Reviewer's report

Title: Carotid artery intima-media thickness is closely related to impaired left ventricular function in patients with coronary artery disease: a single-centre, blinded, non-randomized study.

Version: 1 Date: 26 May 2014

Reviewer: Francesco Stea

Reviewer's report:

Major Compulsory Revisions
- It is not clear if the paper is about the correlation between IMT and LV function measured with strain echo, or about the correlation between strain and extent of CAD. A proper working hypothesis is not clear. The clinical meaning of the investigation is not clear.
- The paper adds little to the well known subject of atherosclerosis being a systemic disease, i.e. presence of atherosclerosis in one district is correlated to presence of atherosclerosis in another, and to the well known subject of carotid IMT being a predictor of CVD.
- No references or sources for a validation of 2D-STE and layer-specific analysis are provided.
- Poor physiopathological explanation are provided for a correlation of IMT with LV function (and why it has been investigated).
- "LV function" is more than just strain. Strain measures a component only of LV function. This should be clearly stated.
- How is IMT measured? With the standard caliper? It has poor resolution and poor reproducibility, especially if plaques are included and the maximum value is considered. Moreover, simple intima-media thickening and atherosclerotic plaques are not interchangeable neither from a physiopathological, clinical or anatomo-pathological point of view. A thickness of 2.88 mm is definitely a plaque.
- Considering "significant" a coronary stenosis of 50%, and putting the patient in the same category as an occluded artery, irrespective of clinical status, is debatable.
- Page 7, Discussion, line 2: the investigation does not deal with "ischemic injury".

Minor Compulsory Revisions
- Page 3, line 5: "minimal cardiovascular resistance" is not clear.
- A comparison with the behaviour of ejection fraction should be made.
- Page 4, lines 1-2: patients' characteristics should be in the Results section.
- Page 4, carotid ultrasound, and figure 1.2: the 45 degrees tilting is mentioned in
the text but in the figure the head is vertical.
- Table 2: columns and rows should be swapped.

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests