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Cognitive Impairments in Adult CHD Patients

Often previously lethal, congenital heart disease (CHD) is now treated effectively with surgical, catheter, and medical interventions. The resulting dramatic improvement in life expectancy has brought a major demographic shift such that adult patients with CHD now outnumber children with CHD, even for complex conditions. Among the most common comorbidities in children with CHD are neurodevelopmental and psychosocial impairments, particularly in areas of executive functions, memory, attention, and behavioral control. Limited studies in the adult CHD population suggest similar cognitive and mental health impairments exist in this group as well. One recent study using administrative data from Denmark also showed an increased risk of early-onset dementia in adults with CHD. Adult CHD survivors remain at risk for cardiac interventions and sequelae of the CHD in addition to acquired medical conditions of adulthood that may predispose to cognitive impairment including heart failure, atherosclerotic disease, and stroke. The goal of our proposal is to *bridge the gap in knowledge between known cognitive deficits in childhood CHD and cognitive status in adults with CHD*. We propose to accomplish our goal by conducting a pilot study of cognitive ability using the Mini-mental State Exam (MMSE) among adult CHD patients, ages 30-65 years, coming to clinic for routine visits. The MMSE is a widely used tool to measure cognition and screen for impairments including early-onset dementia. **In Aim 1, we will explore objective cognitive function in adults between ages 30-65 years with CHD using the MMSE.** We hypothesize that adults with CHD will have lower scores than age and education adjusted population averages and will score lower in the specific areas of attention, calculation and recall. **In Aim 2, we will determine the association of MMSE test scores with CHD complexity, demographic, and clinical risk factors.** We hypothesize that lower performance on MMSE will be associated with greater anatomic CHD complexity. Our ultimate goal is to identify early, modifiable risk factors for adult cognitive performance with the intent that early identification and intervention may modify the natural history to improve outcomes.