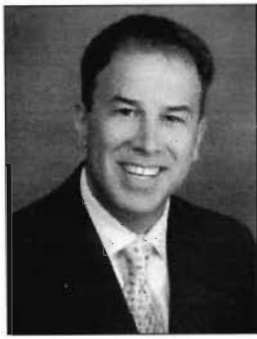


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Diagnosing the Cause of Dizziness in the Elderly



The crucial task for a primary care practitioner when an elderly patient presents with the common complaint of dizziness is to rule out a life-threatening or treatable disease and determine if the symptom represents a chronic, multifactorial

geriatric syndrome. Sczapanek et al from Hannover Medical School, Germany, conducted a prospective observational study of patients aged ≥ 65 years who were being seen for the first time due to dizziness that had been present for < 6 months.

All 66 eligible patients (48 women; 18 men) seen at 21 primary care practices completed questionnaires that asked for sociodemographic information and a detailed description of the dizziness: type (e.g., unsteadiness, fainting, vertigo), duration, triggers and concomitant symptoms. Additional questionnaires used for assessing the patients were the

- Dizziness Handicap Inventory (DHI)
- Dizziness Needs Assessment (DiNA)
- Geriatric Depression Scale (GDS)
- 12-item Short-Form Health Survey (SF-12)
- Activities of Daily Living (ADL)

At 1 and 6 months after the initial consultation, all the assessments were repeated, with additional questions about the persistence and intensity of symptoms.

At 6 months, 44 patients had persistent, or chronic, dizziness; they showed more impairment, with higher scores on the DHI and ADL, than did the 22 patients whose dizziness had been temporary. Scoring higher on the initial assessment was the only factor that tended to predict persistence of symptoms. On the DiNA, patients repeatedly rated the need to know the cause of their dizziness as very important.

Another aspect of the study analyzed the primary care physicians' preliminary diagnoses, referrals and specialists' diagnoses. A multicausal etiology was the initial diagnosis for 20 patients; of the 33 who were referred to specialists, 2 were diagnosed with benign paroxysmal positional vertigo (BPPV).

Conclusions and Clinical Implications

Dizziness is a common symptom among the elderly that can be a considerable handicap affecting quality of

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life. In this study, primary care physicians often viewed dizziness as a symptom of a multicausal geriatric syndrome. The authors suggested that a diagnostic algorithm be used so as not to miss causes such as BPPV, which can readily be treated by an otolaryngologist.

Sczapanek J, Wiese B, Hummers-Pradier E, Kruschinski C. Newly diagnosed incident dizziness of older patients: a follow-up study in primary care. *BMC Fam Pract* 2011;12:58.

Prevalence, Causes and Impact of Dysphonia



Vocal dysfunction can adversely affect a person's physical and social well-being, and work productivity. Cohen et al from Duke University Medical Center, North Carolina, authored 2 reports of a study undertaken in collaboration

with 3 other centers on the prevalence and causes of dysphonia and its impact on work. Through a nationally representative administrative U.S. claims database containing the annual health care claims of approximately 55 million individuals, 536,943 individuals were identified with a diagnosis of dysphonia, an overall prevalence of 0.98%. The highest prevalence (2.5%) was among those >70 years old (Table 1). Mean age of the total group was 46.3 ± 21.5 years; 63.4% were female and 85% were from urban areas. The main causes listed for the vocal problem were

- acute laryngitis
- benign vocal-fold lesions
- chronic laryngitis
- nonspecific causes (Table 2)

Overall prevalence of laryngeal cancer at initial diagnosis was 2.2%, highest in men >70 years (6.1%).

Conditions most commonly diagnosed in conjunction with dysphonia by primary care physicians were acute pharyngitis, acute bronchitis, pneumonia and upper respiratory illness. Gastroesophageal reflux was more commonly diagnosed by otolaryngologists. Of the total patient population, 48% of patients were evaluated by primary care physicians and 33.5% by otolaryngologists.

Analysis of data on work absences, short-term disability and workers' compensation found 18,466 patients who had 31,248 short-term disability claims from 2004 through 2008. A dysphonia-related diagnosis accounted for 386 (2.1%) of these. One-year follow-up data available for 190 patients were analyzed further. They lost a mean of 39.2 workdays, along with \$4,437.89 in wages; benefits paid per person were \$3,406.68. Total payments in 2008 dollars were calculated as \$647,269.30, and total indirect costs related to lost wages, \$843,198.72.

