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: 2 June 2014

Reviewer: Piotr Lipiec

Reviewer's report:

This is an interesting, well-conducted study and a well-written manuscript. However, there are some issues to consider.

Major Compulsory Revisions

1. The selection process of patients included in the study group is unclear. The authors state that they assessed 31 consecutive patients between Sept 2010 and Jan 2012 (over 15 months) who met the inclusion criteria (a history of angina and positive ECG exercise test). Does it mean that there were on average only 2 such patients per month in Authors' institution? The issue of selection process is important because it may potentially be associated with selection bias, which would limit applicability of study results to a larger patient population.

2. All patients underwent coronary angiography – my understanding is that the decision to perform this examination was made in each case before the inclusion in the study. Was it also an inclusion criterion? Or was the coronary angiography a part of the study protocol? Again, this issue is associated with potential selection bias and therefore should be clarified.

3. Authors provided results of layer-specific speckle tracking analysis (in 3 separate layers of the myocardium). However, not all vendors offer possibility of layer-specific speckle tracking in their software packages. Therefore, I believe that providing results of longitudinal strain measurement of the whole thickness of the myocardium would increase scientific value of this paper.

4. This study is composed of three parts: A/ correlation between LV strain measurement and IMT B/ correlation between LV strain measurement and coronary angiography results C/ correlation between IMT and coronary angiography results. I believe parts A and B are especially interesting. However, the title of the manuscript and Conclusions section of the abstract reflect only part A. Furthermore in the Results section of the manuscript there is no clear division between these three parts. I suggest expanding the Results section and dividing it into two or three parts.

Minor essential revisions

1. I could not find the website www.openepi.org Instead I found www.openepi.com

2. I suggest removing the phrase “Adjustments were made for hypertension,
smoking, hyperlipidemia, diabetes and BMI.” from the Methods section of the abstract. This information is repeated in the Results section: “also when adjusted for hypertension, smoking, hyperlipidemia, diabetes and BMI.”. Instead I suggest expanding the Results section of the abstract.

3. I believe a figure with an example of layer-specific strain analysis would increase the value of the manuscript.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

Speaker fees from GE and Philips.