Exercise capacity and biventricular function in adult patients with repaired tetralogy of Fallot.

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INTRODUCTION: 
Adult patients with repaired tetralogy of Fallot (rTOF) often have diminished right ventricular function and/or significant pulmonary regurgitation. Our aim was to examine whether these abnormalities play a role in diminution of exercise function in patients with rTOF.

METHODS: 
This was a retrospective review of 46 adult patients with rTOF. Right ventricular function (RV) and pulmonary regurgitation (PR) were assessed echocardiographically and by cardiovascular magnetic resonance (CMR). Peak oxygen consumption (peak VO\(_2\)), predicted Vo\(_2\)max for age and sex and ventilatory efficacy were measured by cardiopulmonary exercise test. All patients were clinically stable, their investigations were done within 1 year.

RESULTS: 
The mean age of the cohort was 28 +/- 9 years (48% females). Seven patients had PM/ICD. Seventy percent of patients (n=33) were asymptomatic (NYHA class I). The mean peak Vo\(_2\)max was 24 +/- 6 ml/hg/min, predicted peak Vo\(_2\)max 69 +/- 17% and VE/VCO\(_2\) slope was 30 +/- 5. There were 27% of patients with ≥ moderate right ventricular dysfunction and 72% with ≥ moderate pulmonary regurgitation. There was no significant difference between mean peak Vo\(_2\)max (25 +/- 5 vs. 23 +/- 6 ml/hg/min, p=0.43), predicted peak Vo\(_2\)max (69 +/- 17% vs. 67/18%, p=0.86) and VE/VCO\(_2\) slope (30 +/- 5 vs 29 +/- 6, p=0.87) in patients with or without RV dysfunction and/or PR.

CONCLUSIONS: 
Our data suggest that in a young, mostly asymptomatic cohort of patients with repaired tetralogy of Fallot at least moderate RV dysfunction and/or moderate pulmonary regurgitation exercise capacity may be preserved.