**Reviewer's report**

**Title:** Granulocyte colony-stimulating factor attenuates myocardial remodeling and ventricular arrhythmia susceptibility via the JAK2-STAT3 pathway in a rabbit model of coronary microembolization

**Version:** 0  **Date:** 15 Sep 2019

**Reviewer:** Yuqian Bao

**Reviewer's report:**

In this study, coronary microembolization (CME) rabbit model was used to explore whether G-CSF affects myocardial remodeling and ventricular arrhythmias susceptibility via JAK2-STAT3 pathway. The rabbits were divided into four groups, namely, Sham, CME, G-CSF and AG 490. The results showed that G-CSF attenuate myocardial remodeling through JAK2-STAT3 pathway and thereby reduce ventricular arrhythmia susceptibility after CME. The current study has some problems as follows:

**Major:**

1. A related similar study was published by some of the authors in 2008, in which SD rats were used, and be divided into the same four groups (Sham, CME, G-CSF and AG490). The results showed that G-CSF attenuated myocardial apoptosis induced by CME via JAK2-STAT3 pathway. While in the current study, only the experimental animal model was changed from SD rats to rabbits, and included arrhythmia. Therefore, what is the specific new findings of the current research?

2. Methods part (Page 7, Line 138), it is stated that 0.25 mg/kg/d of AG490 was injected. Why is this dose selected since there's also related studies use 1 mg/kg in a rabbit model.

3. The results part (Page 13, Line 254) showed that the body weight of the CME group was significantly declined 2 weeks post-operation when compared with pre-operation and other 3 groups. Why choose 2 weeks post-operation? What if the observation duration extended or shortened?

4. The workload of the current study is considerable, confirming that G-CSF reduces myocardial remodeling, as well as the susceptibility to ventricular arrhythmias after CME through the JAK2-STAT3 pathway. However, what is the significance of clinical application of this study?

**Minor:**
1. The figures, it's better to delete the "group" of the group names in the abscissa, e.g., turn "Sham group" to "Sham".

2. Figure 1, the authors only compare the results between groups post-operation, while lacks of the comparison between pre-operation and post-operation

3. Please confirm whether the statistical difference is between AG490 and CME, or between AG490 and Sham group in Figure 2E.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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Please indicate the quality of language in the manuscript:

Acceptable

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