Clinical Practice Guideline Summary

This first article addresses Action Statements 1 - 3 and 10, which guides rehabilitation professionals to know WHO can benefit from VR and should be offered care.

Rehabilitation professionals should offer VR to patients with symptoms due to acute (first 2 weeks from onset), subacute (after first 2 weeks and up to 3 months from onset), or chronic (after 3 months) unilateral hypofunction or bilateral hypofunction, including those within the pediatric population. Strong evidence indicates that VR, when appropriately prescribed, reduce reports of dizziness/vertigo, gaze instability, and imbalance and can shorten episodes of care. Subsequently, VR has been shown to improve activities of daily living and quality of life as well as reduce psychological distress and fall risk. The potential risks of VR can be an increase in cost and time for patients who have to travel for care and/or can cause an increase in symptoms at treatment onset. Additionally, neck pain, motion sickness, and/or nausea may be side effects of treatment. Although most patients benefit from participating in VR, a small percentage of patients' symptoms do not improve or may worsen. Patients with cognitive, learning, or general mobility deficits or active Meniere's disease may be possible exclusions for VR because these comorbidities may impede meaningful application of exercise strategies.

The CPG recommends that the areas of research that are needed for action statements 1 - 3 and 10 should examine: a) early versus delayed intervention to better understand the critical period for optimal vestibular compensation, b) factors that predict which patients will or will not recover without VR, c) outcomes in persons with semicircular canal versus otolith organ damage, d) impact of the magnitude and range of hypofunction relative to functional recovery, e) outcomes in children with confirmed vestibular dysfunction, f) determine the critical period for providing VR in children with vestibular dysfunction, such for those who are receiving cochlear implants, g) VR over time with longitudinal studies, and h) the concept of return to work relative to type impairment and job requirements, need for job modification, criteria for return to work or disability assignment, and indicators for return to safe driving.

To find the full article, one-page summaries for rehabilitation professionals and physicians, assessment/treatment algorithms, and patient fact sheets regarding the CPG, go to: http://www.neuropt.org/professional-resources/clinical-practice-guidelines/vestibular-hypofunction.

*This CPG does not include physical therapy management recommendations for Benign Paroxysmal Positional Vertigo.

Hall CD, et al. Vestibular Rehabilitation for Peripheral Vestibular Hypofunction: An Evidence-Based Clinical Practice Guidelines. JNPT. 2016; 40:124-155.

PMID: 26913496

Clinical Practice Guideline Summary

This is the second of three articles that summarize the 10 action statements and research recommendations formed from the Clinical Practice Guidelines for Peripheral Vestibular Hypofunction (CPG). The first article summarized action statements 1 - 3 and 10, which addressed WHO can benefit from vestibular rehabilitation and should be offered care.

This article addresses Action Statements 4 - 7, which guides rehabilitation professionals to know HOW to treat patients with peripheral vestibular hypofunction.

Since the primary approach to management of patients with peripheral vestibular hypofunction is with exercise, it is important to know that there is moderate evidence that supports this practice. Based on the best available research, the CPG recommends that rehabilitation professionals provide targeted exercise strategies to address identified impairments and functional limitations. Evidence has demonstrated treatment effectiveness when using the following exercise strategies: 1) gaze stability exercises based on principles of adaptation (involves head movements while maintaining focus on a target) and of substitution (promotes use of alternative sensory input to substitute for missing vestibular function) to promote visual fixation when the head moves, 2) habituation exercises to decrease sensitivity to symptoms provoked by head movement, and 3) balance and gait training that incorporates use of substitution techniques, changes in base of support, weight shifting, and/or varying the activity with head turns, secondary tasks, and virtual reality for the purpose of challenging the center of gravity control to improve stance and gait.

It is important that rehabilitation professionals be aware that there is strong evidence that voluntary saccadic or smooth pursuit eye exercises, used while the head remains stationary, should not be offered in isolation as gaze stabilization exercises. Studies have shown there are poorer outcomes in patients that perform only voluntary saccadic or smooth pursuit eye without head movement. These ineffective exercises, not only increase the financial burden for patients, but delay patients from receiving exercises that have demonstrated effectiveness.

When deciding whether patients should participate in a customized, supervised exercise program as compared to performing generic exercises and/or solely home-based exercises, there is moderate evidence demonstrating that patients with peripheral vestibular hypofunction have a preponderance of benefit as compared to harm when using a customized, supervised program that incorporates home-based exercises. Research has shown that this type of program can promote adherence as compared to participation in solely home-based exercises (evidence of higher dropout rate when unsupervised). Also, without feedback from a therapist during exercise, the patients may under- or over-comply with the exercise prescription resulting in lack of progress or increased symptoms. Patients with cognitive or moderate-severe mobility deficits or are fearful of falling may need supervision to benefit from VR. There should be thoughtful consideration of the time and money that is required of patients when they participate in supervised VR. This conflict may play a role in whether patients would prefer to participate or not, especially if they live long distances from the therapy location.

Regarding dosage of treatment for patients with peripheral vestibular hypofunction, there are only a few studies that have examined the effects of frequency and intensity of home-based programs using gaze stability exercises. Based on best practice and guided by the evidence, expert opinion recommends the following as the optimal home-based exercise dose using gaze stability exercises:

-Three times per day for at least 12 minutes for acute and subacute

-Three times per day for at least 20 minutes for chronic

Even though providing the appropriate exercise dose may lead to improved outcomes, there is a risk of temporarily increasing symptoms during and after exercise, and especially during acute stage, there can be a risk of increased nausea/emesis. Keep in mind that some physicians may delay exercises, during early postoperative stage, because of risk of bleeding or cerebrospinal fluid leak.

The CPG recommends that the areas of research that are needed for action statements 4 - 7 should examine: a) the effectiveness of different types of vestibular exercises in large clinical trials to determine optimal exercise approaches, b) the adherence of patients by including measures to understand the impact of supervision and incorporate intent-to-treat designs to understand dropout rates related to supervision, and c) the impact of frequency, intensity, time, and type of exercises on VR outcomes and include methods to determine the difficulty of exercises and systematic exercise progression.

To find the full article, one-page summaries for rehabilitation professionals and physicians, assessment/treatment algorithms, and patient fact sheets regarding the CPG, go to: http://www.neuropt.org/professional-resources/clinical-practice-guidelines/vestibular-hypofunction.

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