The Most Effective and Efficient Bedside Exam for the Dizzy Patient in the Acute Care Setting: A Systematic Review of the Literature

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Introduction

Dizziness is one of the most common symptoms and chief complaints of patients presenting in the emergency department, with nearly 7.5 million patients examined annually for this condition.2,3,4 Dizziness can present as a symptom of an emergency situation suggesting a central disorder or a symptom of a nonthreatening peripheral disorder.1,5 Bedside testing can be used during a thorough examination of a patient by a physical therapist to differentially diagnose a patient with complaints of dizziness.1,5 The term bedside testing, as used by the investigators, refers to objective tests that can be performed without equipment in the acute care setting. A list of bedside vestibular tests and differential diagnosis of central versus peripheral disorders can be found in Table 1.

If a central disorder is suspected, the patient may need to be referred to the appropriate health care provider and may require additional testing.3,16 If a peripheral disorder is suspected, appropriate bedside tests will be used to determine a physical therapy (PT) plan of care.3,5,18

According to the American Physical Therapy Association, PT graduates should be able to select and perform tests and measures accurately related to vestibular testing, identify the natural course of a vestibular disorder, and interpret examination items of these tests and measures accurately related to vestibular testing, identify the natural course of a vestibular disorder.

The purpose of this systematic review is to evaluate the effectiveness and efficiency of bedside vestibular tests for patients with complaints of dizziness and vertigo in the acute care setting. This includes differentiating between a central and peripheral disorder, as well as diagnosing peripheral disorders within the scope of physical therapy practice.

Methods

An original search was conducted on July 16, 2015 using four databases (PubMed, CINAHL, Cochrane, and Scopus) with the following search terms: acute dizziness OR acute vertigo AND physical examination OR physical therapy. A repeat search of the literature was conducted on January 21, 2016 with the same search strategy, terms, inclusion and exclusion criteria. Figure 1 illustrates the selection of studies for this SRL.

- Inclusion Criteria: mention of bedside dizziness, bedside exam used, published within last 10 years
- Exclusion Criteria: not in English, published before 10 years, peripheral vestibular diagnosis not established, not an original research article with participants, exam technique not performed bedside

Discussion & Limitations

- A general trend of high specificity and variable sensitivity was found in most vestibular tests.9,10,12,14 A peripheral vestibular test with high specificity suggests the patient is presenting with a peripheral disorder when the test result is positive. In contrast, a central vestibular test with high sensitivity differentiates to the examiner that when a negative result is found, a peripheral disorder is likely the cause.

The Dix-Hallpike Maneuver is considered the gold standard when diagnosing BPPV.1,4,7,14 However, the psychometric properties were not priority in the research articles identified through this SRL search.2,4,11.12 The Dix-Hallpike maneuver can be performed bedside, and should be considered an essential component of vestibular testing.8

- The Triple Test and STANDING protocol are combined tests that demonstrated high specificity for diagnosing left and right BPPV.9,10,13 Although the Triple Test was strategically designed, unless all three tests are positive, the gold standard caloric test is still required in order to confirm a peripheral diagnosis.8

- Time efficiency may improve the overall effectiveness of a clinician’s exam.4,7 There are a few gold standard tests used for differential diagnosis of central vs. peripheral disorders when diagnosing a patient with dizziness.1,11.11 However, these exams can be lengthy due to the use of additional equipment and the potential need to consult other professionals.1,11,12 All of the bedside vestibular tests identified in this SRL can be performed by physical therapists without the need for supplementary equipment.2,4,6,7,11

- The number of studies that addressed combined vestibular tests in order to diagnose dizziness in the acute care setting is sparse. A successful combination of tests may result in a more efficient and time effective approach in differential diagnosis of a patient with dizziness.

Conclusion

This SRL found ten published articles addressing bedside examination items for diagnosing vestibular disorders.2,4,7,11,12 The search produced case studies and cohort studies, limiting our ability to determine the most effective and efficient bedside examination and appropriate pairing of tests to diagnose dizziness in the acute care setting.

References