Reviewer's report

Title: Secondhand smoke exposure toxicity accelerates age-related cardiac disease in old hamsters

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Reviewer: haixia wang

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In this manuscript, the authors studied the effects of second hand smoke exposure on aging hamsters. They found that both young and aged hamsters exposed to SHS exhibited increased heart hypertrophy but after exposure to second hand smoke, the concentric LVH markers only increased in young treated hamsters and declined in aged hamsters. In contrast, eccentric LVH markers increased in aged treated hamsters. They also found that Pro-inflammatory protein levels increased in aging hamsters exposed to second hand smoke.

Those results are very interesting. However, they are too preliminary to draw their conclusions. For example, in figure 2, they said that “MEK1-ERK1/2-GATA4 signaling pathway in male young exposure to SHS promotes left ventricular concentric hypertrophy”. But the data only showed that p-ERK, pMEK1 and Gata4 protein levels increased in young treated animals. It may be the final output and we cannot conclude that MEK/ERK pathway promotes concentric LVH in young animals based on these data only. The same problems are in the figure 3 and figure 4. In addition, to confirm LV concentric and eccentric hypertrophy, ultrasound examination and images should be included too.

Minor points:
Needs some language corrections before being published

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests