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Project title: *Anti-Ro Antibodies and conduction defects in SLE Adults*

Abstract: CVD is the most common cause of late death in SLE patients. The goal of this work is to provide knowledge on early detection of reversible processes contributing to this excess CVD mortality in adults with SLE. We will specifically study the association of cardiac conduction defects with the presence of myocarditis and myocardial microvascular dysfunction in SLE adults without CVD, stratified by anti-Ro antibody status. While cardiac arrhythmias are an important cause of CVD mortality in the general population, little is known about conduction defects in adults with SLE. Recent studies suggest that anti-Ro antibodies are not only pathogenic to the fetus but that they can lead to the development of conduction defects in the adult heart as well. Moreover, QTc prolongation which is the most common EKG defect in adults with SLE is known to be a risk factor for life-threatening arrhythmias in the general population. To date studies on cardiac conduction defects in SLE populations focusing on the underlying mechanisms are lacking. An autoimmune response against the myocardium and/or its conduction system could be responsible for conduction defects in SLE. The scarcity of available data warrants further investigation.

Our hypothesis is that there is an association between cardiac conduction defects and anti-Ro positivity in SLE adults and that myocardial inflammation and microvascular dysfunction may mediate this association. The detection of cardiac conduction defects in association with active cardiac inflammation and microvascular dysfunction would be of significant value as early intervention could lead to the prevention of clinical vascular events and improvement in survival in patients with SLE. If my hypothesis is confirmed, this study could have multidisciplinary implications and potentially lead to changes in current medical practice, providing guidance towards the monitoring and management of SLE patients at high risk for CV events.

***Key words:* anti-Ro, cardiac conduction defects, SLE**