MYOCARDIAL STRAIN REVEALS BIVENTRICULAR IMPAIRMENT IN ASYMPTOMATIC ARRHYTHMOGENIC RIGHT VENTRICULAR CARDIOMYOPATHY MUTATION CARRIERS

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 3:30 p.m.-4:30 p.m.

Session Title: Diagnosis and Treatment of Heart Failure
Abstract Category: Cardiomyopathies/Myocarditis/Pericardial Disease
Presentation Number: 1066-42

Authors: Kristina H. Haugaa, Sebastian I. Sarvari, Ole-Gunnar Anfinsen, Trond P. Leren, Otto A. Smiseth, Jan P. Amlie, Thor Edvardsen, Oslo University Hospital, Rikshospitalet, Oslo, Norway, Oslo, Norway

Background: Life threatening arrhythmias can occur prior to apparent ventricular dysfunction in arrhythmogenic right ventricular cardiomyopathy (ARVC) mutation carriers. Myocardial strain by echocardiography is a sensitive tool for assessing ventricular function. We aimed to investigate right (RV) and left ventricular (LV) function by strain in asymptomatic ARVC mutation carriers not fulfilling current ARVC criteria.

Methods: We included 14 individuals (age 38±18 years) positive for an ARVC related mutation (11 Plakophilin2 and 3 Desmoplakin) diagnosed by family genetic screening. 20 healthy individuals served as control group. Strain measurements were assessed by speckle tracking echocardiography. RV strain was calculated in a 3 segment model (free wall) and LV global strain in a 16 segment model.

Results: ARVC mutation carriers had significantly reduced strain in RV compared to healthy (-24.1±4.8 % vs. -28.3±5.4 %, p=0.04). In addition, LV strain was significantly reduced in mutation carriers (-18.2±2.4% vs. -20.5±1.9 %, p<0.01). LVEF did not differ between ARVC mutation carriers and healthy (63±5 % vs. 66±6 %, p=0.20).

Conclusions: Asymptomatic ARVC mutation carriers with no signs of the disease by current diagnostic guidelines had significantly reduced biventricular function assessed by strain echocardiography although LVEF was normal. This report suggests that strain echocardiography might identify preclinical disease and could be helpful in decisions regarding preventive treatment.