Reviewer’s report

Title: Long-term follow-up in adults after tetralogy of Fallot repair.

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Reviewer: Lamia Ait Ali

Reviewer’s report:

In this study, the authors evaluate the late follow-up of repaired Tetralogy of Fallot. They focused their study in the population, which was not re-operated yet. The topic is of interest however, the study present many limitations and some, majors and minors, comments have to be addressed.

Abstract: In echocardiography ejection fraction of the right ventricle (RV), measured in CMR, negatively correlated with RV diameter measured in echocardiography (r=-0.31; p=0.01; r=-0.38; p=0.003; r=-0.29; p=0.02, respectively)). I think that there is a mistake in the sentence In echocardiography ejection fraction of the right ventricle (RV), measured in CMR moreover the correlation between the RVEF and RV diameters did not add any useful information to the manuscript

Method section

Population study: the authors enrolled retrospectively patients from the outpatients registry or from CMR population? It is important to precise to understand the selection bias.

The electrocardiographic (ECG), cardiopulmonary exercise testing (CPET), echocardiographic and cardiac magnetic resonance (CMR) data for all the patients were reviewed retrospectively. Assessment of ECG, CPET, echocardiography and CMR were reviewed in patients who did not undergo pulmonary valve replacement. what did the authors mean in the second sentence? they already stated in the first one that they review the data in all patients?

Echocardiography: Please review the references 13 : is no guideline

Results

The mean patients age of initial operation was 5.3±6.2 years , instead of initial operation I suggest intracardiac repair, as the distribution of the age at repair is probably not normal, I suggest to report the median and IQ or median and range.

To the further analysis 83 patients (76%) who did not undergo PVR were included. Did any patient of this population have the criterias for reintervention at the time of the study?
In the reoperated patients population the data reported are referred to before rentervention of after.

Table1: some parameters are missing, type of intracardiac repair, previous shunt, NYHA,

The patients with less than 25 years since the repair had significantly larger right and left atria than did the patients operated before that time. I think there is a mistake, from the table patients less that 25 years have a smaller atria

Among all the patients, ejection fraction of the right ventricle, measured in CMR, negatively correlated with right ventricle diameter measured in echocardiography (r=-0.31; p=0.01; r=-0.38; p=0.003; r=-0.29; p=0.02. Also, end-diastolic volume of the right ventricle and pulmonary regurgitant volume positively correlated with right ventricle outflow tract diameter (r=0.54; p<0.001) and (r=0.53; p=0.005). I am not sure that those correlations are useful for the aim of the study, what did thoses informations add, It's well established that pulmonary regurgitation correlate with RV volumes..

Table 3

TV gradient max is very small Is it the velocity?

LVD are smaller that LVS, please correct

What do you mean by RVD2 and RVD3

Table 4:

LVD in CMR is not useful

I suggest to report indexed LV volumes and mass, and also indexed RV systolic volumes and mass

It's interesting to note that despite a mean severe pulmonary regurgitation the mean RV volumes is almost normal, did the authors know how many patients have a restrictive RV physiology,

Ventricular tachycardia and the need to use beta blocker medications were significantly more frequent in patients who were <25 years since the repair as compared to operated later (13 vs 70; p=0.002 and 40 vs 43; p=0.003, respectively). In the figure 2, is the opposite

In our cohort, exercise performance in both groups did not have significant differences in rates of reoperation. age of reoperation? what do you mean, which data support this?

A limitation paragraph is needed listing the limitation and bias of the study (retrospective, small sample, selection bias ad so non), moreover this is not a follow-up study but a cross sectional
one, as the parameters and, I presume, also the history of adverse event was collected at the time of patient enrollment

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