Reviewer's report

Title: Augmentation index assessed by applanation tonometry is elevated in Marfan Syndrome

Version: 1 Date: 29 June 2007

Reviewer: Pierre Boutouyrie

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General
Dear editor, hello. Here is my review, a little late, I am sorry. Best regards. Pierre BOUTOUYRIE

1. Is the question posed by the authors new and well defined?
The question of large artery haemodynamics in Marfan syndrome is an important one and well defined. This is not completely new, however, the authors investigate new parameters and have nice results.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?
They used gold standard technique to investigate their patients. They used a pharmacological test in addition (GTN) which is excellent.

3. Are the data sound and well controlled?
Here I am more critical. This is strange to have 10 controls and 11 subjects. I would ask to make a 1 to 1 matching on sex and age, and to perform paired comparison, which is standard for that kind of study, and would partially compensate for the small number of observations.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data?
Not really, the conclusion is that Aix is more sensitive to vascular abnormalities present in MFS than central PP or PWV. This is not
absolutely
clear. These 3 measures are inter-related. Moreover, most (if not all) patients were treated with betablockers which are known to increase Aix. Even if treatements were stopped 48h prior the study, this could have pushed the Aix index for higher significance. I believe that analysis should be performed in the 10/10 set of patients, with paired analysis.

Furthermore, it is said that Central PP did not influence aortic root size. The authors should precise whether aortic root size was normalized to BSA, and whether the analysis was performed separately in controls and in Marfan. This is important since a previous paper has shown that PP could have opposite effects in MFS and controls on aortic size, and a global analysis (such as performed for PWV, AI and PP) could not identify this.

Finally, the transfer function is said not to differ between MFS and Co. This is true from a statistical point of view, but not evident on the graphic. Here, the lack of power is a clear problem, and I would be more prudent with this statement.

6. Do the title and abstract accurately convey what has been found? Not completly, see previous paragraph. I think that a conclusion and a title which do not oppose Aix with the other large artery parameters should be preferable.

7. Is the writing acceptable? Excellent

Minor points : I would like to see the xy plot of PWV, AIX and Ppcarotid versus aortic root size/BSA, with indivialisation of patients groups.

- Major Compulsory Revisions

Pr Pierre BOUTOUYRIE MD. PhD.
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Service de Pharmacologie, Unité de Pharmacologie clinique
Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

**What next?:** Accept after discretionary revisions

**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.