Reviewer's report

Title: Reduced global longitudinal strain in association to increased left ventricular mass in patients with aortic valve stenosis and normal ejection fraction: A hybrid study combining echocardiography and magnetic resonance imaging

Version: 1 Date: 21 July 2010

Reviewer: Alessandro Pingitore

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The results of this study show that global longitudinal strain is reduced in asymptomatic patients with aortic stenosis and that this reduction correlates with the severity of left ventricular hyperthrophy. The authors concluded that LVM and GLS might be useful for the early, subclinical identification of left ventricular dysfunction.

The evidence that GLS is reduced in AST patients has been already documented by previous studies. The novelty of this study is the relationship between LVM and the reduction of GLS. However the number of patients with increased LVM is too low. A larger number of these patients should be enrolled to strengthen this result. Another major question is that in the method section, EF < 55% is considered an exclusion criteria. This means that patients with moderate to mild, and thus overt, left ventricular dysfunction have been enrolled. This is in contrast with the goal of the study that is the early, non-overt, detection of left ventricular dysfunction. Please clarify this point and exclude patients with EF < 55%.

Minor points
Radial strain has not been defined in the method. Please define it.
Follow up should be completed in all the enrolled patients.

Results
Was peak radial strain higher in control group than in ATS patients?

Discussion
The evidence that radial strain increased in ATS patients without than in those with increased LVM should be discussed. This may be a compensatory mechanism as documented in other disease with reduced GLS.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

'I declare that I have no competing interests’