Benign vocal-fold lesions accounted for 43.7% of the claims. These patients missed fewer workdays and received lower total payments than did those whose claims were due to nonspecific dysphonia or chronic laryngitis, possibly because of more prompt diagnosis and treatment (by surgery). Patients with laryngeal cancer had the most days absent and highest total short-term disability payment.

Conclusions and Clinical Implications

This epidemiologic study showed the prevalence of dysphonia in the United States to be just under 1%,

Table 1. Dysphonia prevalence rates and percentage of population by age, and by age and sex

Age at diagnosis	%*	Prevalence rate	Male %†	Female %†	Male prevalence rate	Female prevalence rate
0-9 years	7.9	0.6	12.7	5.2	0.7	0.5
10-19 years	6.2	0.4	6.2	6.1	0.3	0.6
20-29 years	7.4	0.5	5.0	8.8	0.2	0.7
30-39 years	12.3	0.8	9.8	13.8	0.5	1.1
40-49 years	17.5	1.1	14.5	19.2	0.7	1.4
50-59 years	20.9	1.5	19.4	21.8	1.1	1.9
60-69 years	13.8	1.8	15.5	12.8	1.6	2.1
>70 years	14.0	2.5	16.9	12.3	2.6	2.4

*Percentage is calculated from the total dysphonic population (n = 536,943). †Percentage is calculated from the total male (n = 196,682) and female (n = 340,261) dysphonic population.



Table 2. Percentage of dysphonia diagnosis based on category of International Classification of Diseases, 9th Revision, Clinical Modification

Dysphonia diagnostic category	Patients diagnosed by all providers, %*	Patients diagnosed by primary care physician, %*	Patients diagnosed by otolaryngologist, %*
Unilateral vocal-fold paralysis	2.0	0.7	3.3
Bilateral vocal-fold paralysis	0.1	0.03	0.2
Vocal-fold paresis	0.7	0.2	1.1
Nonspecific dysphonia	31.2	19.7	44.9
Acute laryngitis	42.1	66.9	8.3
Benign vocal-fold pathology	10.7	3.7	17.9
Other larynx/vagus	0.6	0.3	0.6
Chronic laryngitis	9.7	3.9	19.3
Laryngeal cancer	2.2	1.1	1.8
Laryngeal spasm	2.2	2.1	1.6
Other speech disorder	1.5	0.8	0.1

*Patients can have >1 diagnosis. Percentage is calculated from total population (n = 536,943) and populations evaluated by primary care physician (n = 260,095) and otolaryngologist (n = 175,715), respectively.

with important differences in prevalence related to age, sex, diagnosis and type of physician diagnosing the illness. Dysphonia causes significant societal costs due to work-related disability. The authors emphasized the importance of appropriate diagnosis.

Cohen SM, Kim J, Roy N, et al. Prevalence and causes of dysphonia in a large treatment-seeking population. *Laryngoscope* 2012;122:343-348.

Cohen SM, Kim J, Roy N, et al. The impact of laryngeal disorders on work-related dysfunction. *Laryngoscope* 2012;doi:10.1002/lary.23197.

Sleep Apnea and Risk of Cognitive Impairment



Hypertension, cardiovascular disease and diabetes are among the adverse health effects that have been associated with sleep-

disordered breathing. Yaffe et al from the University of California, San Francisco, conducted a prospective study in collaboration with investigators from 4 sites around the United States on a possible association between sleep apnea and cognitive impair-

ment. Participants were recruited from those enrolled in the Study of Osteoporotic Fractures, a cohort study started in 1986 that enrolled community-dwelling women aged ≥ 65 years and able to walk unassisted. Between 2002 and 2004, the Sleep and Cognition Study was added, and 461 eligible women participated in the polysomnography study. At follow-up, 305 women completed a battery of neuropsychologic tests and had their cognitive status determined.

