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Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

THE USE OF SPECKLE TRACKING STRAIN TO PREDICT RECOVERY OF LEFT VENTRICULAR FUNCTION AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT

Poster Contributions

Poster Hall B1

Sunday, March 15, 2015, 9:45 a.m.-10:30 a.m.

Session Title: Non Invasive Imaging: Strain Imaging by Echocardiography

Abstract Category: 17. Non Invasive Imaging: Echo

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Background: Transcatheter aortic valve implantation (TAVI) has broadened treatment options for high-risk patients with severe aortic stenosis. The 1-year mortality after TAVI has been described to be 24-30%. Improved pre-procedural testing is needed to better determine those most likely to benefit from TAVI. The purpose of this study was to evaluate the predictive value of pre-procedural speckle strain in patients undergoing TAVI.

Methods: All patients with a depressed ejection fraction (< 50%), who underwent TAVI over a 1 year period were included. Pre- and 1 month follow up ejection fraction (EF), global longitudinal strain (GLS), and global radial strain (GRS) were compared. A significant improvement in left ventricular function was designated to be $\geq 5\%$ increase in EF and ≥ -2 in GLS.

Results: Nineteen subjects met inclusion criteria. The average baseline EF was 34%. At one month follow up, 47% (9/19) had a significant improvement in EF, and 42% (8/19) had improvement in GLS. All subjects with a baseline GLS > 10.5 had a significant improvement in EF (n=6/19). All subjects with a baseline GRS > 30 had a significant improvement in EF (4/19). No subject with a baseline GLS < 5.7 had a clinically significant improvement in EF or GLS at 1 month (n=2/19).

Conclusion: The use of advanced left ventricular systolic metrics, such as global longitudinal strain and global radial strain, may help predict those most likely to have recovery of left ventricular function after TAVI.

