Reviewers report

Title: Effects of Ultrasound and Ultrasound Contrast Agent on Vascular Tissue

Version: 1 Date: 28 December 2011

Reviewer: Serena Del Turco

Reviewers report:

Major revisions

1) In the abstract: “a distinct loss of endothelium was observed”. A “loss of endothelium” means “detachment of endothelium”, but results did not demonstrated this. The loss of integrity of endothelium would implicate no vasodilator response to stimuli, among them acetylcoline or sodium nitroprusside.

2) In the abstract: “Aortas treated with both US and Optison were unable to relax” is not correct. In fact the authors found a reduced response to achetylcoline after treatment with US and optison, as explained in the Result section.

3) The Fig. 4-5 show a reduced vasodilator response to acetylcoline after treatment with US and optison. However, these results do not demonstrate that the impairment in acetylcoline-mediated vasodilatation is due to decreased of NO biodisponibility, as the authors suggest in the Result section. Relaxation of arteries by acetylcholine is due not only to the release of NO from endothelium, but also by other mediators (prostanoids...). The experiments should be performed in presence of L-NMMA to increase the relevance of the author’s observation.

4) H&E-stained aortic segments without alterations in morphology of aortas (Figure 6) is a sign of endothelial integrity. In the Result section the authors suggest that reduced expression of endothelial markers is index of loss of endothelial integrity ? The results are conflicting. How this can be explained?

5) How much time aortas sections were stained for endothelial markers after US+optison treatment ?

4) Throughout the manuscript some terms such as “loss of endothelium or loss of endothelial integriry” are used in uncorrected manner. This is confusing and needs to be changed.

Minor Essential Revisions

Figure 3: please correct the numeration of panels.

Figure 9: please explain what the arrows indicate.

Figure 8-9: these figures must be reformatted. In particular, the test must have same font and size, the images must have the same dimensions.
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.