Evidence-Based Practice
Management of Vertigo

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KEYWORDS

• Vertigo • Dizziness • Evidence-based otolaryngology • Vestibular
• Benign paroxysmal positional vertigo • Otolaryngologic symptoms

KEY POINTS

The following points list the level of evidence as based on Oxford Center for Evidence-Based Medicine.

- Benign paroxysmal positional vertigo (BPPV) is the most common diagnosis of vertigo (level 4).
- Dix-Hallpike maneuver is the diagnostic test for posterior canal BPPV (level 1).
- Supine roll test is the diagnostic test for lateral canal BPPV (level 2).
- Epley maneuver is the first-line treatment for posterior canal BPPV (level 1).
- Posterior semicircular canal occlusion is an effective treatment for recalcitrant posterior canal BPPV (level 4).
- Lateral canal BPPV can be treated with a variety of repositioning maneuvers (level 2).

OCEBM Levels of Evidence Working Group.[a] "The Oxford 2011 Levels of Evidence." Oxford Center for Evidence-Based Medicine. http://www.cebm.net/index.aspx?o=5653.

[a] OCEBM Levels of Evidence Working Group—Jeremy Howick, Iain Chalmers (James Lind Library), Paul Glasziou, Trish Greenhalgh, Carl Heneghan, Alessandro Liberati, Ivan Moschetti, Bob Phillips, Hazel Thornton, Olive Goddard, and Mary Hodgkinson.

PROBLEM OVERVIEW
Vertigo

Vertigo is a symptom, not a disease. Effective diagnosis and management of vertigo begin with understanding what the symptom may represent. A survey of the members of the American Otological Society and the American Neurotology Society revealed that 75% of respondents agreed or agreed strongly that the definition of vertigo in clinical practice should be more precise.[1] Whereas 45% of respondents

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favored restricting vertigo to describe a sensation of spinning or turning only, 40% of respondent favored including any sensation of movement in the definition of vertigo. Since acute inner ear pathology typically produces a spinning sensation, the more restrictive definition of vertigo renders it a more specific clue for a possible otologic vestibular disorder. A narrow focus on spinning may not be sensitive to chronic or milder inner ear pathology, however, where sensation of movement other than spinning might be elicited. Even though a consensus has not been reached on the precise definition of vertigo, it is reasonable to infer from the survey results that the overwhelming majority of otologists would recognize vertigo as distinct from other flavors of dizziness, such as presyncopal lightheadedness, disequilibrium, or other unsettling sensations.[2]

Epidemiologic surveys showed that 20% to 30% of the population may have experienced vertigo or dizziness in their lifetime.[3–6] A German national telephone health survey followed by structured neurotologic interview identified the lifetime prevalence of vestibular vertigo to be 7.8%, with an annual incidence of 1.5%.[7] In the United States, 1.7% of ambulatory medical care visits recorded vertigo or dizziness among the chief complaints.[8] Vertigo or dizziness also accounted for 2.5% of presentations to US emergency department in the years 1995 to 2004.[9]

Vertigo is a symptom in a wide range of disorders (**Table 1**). The article focuses on the evidence basis for the management of benign paroxysmal positional vertigo (BPPV), the most common diagnosis of vertigo in both primary care and subspecialty settings.[10,11]

Benign paroxysmal positional vertigo

BPPV is a disorder of the inner ear characterized by episodes of vertigo triggered by changes in head position.[12] BPPV is thought to be caused by the presence of endolymphatic debris in 1 or more semicircular canals. Direct evidence of such debris or canaliths has been demonstrated for posterior canal BPPV.[13] The presence of debris in lateral canal BPPV has not been demonstrated directly. However, treatment of posterior canal BPPV by repositioning the debris can lead to lateral canal BPPV. By inference, lateral canal BPPV can also be caused by endolymphatic debris.[14,15]

A population-based study estimates BPPV has a life-time prevalence of 2.4% and accounts for 8% of the individuals with moderate-to-severe dizziness or vertigo.[16]

Posterior canal BPPV account for about 90% of the cases, and lateral canal BPPV accounts for about 8% of the cases, according to a review of 10 series with a total of 3342 patients.[17] In rare instances, the anterior canal or multiple canals might be involved.[18]

Table 1
Basic differential diagnosis of vertigo

Otological Conditions	Neurological Conditions	Others
Benign paroxysmal positional vertigo	Migraine-associated vertigo	Postural hypotension
Vestibular neuritis/labyrinthitis	Vertebrobasillar insufficiency	Medication side effects
Meniere disease	Demyelinating diseases	Anxiety or panic disorder
Superior semicircular canal dehiscence	CNS lesions	Cervical vertigo

Adapted from Bhattacharyya N, Baugh RF, Orvidas L, et al. Clinical practice guideline: benign paroxysmal positional vertigo. Otolaryngol Head Neck Surg 2008;139:S57.