

GUEST EDITORIAL

The current state of clinical geriatric dysphagia research

The rapidly growing number of elderly people in the United States and worldwide suffers from pneumonia as the fifth leading cause of death at the age of 65, and it becomes the third leading cause of death in those over 85 [1]. A recent review of data from the Centers for Medicare and Medicaid Services (CMS), specifically Medicare Provider Analysis and Review (MEDPAR) files for hospitalization for elderly patients with aspiration pneumonia and general pneumonia from 1991 to 1998, reported a 93.5 percent increase in hospitalization because of aspiration pneumonia, while the incidence of other types of pneumonia decreased [2].

It is not a coincidence that during that same decade and the one prior (1980 to 2000), the high prevalence of swallowing disorders, known also as dysphagia, in older adults had gained much attention [3]. Estimates range from 15 to 50 percent of those over the age of 60 have dysphagia. Prevalence depends on the specific populations sampled with community dwelling and more independent individuals having rates at the lower end near 15 percent [4], a finding congruent with the prevalence rates of a number of other “geriatric syndromes.” On the other end of the continuum, upward of 40 percent of those within institutional settings, such as assisted living or nursing homes, are dysphagic [5]. In addition to the traditional notion that the high incidence of dysphagia in older adults is due to age-related diseases, such as stroke and Parkinson’s disease (for which bronchopneumonia is the leading cause of death), other work has emerged indicating that even healthy elders are more at risk for aspiration (defined as the entry of material into the airway below the level of the true vocal folds) caused by a progression of change in the oral pharyngeal swallowing mechanism as a function of disease-free aging [6–8].

During recent years, sarcopenia has been defined as age-related loss of skeletal muscle mass and has been identified as a public health problem [9]. Although much work in sarcopenia has focused on limb musculature, investigators have confirmed changes in fiber density, muscular tension, muscle strength, and muscular contraction in facial, masticatory, and lingual musculature [10–14]. Most likely,



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these age-associated changes reflect the underlying condition of sarcopenia in head and neck muscles. That is, diminished muscle mass may be causally related to the increased risk of dysphagia observed with increasing age, even in the absence of a significant acute event. This is particularly important when an older healthy adult, whose functional reserve is naturally diminished, is faced with increased stressors such as central nervous system (CNS)-altering medications, mechanical perturbations (e.g., nasogastric tubes or tracheotomy), or chronic medical conditions (e.g., frailty) that might not elicit dysphagia in a less vulnerable system.

The consequences of dysphagia vary from social isolation to the embarrassment of choking or coughing at mealtime, to physical discomfort (e.g., food sticking in the throat or chest), and to potentially life-threatening conditions. Both overt aspiration and silent aspiration (the circumstance in which the bolus, comprising saliva, food, liquid, or any foreign material, enters the airway below the vocal folds without triggering the overt symptoms of coughing or throat clearing) may lead to pneumonitis, pneumonia, exacerbation of chronic lung disease, or even asphyxiation and death.

In fiscal year (FY) 2000, more than 270,000 Department of Veteran's Affairs (VA) patients with a primary or secondary diagnosis of a swallowing problem visited VA Hospitals across the nation, accounting for approximately 350,000 patient visits or admissions (VA National Database, Austin, Texas). Indeed a prevalence of dysphagia has been reported of 33 percent for Neurology and Neurosurgery wards in one VA hospital [15], with a follow-up study identifying a 20 percent prevalence rate across the agency [16], a rate that increases to 45 percent in nursing home facilities. The VA is particularly concerned about optimal approaches to healthcare for the increasing number of elderly patients. This is because by the year 2020, nearly half the VA population will be greater than 65 years of age, half of whom will be greater than 75 years (1998 Annual Report on Senate Committee on Aging), markedly increasing the already substantial frail veteran population [17]. Such patients are more likely to require increased care, repeated hospitalization, and nursing home placement. Since those older patients with dysphagia are more likely to suffer these and other adverse consequences, a focus on dysphagia care and remediation seems warranted. Timely and effective treatment of disordered swallowing in patients in general, but geriatric patients specifically, may minimize if not eliminate its negative impact on health, functional and nutritional status, and quality of life.

In recognition of the importance of geriatric dysphagia in the U.S. public health scene during the last decade, the Agency for Healthcare Research and Quality (AHRQ), formerly the Agency for Healthcare Policy and Research (AHCPR), contracted with the Emergency Care Research Institute (ECRI), a nonprofit health services research organization designated by AHRQ as one of its 12

Evidence-Based Practice Centers, to prepare an evidence-based report on dysphagia diagnosis and treatment in stroke patients (ECRI Report). Such reports, referred to as evidence reports or technology assessments, are solicited to help public and private sector organizations improve the quality of healthcare and research in the United States.

The 1999 AHRQ evidence report found very few studies that met its criteria for providing sufficiently robust evidence that was useful for technology assessment in the dysphagia field, and therefore, the report could only reach modest conclusions [4]. However, the report seems to be a beneficial catalyst for new thinking in the field about how researchers can provide the type of studies that will better show the true effectiveness, including cost effectiveness, of the methods being used in dysphagia diagnosis and treatment. In this respect, the dysphagia field may now be ahead of some other fields that have not yet undergone this type of assessment.

It is important to point out that the dysphagia field was not singled out. AHRQ and other groups have now issued many evidence-based reports, and all areas of medical practice eventually will receive this type of attention. In addition, the dearth of useful evidence-based review material in the dysphagia literature is not, by any means, unique. Few areas of medical practice have adequate literature for technology assessment [18].

Most importantly, the AHRQ report seems to have clearly sparked discussion and planning initiatives among established researchers in the field and inspired new researchers entering the field. In August 2001, AHRQ facilitated a meeting of 25 leading researchers in the dysphagia field along with representatives from research-funding organizations to formulate critical questions of interest to clinicians and policy makers and to plan research that can answer the questions. The VA, along with the National Institutes of Health (NIH), was strongly represented at that meeting. The group was clearly dedicated to moving beyond the limited conclusions of the AHRQ report. These collaborations will stimulate and guide dysphagia care and research for the future. The content of the August 2001 meeting is the subject of a special report in this issue, entitled "Dysphagia Research in the 21st Century and Beyond: Proceedings from the Dysphagia Experts Meeting, August 21, 2001" [19].

Provided adequate funding is awarded, these efforts should lead to a major expansion of our knowledge of the best and most cost-effective methods for diagnosing and treating aspiration, dysphagia in strokes, and other disorders, including frailty. In addition to being an aid in future research, the AHRQ evidence report has been useful as background material for a stroke rehabilitation guideline prepared by the VA. Many opportunities exist for the expansion of evidence-based practice. Again, the VA is at the forefront of activity that ultimately will ensure the best care for this country's veterans and the geriatric population at large. Being a part of this effort is an honor.

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