

Fellow Research Grant - Nael Aldweib, MD  
Boston Adult Congenital Heart Disease Program  
Boston Children's Hospital

## **Serial C-Reactive Protein Measurements to Predict Clinical Events in Adults with Congenital Heart Disease**

Adults with congenital heart disease (ACHD) who have chronic low-level inflammation, indicated by elevated high-sensitivity C-reactive protein (hsCRP) in the blood, are more likely to have adverse clinical outcomes. Among ACHD, those with higher levels of hsCRP are at higher risk for hospitalization for adverse cardiovascular events including heart failure, arrhythmias and death. However, a single measurement in time has limited usefulness for directing clinical care over a lifetime, and changes in the level of hsCRP over time may have additional implications. The role of repeating measurements of hsCRP over time in ACHD has not been investigated. The overarching aim of this study is to define how repeated measurements of hsCRP may further inform our understanding of a given patient's health status and prognosis. The proposed project includes two parts. The first part involves patients we have previously enrolled in an ongoing ACHD Biobank. About 450 patients have had hsCRP measured at the time of enrollment and 2 years later. We will assess whether the change in hsCRP over time relates to patient characteristics and the risk for having an adverse clinical event during follow-up. The second part will involve enrolling ACHD patients admitted to the hospital with heart failure. We will measure hsCRP at the time of admission and after again treatment. Then we will determine if the change in hsCRP with treatment is related to response to therapy and quality of life. This study is feasible within the 1-year grant period and will help to clarify the appropriate place of measurement of hsCRP in the clinical management of ACHD.