**Reviewer’s report**

**Title:** Echocardiography may be usefel to detect pulmonary vasculopathy in early stage of pulmonary artery hypertension associated to systemic sclerosis

**Version:** 1  **Date:** 15 March 2010

**Reviewer:** Luna Gargani

**Reviewer’s report:**

This paper deals with a very important topic, since the possibility to provide early diagnosis of PAH in SSc would be of tremendous impact on the history of the disease.

However, results are not presented in a very logical way. Therefore, as they are expressed now, they do not completely fit with the conclusions. My main concern is that the text has been submitted without a final check. Thus, it is full of misspellings, incorrect use of acronyms, wrong punctuation, etc.

Moreover, it needs a revision by an English mother-tongue.

Some examples:
- Abstract, Introduction: “may be detect” should be “may be detected”;
- Abstract, Methods: “we performed” should be “were performed”;
- Abstract, Results: “The right catheterization detect” should be “The right catheterization detected”;
- Abstract, Results: “PAPm mean” should be “mean PAPm”;
- Abstract, Results: “4 patients did not evidence of PH” should be “4 patients did not show evidence of PH”;
- “The coronary angiogram carried out on patients over 50”, please add “year-old”;
- “mm/Hg” should be “mmHg”.

Please remove Limits, Data Analysis and Clinical and instrumental features from the abstract, and include PASP and TAPSE values in the Results section.

**INTRODUCTION**

- Please provide a more established definition of SSc (“antibodies” is too generic, “to a production of fibroblasts” is wrong). It is clear that the Authors know the definition of the disease, but it is poorly expressed.

- According to 2009 guidelines, the definition of PAH is based only on mean PAP values. Please remove PASP.

- “in reading”, should be “in scientific literature”.

- Please call the echocardiography exam always in the same way.
METHODS

- You’ve previously written that there are 19 female patients, and now you state they are 18. Please correct.

- What dose Rheumatology Guidelines mean here? If you mean that diagnosis has been made according to Rheumatology Guidelines, please tell it more clearly, and specify which Rheumatology Guidelines you are referring to.

- Doppler Echocardiography section: please provide specific references for every measurement and, when available, reference to European Association of Echocardiography or American Society of Echocardiography recommendations papers.

- “(v.n.< 18mm >50%)”: it is not clear what you mean. Please specify.

- You define ACT as belonging both to pulmonary outflow and to right ventricular outflow tract. The last one is more established and, actually you put the pulsed-wave Doppler at the right ventricular outflow tract. Please modify it.

- Respiratory Function Test are told to have been carried out, according to international recommendation. Please provide reference.

- Maximum expiratory volume at 1° second (FEV1): it should be “forced” not maximum.

- The coronary angiogram will be undertaken in patients over 55 years old” should be “The coronary angiogram has been undertaken in patients over 55 year-old”.

- The sentences “The right catheterization is in fact fundamental in the evaluation of patients with pulmonary hypertension because it allows us to confirm the presence of pulmonary hypertension. The measurement of the pressure of the pulmonary occlusion, however, permits the identification of the pulmonary pressure site and to make a diagnosis of the pulmonary hypertension site (pre/post capillary)” cannot be included in the Methods section. They are part either of the Introduction or of the Discussion.

RESULTS:

- The sentence “19 female patients aged between 28 and 75 with a verified diagnosis of Systemic Sclerosis (Rheumatology Guidelines) were evaluated” is already present in the Methods.

- The section “Echocardiographic data” is not clear at all. What do you mean by “a change”?

- What do you mean by “some evidence of significant coronary artery disease.”? Please specify.

- For all correlations, please provide also an R value, to let the reader understand also the strength of correlation

- Please put all the echo data in the “Echocardiographic data” section, and not in the “Right heart catheterization data” section.

- Since the patients are a few, please provide a table with all echo and right heart
In order to better understand the kind of correlation between the echo measurements and the invasive ones, catheter values are needed.

**DISCUSSION:**

The discussion should be changed. It should be focused on the more controversial aspect of this issue: according to recent 2009 guidelines, we are not allowed to diagnose pulmonary hypertension only by means of echo. Expand this concept, trying to explain why and when a non-invasive evaluation could be useful, and why guidelines have changed since previous edition.

- PASP cut-off values is another unresolved, controversial aspect. Please address it.

- Please do not repeat sentences already present in the Results section (i.e. Mean ACTpo and PVR were 117 msc and 3.31 U.W. respectively by echo Analyze. PAP media and PVR were 30.5mm/Hg, 3.2 U.W. respectively at right heart catheterization. A good correlation was between PVR eco vs PVR emo).

- “PVR eco vs PVR emo” is somewhat Italian. Please change it.

References: please unify the format and correct all misspellings.

Figures and tables should be separated, and tables should not be in power point format and not in Italian.

Figure 1 and 2 could be eliminated.

Figure 2, you can put the formula in the Methods section.

Figure 11: please correlate echo-derived PVR to invasive PVR and not only to ACT.

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

**Quality of written English:** Not suitable for publication unless extensively edited

**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.