

Employing Vestibular Perceptual Threshold Measurements to Differentiate Meniere's Disease and Vestibular Migraine

Principal Investigator: Divya Chari, MD, Massachusetts Eye and Ear

Patients with Meniere's disease (MD) and vestibular migraine (VM) can present a diagnostic challenge due to limited understanding of the underlying pathophysiology of these two conditions and the lack of reliable, objective diagnostic tools to differentiate the disorders. Moreover, many patients suffer from concurrent MD and VM, further complicating the diagnostic evaluation. Establishing the correct diagnosis is critical, as VM and MD have entirely different treatment paradigms. Currently, VM and MD are differentiated based on clinical consensus criteria that relies on patient history, audiometry, and conventional vestibular testing, which are crude diagnostic tools. Vestibular perceptual threshold measurements afford a significant advantage over traditional testing by assessing all vestibular end-organs with a single methodology and providing information about central processing of vestibular input.

The overarching goal of this proposal is to identify biomarkers to differentiate VM and MD and to shed light on the underlying pathophysiology of the two disorders. In Aim 1, will determine the sensitivity and specificity of vestibular perceptual thresholds in differentiating patients with VM and MD. In Aim 2, we will use vestibular perceptual thresholds to characterize the array of specific end-organ dysfunction and central processing deficits that occurs in patients with VM and MD. The work proposed herein should result in improved diagnostic accuracy of VM and MD which will, in turn, lead to more effective treatments for these patients. Given high prevalence, severe symptomatology, and inadequate diagnostic methods, advances in the ability to diagnose episodic vestibular disorders would yield immense public health benefits.