CONTRAST ENHANCED ULTRASOUND CHANGES CLINICAL MANAGEMENT IN PATIENTS UNDERGOING TRANSESOPHAGEAL ECHOCARDIOGRAPHY PRIOR TO ELECTRICAL CARDIOVERSION FOR ATRIAL FIBRILLATION OR ATRIAL FLUTTER

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Saturday, March 24, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Imaging: Echo Contrast
Abstract Category: 22. Imaging: Echo
Presentation Number: 1097-278

Authors: Chad E. Travers, Merrick Donenberg, Jonathan Kaplan, Arvin Bansal, Steven Feinstein, Rush University Medical Center, Chicago, IL, USA

Background: Contrast-enhanced ultrasound (CEUS) has been shown to improve diagnostic accuracy in patients undergoing transesophageal echo (TEE) prior to cardioversion of atrial fibrillation (AF). However, its impact on patient management has yet to be determined.

Methods: We retrospectively reviewed 200 consecutive TEE images between 1/2009 and 1/2011 that were performed on patients with the diagnosis of AF or atrial flutter in which CEUS (Definity, Optison) was administered. Fourteen of the 200 (7%) studies were deemed technically difficult and were included in our analysis and reviewed by 4 independent cardiologists (56 total cases). Thrombus presence, reviewer confidence and management decisions were compared before and after contrast.

Results: In 19 cases, cardioversion was recommended following contrast administration which was not previously recommended (p < 0.0001). Reader confidence improved in 35 cases (63%, p< 0.0001). Further diagnostic testing including cardiac magnetic resonance imaging, cardiac computed tomography and repeat TEE was avoided in 57% of cases using CEUS. There were no adverse neurologic events in the 14 patients included, of which only 1 patient was confirmed to have a left atrial appendage thrombus. A cost-benefit analysis showed a savings using contrast ($227/patient).

Conclusion: Contrast enhanced TEE changes management and improves reader confidence while providing a reduction in unnecessary diagnostic testing, expense and time to cardioversion.