



Valvular Heart Disease

INTER-STUDY REPRODUCIBILITY OF MITRAL REGURGITATION QUANTITATION USING CARDIAC MAGNETIC RESONANCE IMAGING

Poster Contributions  
Poster Hall, Hall C  
Friday, March 17, 2017, 3:45 p.m.-4:30 p.m.

Session Title: Valvular Heart Disease: Mitral Valve Disease  
Abstract Category: 36. Valvular Heart Disease: Clinical  
Presentation Number: 1145-028

Authors: *Nickalaus L. Gramze, Mohammad Khan, Eric Yang, Kyle Autry, Jeremy Hinojosa, Corinne Bontiff, Farzan Hassan, Michael Reardon, Stephen Little, William Zoghbi, Faisal Nabi, Dipan Shah, Houston Methodist Debakey Heart and Vascular Institute, Houston, TX, USA*

**Background:** In patients with chronic mitral regurgitation (MR), accurate and reproducible quantification of MR severity is important for serial assessment. While echocardiography is the primary modality used, it has modest inter-study reproducibility. Cardiac magnetic resonance imaging (CMR) has been shown to have favorable reader variability (intraobserver and interobserver), but there is no data on the overall inter-study reproducibility which incorporates both reader and acquisition variability.

**Methods:** Twenty patients with MR were prospectively enrolled and underwent an initial CMR followed by a repeat CMR on the same day. MR was quantitated by subtracting the greater of aortic or left ventricular outflow tract flow from the left ventricular stroke volume determined volumetrically using standard CMR protocols. The two studies for each patient were anonymized and randomized before interpretation by a single blinded reader.

**Results:** Results show no measurement bias between regurgitant volume assessments. Upper and lower limits of agreement were 8.8 mL at the 95% confidence interval with an intraclass correlation coefficient of 0.975 (figure).

**Conclusions:** CMR shows excellent inter-study reproducibility in the sequential assessment of MR. This has important implications as the era of transcatheter mitral valve interventions evolve and the desire for serial assessments of MR are used as markers of therapeutic effectiveness.

