Reviewer's report

Title: BRG1 overexpression in smooth muscle cells promotes the development of thoracic aortic dissection

Version: 1 Date: 10 July 2014

Reviewer: John A. Elefteriades

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Major Compulsory Revisions

Is the difference in BRG1 the cause or the result of dissection? In other words, did this state exist prior to dissection?

Could the inflammatory state after aortic dissection produce the findings you noted? Does BRG1 increase in inflammatory states?

Are aortic SMCs really “responsible for the tensile strength and elasticity of the aortic wall”? Do you mean directly responsible via their intrinsic mechanical properties, or rather through their synthetic products?

How could the “age, gender, smoking status, hypertension or diabetes” be the same between organ donors and the dissection group? This would be very surprising. Please provide the exact numbers in tabular form.

RNAs are notoriously unstable. What was the interval from onset of dissection to operation and harvesting of the specimens? What was the interval and storage method from the time of harvesting until analysis? Were the intervals the same in dissectors and controls?

Your findings relate to tissue samples. Of course, we cannot obtain tissue samples of the aorta at intervals for clinical evaluation of patients. So, how should we use your data clinically?

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: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.