SHORT-TERM PROGRESSION OF LV DYSFUNCTION IN SENILE CARDIAC AMYLOIDOSIS DETECTED CONSISTENTLY BY DOPPLER SPECKLE TRACKING

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Sunday, March 25, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Pericardial/Myocardial Disease III
Abstract Category: 12. Pericardial/Myocardial Disease
Presentation Number: 1129-384

Authors: Rodney H. Falk, Candida Cristina Quarta, Brigham and Women’s Hospital, Boston, MA, USA

Background: Senile cardiac amyloidosis (SCA) is an increasingly recognized disease, yet the natural history is not known. Diastolic indices are often initially severely impaired and serial changes in these parameters are not consistent. LV wall thickness and EF show considerable measurement variability. Longitudinal strain has been shown to be impaired early in other forms of cardiac amyloid. It was therefore postulated that serial measures of LV strain by speckle imaging might detect deterioration of LV function over a short time frame in patients with SCA, despite stability of the echocardiographic appearance by other measures.

Methods: 11 patients with biopsy-proven SCA, all of whom presented with congestive heart failure were studied. All had 2 echocardiograms >6 and <24 months apart, and none were taking drugs which might alter the natural history of the disease. Strain imaging was obtained by tracing the endocardium in the apical 4-chamber view of the LV, representing the mean percentage shortening of 7 segments of the LV seen in this view.

Results: All patients were men, with a mean age of 73.8 yr (range 66-84). Over a mean of 11.9 months (7-20 month), the LV wall thickness did not change significantly, from a baseline of 17.0+/- 2.2 mm to 17.6+/- 2.1 mm; p=0.14. There were no significant changes in transmitral or tissue Doppler features or EF. In contrast, 10/11 of the patients demonstrated a fall in apical LV strain and the mean LV apical strain fell significantly from -11.5 +/- 2.9% to -8.5 +/- 3.3%; p=0.004.

Conclusions: In senile cardiac amyloidosis, a relatively slowly progressive disease, LV longitudinal contraction as measured by speckle strain imaging, falls consistently in patients receiving no treatment specific for amyloidosis over a mean period of 1 year. In contrast, wall thickness and ejection fraction and standard Doppler parameters show no consistent changes. Speckle tracking by LV imaging is thus a useful tool for detecting LV systolic functional changes in SCA. It offers a sensitive measurement which holds promise for evaluating function in SCA in upcoming clinical trials of therapeutic agents designed to slow, stop or even reverse cardiac amyloid deposition.