PD 167

Epidemiology of Balance and Dizziness Problems in United States Adults: Results from the 2014 National Health Interview Survey

Howard J. Hoffman[1]; Christa L. Themann[2]; Robert A. Dobie[3]; Anne E. Hogan[4]; Helen Cohen[5]; Gregory A. Flamme[6]; Katalin G. Losonczy[7]; Chuan-Ming Li[1]; Charles C. Della Santina[8]

[1]National Institute on Deafness and Other Communication Disorders, NIH; [2]National Institute for Occupational Safety and Health (NIOSH), CDC; [3]University of Texas Health Science Center at San Antonio; [4]Pacific University; [5]Dept of Otolaryngology, Baylor College of Medicine; [6]Western Michigan University; [7]National Institute on Deafness and Other Communication Disorders (NIDCD), NIH; [8]Johns Hopkins University School of Medicine

Objective
Estimate prevalence and risk factors for balance and dizziness problems (BDP).

Methods
We analyzed data from the 2014 National Health Interview Survey (NHIS), a nationally-representative health interview survey of 36,697 adults, aged 18+ years. Covariables were NHIS questions on hearing (self-reported difficulty, Gallaudet hearing scale, noise exposures, and tinnitus), health (arthritis, asthma, cancer, severe headaches/migraine, sinusitis, stroke), and limitations (cannot stand 2 hours). BDP was classified based on: "During the past 12 months, have you had a problem with dizziness, light-headedness, feeling as if you are going to pass out or faint, unsteadiness or imbalance?" We examined associations between BDP and socio-demographic, hearing, health, and functional status variables using multivariable logistic models.

Results
BDP prevalence was 14.8% (35.4 million), increasing from 11.7%, 15.8%, 19.7%, to 25.8% for adults 18-44, 45-64, 65-84, and 85+ years, respectively. Factors associated with BDP: female sex (odds ratio [OR]=1.57, 95% confidence interval [CI]:1.42–1.73), poverty-level income (OR=1.42;CI:1.20–1.68), any hearing difficulty (OR=1.34;CI:1.17–1.55), firearms noise (OR=1.29;CI:1.15–1.43), sinusitis (OR=1.36;CI:1.19–1.55), cancer diagnosis (OR=1.54;CI:1.32–1.81), joint pain/aches (OR=1.76;CI:1.59–1.95), cannot stand 2 hours (OR=1.96;CI:1.70–2.27); ever had stroke (OR=1.96;CI:1.54–2.49), tinnitus problem (OR=2.92;CI:2.42–3.53), and severe headaches/migraine (OR=2.97;CI:2.61–3.37). Specific hearing loss etiologies (due to medications/drugs, sudden onset, Meniere's, otosclerosis, ear injury–head/neck trauma) were associated with BDP. There was no association between duration of hearing loss and BDP.

Conclusion
BDP prevalence ranged from substantial for young adults to very common for the oldest. The strongest associations were with severe headaches/migraine and tinnitus, while other hearing and health conditions were also important.

PD 168

Immunocytochemical Changes in the Blood Labyrinthine Barrier of Vestibular Endorgans Obtained from Patients Diagnosed with in Meniere's Disease

Gail Ishiyama; Ivan Lopez; Akira Ishiyama
UCLA School of Medicine

Background
The keys to understand the pathophysiology of Meniere's disease are the cell-to-cell interactions and molecular mechanisms that regulate blood labyrinth barrier (BLB) integrity. We recently detected by transmission electron microscopy increased transcellular vesicular transport across vascular endothelial cells (VECs), detachment of pericyte processes, and disruption of the perivascular basement membrane in the stroma of vestibular endorgans obtained by ablative surgery from patients diagnosed with Meniere's disease. We hypothesize that Meniere's disease is associated with cellular and molecular changes in the vascular architecture of the human inner ear.

Methods
To investigated the degenerative changes in endothelial cells, pericytes , perivascular macrophages-like melanocytes, and the surrounding basement membrane, we used specific antibodies and immunofluorescence to identify changes in the protein expression of the BLB of vestibular endorgans obtained by ablative surgery from patients diagnosed with Meniere´s disease. Isolectin (IB-4) to identify VECs, alpha-smooth muscle actin (a-SMA), ZO-1 and occludin to identify tight junctions of VECs was used. Laminin-beta-2, and collagen IV to identify the perivascular basement membrane was used. We compared these results with those obtained from normative vestibular endorgans microdissected from temporal bones obtained at autopsy.

Results
We detected the following changes in the microvasculature of the macula and cristae stroma from Meniere's

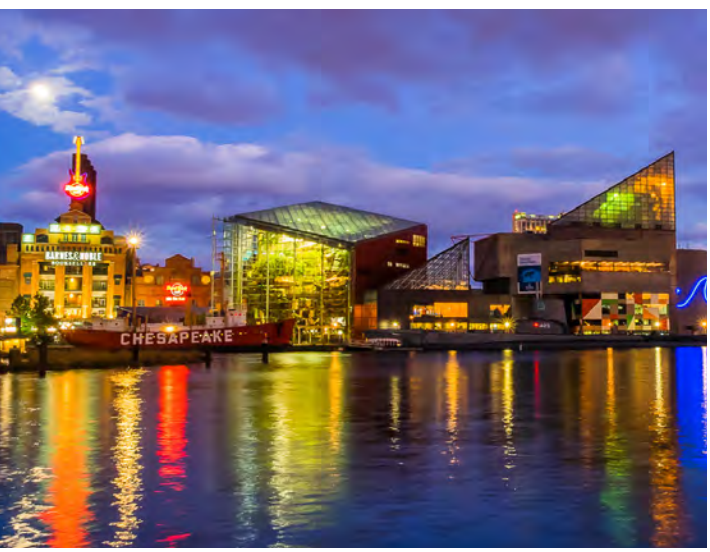
ASSOCIATION FOR RESEARCH IN OTOLARYNGOLOGY

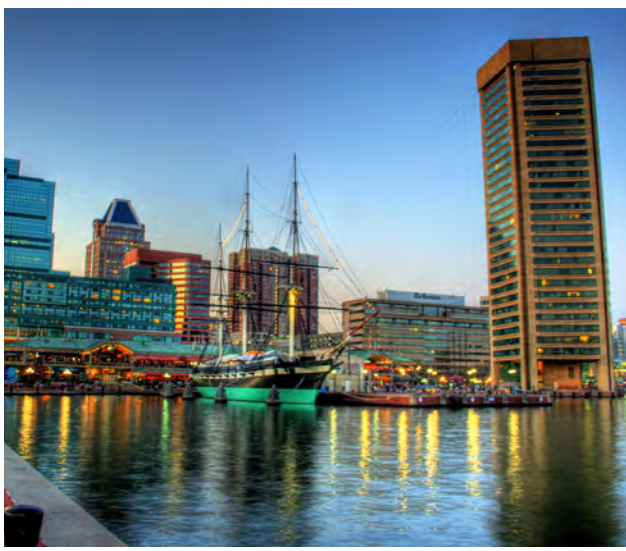
FOUNDED IN 1973

ABSTRACT BOOK

40th Annual MidWinter Meeting

February 11 - 15, 2017





Baltimore Marriott Waterfront
Baltimore, MD