of life in patients with vestibular disorders.

Our results showed that group I comprised of 12 males and 8 females, group II had 11 males and 9 females, group III had 10 males and 10 females and group IV had 8 males and 12 females. Sharma et al,^[15] in their study VAP scores pre and post-treatment were compared using paired t test for adaptation, habituation, substitution, and combined exercises. VAP mean score pre and post adaptation exercises were 2.89 with SD 0.14 and 1.45 with SD 1.00 respectively. Paired t test shows highly significant difference between VAP scores pre and

post adaptation exercise. VAP mean score pre and post habituation exercises were 3.00 and 1.14 respectively. Paired t test shows highly significant difference between VAP scores pre and post habituation exercises. VAP mean score pre and post substitution exercises were 3.02 and 1.85 respectively. Paired t test shows highly significant difference between VAP scores pre and post substitution exercises. VAP mean score pre and post combined exercises were 3.01 with SD 0.25 and 1.01 with SD 0.66 respectively.

Our results showed that the mean VAS score before exercise in group I was 2.9 and after exercise was 1.4. The mean VAS score before exercise in group II was 3.1 and after exercise was 1.2. The mean VAS score before exercise in group III was 3.4 and after exercise was 1.5. The mean VAS score before exercise in group IV was 3.1 and after exercise was 1.02. The efficacy of betahistine in improving the QoL in patients with vertigo due to peripheral vestibular disorders was confirmed by Mira et al,^[16] in 144 patients (81 with Menie're's disease and 63 with recurrent paroxysmal positional vertigo, PPV) that compared betahistine (16 mg twice per day for 3 months; n = 75) with placebo (n = 69). Betahistine not only significantly reduced the frequency, intensity and duration of vertigo attacks but also significantly improved the patients' QoL. The number of monthly vertigo attacks was reduced from a mean of approximately 7 to 2 after 3 months of betahistine treatment, with the effect significantly different from the first month of treatment compared with placebo. The intensity score of vertigo was more

frequently improved in the betahistine-treated patients compared with placebo from the time of 15-day assessment ($p < 0.02$) and the duration of attacks was improved by the second month of study ($p < 0.02$). The study conducted by Zeigelboim et al,^[17] in which a sample of 6 patients aged 43–70 years showed no significant improvement of dizziness and tinnitus as regards the functional, emotional, and physical aspects after VR.

The shortcoming of the study is small sample size.

CONCLUSION

VAP Scale results revealed significant difference between pre and post treatment score in all groups, suggestive of positive effect on QOL in patients with vestibular disorders.

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