**SPECKLE TRACKING ECHOCARDIOGRAPHY PREDICTS OUTCOMES IN CHRONIC AORTIC REGURGITATION**

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Objectives: We tested if myocardial deformation imaging using speckle tracking echocardiography would predict outcomes in chronic aortic regurgitation during conservative management and after surgery.

Background: The clinical value of speckle tracking echocardiography for detecting clinically important left ventricular (LV) dysfunction in chronic aortic regurgitation has not been established.

Methods: We included 64 patients with moderate to severe aortic regurgitation. 35 patients were managed conservatively and followed for an average of 19 +/- 8 months, while 29 patients underwent surgery for the valve lesion and were followed 6 months post-operatively. Baseline LV function by speckle tracking echocardiography was compared with impaired outcome after surgery (defined as persisting symptoms, or persisting left ventricular dilatation [LVEDVI >= 87 mL/m2] or dysfunction [LVEF < 50%]), and with disease progression during conservative management (defined as development of symptoms, increase in left ventricular volume > 15%, or decrease in LVEF > 10%).

Results: Reduced myocardial systolic strain, systolic strain rate, and early diastolic strain rate by speckle tracking echocardiography was associated with disease progression during conservative management (p = 0.02, p = 0.02, p = 0.002, respectively), and with impaired outcome after surgery (p = 0.01, p = 0.04, and p = 0.01). Conventional parameters of LV function and size (LVEF and LVEDVI) were not associated with outcome during conservative management (p = 0.57, p = 0.39).

Conclusion: Speckle tracking echocardiography is clinically useful for early detection of LV systolic and diastolic dysfunction in chronic aortic regurgitation.