Reviewer's report

Title: ACTN3 R577X polymorphism and long-term survival in patients with chronic heart failure

Version: 2  Date: 31 May 2014

Reviewer: Daowen Wang

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Major Compulsory Revisions:
1. Please indicate the study have sufficient samples size to get all the robust results. It would be appropriate to give a description of the power calculation with the QUANTO program or other software in the statistical analysis section.

2. The author intended to present this polymorphism as a biomarker to predict the prognosis of heart failure. To confirm this result, a validation in a second population is needed. Additionally, it will be better if the author could evaluate the sensitivity and specificity of the biomarker by some way, for example, the Received Operator Curve (ROC).

Minor Essential Revisions:
1. In this prospective cohort study, the Cox proportional-hazards model was used to investigate the risk factors of all-cause mortality for patients with heart failure including the R577X polymorphism. The author showed X allele carriers had a higher risk of mortality (HR 1.72, 95% CI 1.14- 2.62, p=0.01). It should be elucidated more clearly whether the hazard ratio has been adjusted for the confounders, especially hemoglobin, creatinine, LVEF, and the etiology of hypertension that have been approved to affect the mortality risk of heart failure.

2. The median follow-up time and dropout rate should been explicitly given in the manuscript in order to evaluate the integrity and reliability of the follow-up information.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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