Reviewer's report

Title: Novel GATA4 promoter mutation associated with congenital heart disease in South Indian patients

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Reviewer: Cecilia Vecoli

Reviewer's report:

Mattapally et al. studied the GATA4 mutations associated with congenital heart disease in South Indian patients. Some important concerns are reported below.

Major Compulsory Revisions

Which is the novel promoter mutation reported in the title? Which its functional/clinical significance?

The conclusions show nothing new.

The paper is not clear and the results are confused. In table 2, the allelic distributions of 5 polymorphism among patients and controls has been reported. Why since in table 3, all the SNPs are reported?

Only 3 patients had SV and were not further analyzed. Why have they been sequenced? In table 2 the allelic distributions of polymorphisms among patients and controls has been reported splitting the patients according to three pathologies. Why? Do the authors think that these 3 diseases could have a different GATA4 genetic variants-dependent etiology? If yes, 33/32/32 patients for disease are a too small numbers. If no, the authors should performed a single analysis including all 100 patients (including the SV ones).

Tests of Hardy Weinberg equilibrium revealed that more variants violated the equilibrium at the p < 0.05 level. Thus these polymorphisms should be excluded from further analysis.

Similarly, the five SNPs in the 3'UTR region did not satisfy the HW.

Minor Compulsory Revisions:

The introduction should be more focused. Too many figures and Tables have been reported. i.e. Figures 2 and 3 do not help support or explain the text and needs either significant revision or to be removed.

At pag. 9, the analysis of parents’ samples appeared: why? How many parents did you have analyzed?

Statistical analysis is a title of Methods. It is not used for labeling a result section.

All the references have to be reported as request by the Journal style i.e. ref34
It is enough to indicate the use of Plink software in the Statistical analysis sections (not in the mutational analysis too).

**Level of interest:** An article of limited interest

**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