LETTER TO THE EDITOR

VESTIBULAR REHABILITATION EXERCISES SHOULD BE AN EFFECTIVE FIRST-LINE TREATMENT INSTEAD OF MEDICATIONS IN PAKISTAN FOR BENIGN PAROXYSMAL POSITIONAL VERTIGO

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Dear Editor,

Let me divert your kind attention to the effectiveness of vestibular rehabilitation exercises (VRE) as the first-line treatment for benign paroxysmal positional vertigo (BPPV) in Pakistan. BPPV is a common otoneurologic disorder in adults, characterized by sudden vertigo triggered by certain head movements. It is associated with various symptoms, such as hearing loss, poor balance, and an increased risk of falls, leading to hospital admissions, especially in developing countries. Current guidelines recommend VRE as the primary treatment for BPPV, yet many general practitioners lack awareness of this non-pharmacological therapy. VRE, including gaze stabilization exercises, balance training, and canalith repositioning manoeuvres like the Epley manoeuvre, can effectively alleviate BPPV symptoms. These exercises promote central compensation, reducing secondary symptoms and improving balance by enhancing neural plasticity in the central nervous system. Trained healthcare professionals should administer VRE, and providing educational materials and promoting VRE in local newspapers can enhance its accessibility. Published studies support the efficacy of VRE in improving BPPV symptoms and balance. Implementing VRE as the first-line treatment can reduce reliance on medications, investigations, and recurrence of BPPV, ultimately improving patients' quality of life and reducing hospital admissions. Further research can explore the long-term effects of VRE and investigate its potential combination with other interventions. This approach has the potential to alleviate the burden on hospitals due to fracture admissions resulting from falls associated with dizziness in the elderly.

We are here to discuss the role of vestibular rehabilitation exercises (VRE) in treating BPPV. Benign paroxysmal positional vertigo (BPPV) is the most prevalent otoneurologic disorder in adults and can occur suddenly due to cervical hyperextension or when the head is turned in a specific direction.[1] BPPV is also associated with hearing loss, tinnitus, poor balance, gait disturbance, and an increased risk of falls, which can lead to increased fracture admissions in hospitals, especially in developing countries.[2,3] As per the guidelines by the National Institute for Health and Care Excellence (NICE) UK, vestibular rehabilitation exercise is regarded as the primary treatment for benign paroxysmal positional vertigo (BPPV). A survey conducted among general practitioners (GPs) in the Netherlands revealed that they were unaware of how to administer this non-pharmacological therapy to their patients.[4] Although there are several drug therapies available, VRE (vestibular rehabilitation exercise) can be an adequate substitute for medications that are considered costly for people. After BPPV is diagnosed with Dix and Hallpike manoeuvre, VRE should be done which consists of gaze stabilization exercises, balance training, canalith repositioning manoeuvres (Epley's manoeuvre), habituation, and substitution exercises respectively. These exercises are modified according to the patient's clinical features. Epley's manoeuvre is the most widely used vestibular manoeuvre to treat posterior canal BPPV. The manoeuvre is done to move any debris or crystals in the posterior canal to a different position in the ear. In this manoeuvre the patient is made to sit with their head rotated 45 degrees towards the affected ear, then the patient is made to lay on their back with their head hanging over the edge of the bed. The head is then rotated 90 degrees towards the unaffected ear and finally, the whole body is rolled over with the nose pointing downward. In the end, the patient is made to sit with their chin on the shoulder and slowly returned to an upright sitting position. Vestibular rehabilitation exercise can reduce secondary symptoms, including nausea and anxiety, as well as imbalance, falls, and fear of fall symptoms such as oscillopsia, vertigo, dizziness, and motion sensitivity, through central compensation.[2] VRE encourages visual stabilization, improves vestibular-visual interaction during head movements, improves standing and dynamic postural stability in situations that produce conflicting sensory information, and decreases sensitivity to head movements. Its beneficial effects on balance are based on mechanisms connected to the central nervous system's neural plasticity.[1] These exercises should be performed by trained healthcare professionals after they are properly trained through a hands-on workshop. Moreover, distributing

pamphlets in local languages to patients for home-based vestibular remedies will reduce the incidence of vertigo even more quickly. Publishing this therapy in local newspapers can also help in this regard. This will in turn decrease established and non-established side effects of anti-vertigo medications in patients that are already on the number of drugs for other co-morbidities. This can be explained based on several established published studies. A systematic review by Riberio *et al*. (2017) deduced that there was a drastic improvement in symptoms in patients who underwent VRE.[5] A meta-analysis by Ma *et al*. (2020) also supported the evidence of the effectiveness of vestibular rehabilitation exercise in treating BPPV.[6] A systematic review by Han *et al*. (2020) discovered that vestibular rehabilitation exercise helped reduce dizziness symptoms in patients with BPPV.[7] Li *et al*. (2021) conducted a randomized controlled trial and concluded that vestibular rehabilitation exercise drastically improved balance and dizziness in patients with BPPV.[8] In conclusion, vestibular rehabilitation exercises and manoeuvres are effective treatment strategies for BPPV. They are safe and cost-effective solutions that can significantly improve the quality of life of individuals suffering from BPPV. Otolaryngologists should use these treatment modalities as they are considered the first line of treatment. The institution of these therapeutic repositioning manoeuvres and exercises has reduced the use of medications and investigations while also reducing the recurrence of BPPV. Future studies in our country could explore the long-term effects of vestibular rehabilitation exercise on BPPV and discover the potential benefits of combining this treatment option with other interventions. This would further reduce the burden on hospitals due to admissions of fractures that occur in the elderly following fall after dizziness.

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