Reviewer’s report

**Title:** Association between chymase gene polymorphisms and atrial fibrillation in Chinese Han population

**Version:** 0  **Date:** 22 Jul 2019

**Reviewer:** Evan Thacker

**Reviewer's report:**

The authors analyzed 126 cases of lone AF and 120 controls, with genotyping of five SNPS in the chymase gene. The authors found an association of one of the SNPS, rs1800875, with lone AF, and no associations for the other four SNPs.

**MAJOR COMMENTS:**

None. Nice paper. The research question was well justified, the approach was appropriate, the findings were presented clearly, the strengths and limitations were noted, and the conclusions were supported by the findings.

**MINOR COMMENTS:**

1. In the Abstract, consider adding more numerical results (odds ratios and 95% CIs) to the Results paragraph.

2. In the Methods section, consider explaining how the controls were selected and recruited. Is there good reason to believe that the controls are representative of the population that gave rise to the cases, at least with respect to chymase SNP genotypes?

3. In the Results section, paragraph about genotype and allele frequencies, the authors state that all SNPS were in Hardy-Weinberg equilibrium (p > 0.05). However, in Table 2, rs1800876 in AF cases has p = 0.0190 for H-W equilibrium. I suggest the authors resolve this seeming discrepancy.

4. In the Discussion section, first paragraph, it is not clear why the sentences at the end of the paragraph about triglycerides, LDL-C, and total cholesterol were included. It seems that those sentences could be omitted from the paragraph.

5. Table 2, as presently formatted, is somewhat difficult to read due to the spacing and text wrapping. Consider formatting this table in a wider format, in landscape orientation, so that the text within cells will not wrap, and the table will be easier to read.
6. In Table 2, the authors presented odds ratios as [odds of minor allele among controls] / [odds of minor allele among cases]. I suggest flipping this to the inverse: [odds of minor allele among cases] / [odds of minor allele among controls]. And then re-interpret the results accordingly. Currently, for rs1800875, the table shows that the odds of having (A/A or A/G) vs (G/G) are 2 times as high for controls as for cases. But it would be more clear to show the inverse - that the odds of having (A/A or A/G) vs G/G are half as high for cases as for controls. In other words, compare the cases to the controls as referent, rather than comparing the cases to controls as referent. The A allele is inversely associated with AF; the G allele is positively associated with AF.

7. In Table 2, consider re-ordering the rows so that the five SNPs appear in the same order as in the haplotype analysis in Table 3.

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.

I am able to assess the statistics

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Please indicate the quality of language in the manuscript:

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