Complete data were available for 298 women (mean age, 82.3 years); of these, 105 (35.2%) met the criteria for sleep-disordered breathing: an apnea-hypopnea index of ≥ 15 events/hour of sleep. Median total sleep time was 6.0 hours, with a median of 18.0 arousals/hour of sleep and a median wake after sleep onset of 79.0 minutes. Also determined were the oxygen desaturation index (number of oxygen desaturations $\geq 3\%$ /hour of sleep), the percentage of sleep time with oxygen saturation, and the percentage of sleep time in apnea or hypopnea.

After a mean follow-up of 4.7 years, 60 of the 298 women (20.1%) showed mild cognitive impairment and 47 (15.8%) had dementia; these women had lower baseline scores on the cognitive tests but otherwise did not differ in baseline characteristics from those without impairment. Of the 105 women with sleep-disordered breathing, 47 (44.8%) developed mild cognitive impairment or dementia, compared with 60 of the 193 (31.1%) without the sleep problem ($p = .02$).

Statistical analyses showed the presence of sleep-disordered breathing to be associated with increased odds of subsequent mild cognitive impairment or dementia (adjusted odds ratio 1.85; 95% confidence interval, 1.11–3.08). Also associated with higher



incidence of mild cognitive impairment or dementia were a high oxygen desaturation index and a high percentage of total sleep time in apnea or hypopnea. Conversely, sleep time with an oxygen saturation of <90% was not significantly associated with cognitive impairment, nor were sleep fragmentation or sleep duration.

Conclusions and Clinical Implications

In this population of older women, sleep-disordered breathing was associated with an increased risk of developing cognitive impairment within 5 years, supporting the hypothesis that the one precedes the other. The authors considered hypoxia a likely mechanism because measures of hypoxia were consistently related to the mental impairments. While further, larger studies are needed for confirmation, the possibility that obstructed breathing resulting in sleep impairment is a cause of dementia in the elderly suggests that some of these cases may be prevented.

Yaffe K, Laffan AM, Harrison SL, et al. Sleep-disordered breathing, hypoxia, and risk of mild cognitive impairment and dementia in older women. JAMA 2011;306:613-619.

Assessing the Efficacy of Tympanostomy



Tympanostomy, treatment by insertion of a ventilation tube, in children with secretory otitis media (SOM) or recurrent acute otitis media (rAOM) is the most common pediatric surgical procedure and considered by otolaryngologists one of the most effective they perform. Hellström et al from Karolinska University Hospital, Sweden, examined evidence for its effectiveness through a systematic review of the literature.

PubMed, Cochrane Library and Embase databases were searched for English, Scandinavian, German and French language studies published between 1966 and 2007 in peer-reviewed journals. For inclusion in the systematic review, the study had to involve children or adolescents with a diagnosis of SOM, defined as a painless inflammation with effusion in the middle ear and impaired hearing for ≥ 3 months, or rAOM,

defined as ≥ 3 episodes of acute otitis media during 6 months or ≥ 4 episodes in 1 year. Outcome measures for SOM were hearing, language development and quality of life (QOL); outcome measures for rAOM were the number of episodes of acute otitis media and QOL. The search found 11 studies on SOM and 5 on rAOM that met the inclusion criteria. Also meeting the criteria were 9 studies on design and procedures, 30 on prophylaxis and treatment of otorrhea, and 11 on complications. Insufficient studies of good quality were found on antibiotic treatment, follow-up, factors influencing outcome or cost-effectiveness.

The systematic review found strong evidence that ventilation tube treatment for SOM, compared with no treatment, improves hearing for ≥ 9 months and good evidence that QOL of children with SOM is improved during the first 2 to 9 months after treatment. Long-term effects and the effect of ventilation tube treatment on language development could not be determined. Evidence for the efficacy of ventilation tube treatment for rAOM was contradictory.

Conclusions and Clinical Implications

This extensive search validated the use of ventilation tubes in children with SOM. The evidence in other areas was not strong enough for the authors to reach a conclusion. Further research is needed to address these issues as well as the need for more consistent definitions of SOM and rAOM and of the criteria for ventilation tube treatment.

Hellström S, Groth A, Jörgensen F, et al. Ventilation tube treatment: a systematic review of the literature. Otolaryngol Head Neck Surg 2011;145:383-395.

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