

Dr. Cesare Russo, M.D.

Background: Patients with rheumatoid arthritis (RA) are at increased risk of developing heart failure (HF) and cardiovascular (CV) events compared to age- and gender-matched non-RA controls. The widening gap in survival between RA and the general population emphasizes the urgency to understand the causes, and to develop effective interventions to reduce, CV related morbidity and mortality in RA. This proposal will explore new pathways and predictors of cardiac dysfunction in RA, in order to identify subjects with RA at higher risk of cardiovascular disease.

Rationale: 1) Preliminary data suggest that anti-cyclic citrullinated peptides (-CCP) antibodies may be involved in an autoimmune-based attack to the myocardium in RA. We hypothesizes that titers of anti-CCP antibodies may be associated with subclinical myocardial dysfunction in RA patients. If proven, this association may allow the early identification of a subgroup at higher risk of developing HF/CV disease. 2) Antagonists of the tumor necrosis factor- α (anti-TNF) are highly effective in treating RA signs and symptoms, however, these drugs proved of no effect or even harmful in advanced HF patients. So far, no studies have directly investigated the effect of anti-TNF therapy on myocardial function in RA. It is crucial to clarify the cardiac effects of these treatment agents in RA, as it may have significant impact on CV outcome in these patients.

Approach: This proposal aims at investigating subclinical cardiac dysfunction in patients with RA in relation to serum concentrations of anti-CCP antibodies using speckle-tracking echocardiography, a technique more sensitive than traditional echocardiographic parameters in detecting cardiac dysfunction. Furthermore, we will evaluate in prospective design the effect of anti-TNF therapy, compared with usual medical care, on parameters of LV systolic and diastolic function in RA patients with high activity disease. The present study is an ancillary study of the Escape II Myocardium, an NIH funded study (P.I. Dr. Joan Bathon) aimed at identifying the correlates of LV structure and perfusion abnormalities in RA patients, and at evaluating the effect of anti-TNF therapy on myocardial perfusion/inflammation.