**ABSTRACT**

Ischemic heart disease (IHD) is a highly prevalent and one of the leading causes of mortality, yet in the majority of affected individuals, their diagnosis is not detected by clinical exam. As such, the majority of sudden cardiac deaths occurs in those not previously diagnosed with IHD. This suggests the need for better IHD screening mechanisms, and a growing body of literature suggests autonomic dysfunction may be a novel risk factor. Ambulatory electrocardiography can be used to study autonomic dysfunction through heart rate variability. Recently, a novel marker of heart rate variability (*Dyx*) was found to be predictive of myocardial ischemia based on abnormal nuclear stress test. Our group also found that low *Dyx,* when measured in the early morning, was predictive of abnormal myocardial perfusion imaging as well. It is not known, however, how *Dyx* correlates with coronary angiography findings and the need for coronary intervention. Additionally, *Dyx* is influenced by central neuropsychological mechanisms, such as depression. Neurologic pathways may influence coronary microvascular function and lead to ischemia even in the absence of obstructive coronary artery disease. Assessment of depression and cognitive impairment and their relationship with *Dyx* may help to elucidate additional neurocardiac mechanisms on how autonomic function may lead to adverse outcomes, even in the absence of coronary artery disease. We will examine the relationship of neuropsychological metrics (mood, cognitive function) and ischemic heart disease with *Dyx* to better understand these effects in a high-risk cohort of patients with stable angina who are undergoing cardiac catherization. Aim 1 will evaluate the relationship of low *Dyx* with obstructive coronary artery disease, based on cardiac catherization. Aim 2 will determine the effect of neuropsychological pathology, as determined by depression and cognitive impairment, on autonomic dysfunction as measured by low *Dyx*. The goal of this study is to further evaluate the utility of *Dyx* as a measure of autonomic dysfunction that can help risk-stratify patients for obstructive coronary artery disease, and also determine the influence of brain-related factors on it as well. This research will improve our understanding of the clinical importance of disturbances of the neurocardiac axis through a quantified measurement of autonomic dysfunction as it relates to clinically actionable coronary artery disease. As such, it may help to yield very important, low-cost assessments of risk with widespread public health implications.