

WALKING POSTER PRESENTATION

Open Access

Importance of hemodynamic RV and LV parameters and CPET-results in patients with Tetralogy of Fallot

Christian Meierhofer^{1*}, Timon-Amir Tavakkoli¹, Andreas Kühn¹, Alfred Hager¹, Jan Müller¹, Stefan Martinoff², Peter Ewert¹, Heiko Stern¹, Sohrab Fratz¹

From 18th Annual SCMR Scientific Sessions
Nice, France. 4-7 February 2015

Background

Good quality of life correlates with a good exercise capacity in daily life in patients with Tetralogy of Fallot (TOF). Patients after correction of TOF usually develop residual defects as pulmonary regurgitation or pulmonary stenosis

of different severity. We investigated the impact of several hemodynamic parameters measured by cardiovascular magnetic resonance (CMR) and echocardiography and analysed these data together with results of cardiopulmonary exercise testing (CPET) of these patients.

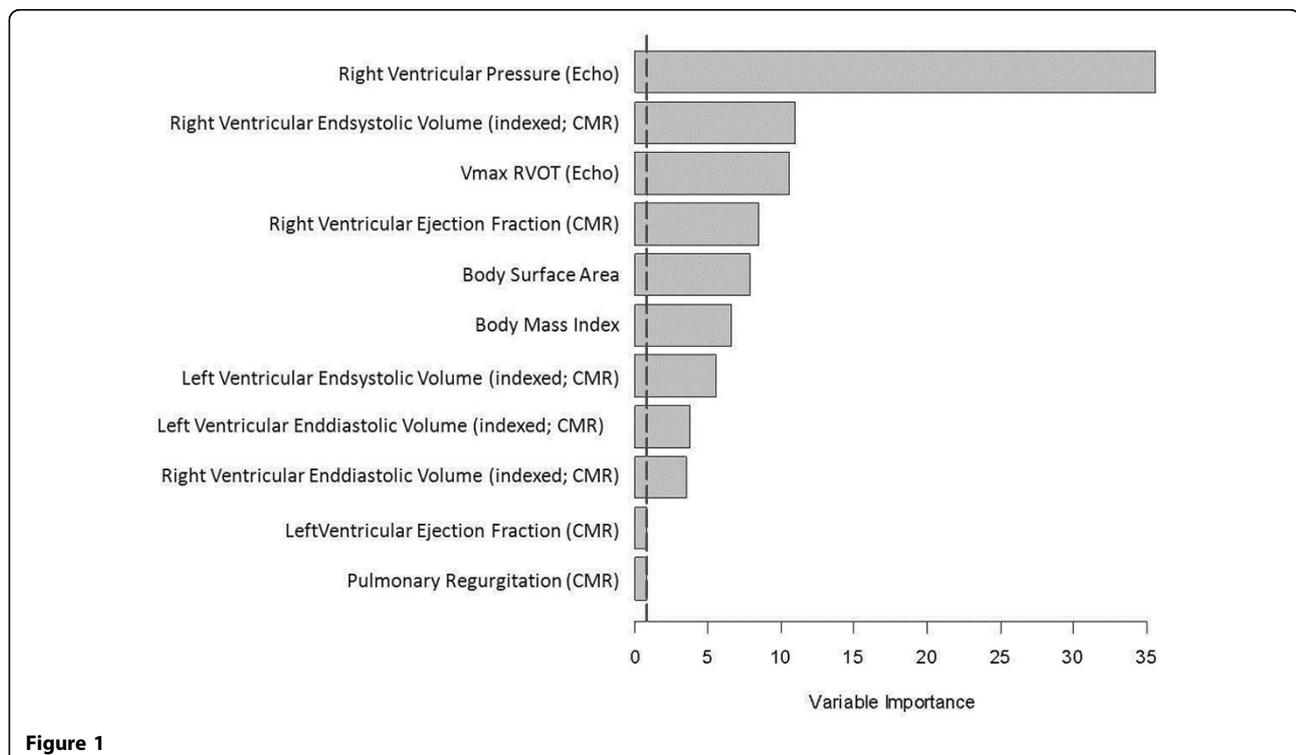


Figure 1

¹Deutsches Herzzentrum München, Pediatric Cardiology and Congenital Heart Disease, Munich, Germany
Full list of author information is available at the end of the article

Methods

136 consecutive patients with TOF were tested during routine follow-up with CMR, echocardiography and CPET. Right and left ventricular volume data, ventricular ejection fraction, pulmonary regurgitation were evaluated by CMR. Echocardiographic pressure gradients in the right ventricular outflow tract (RVOT) and through the tricuspid valve area were measured.

All data were classified and correlated with the results of CPET evaluations of these patients. The analysis was performed using the Random Forest model (classification and regression model with measurement of variable importance through permutation). In this way we calculated the importance of the different hemodynamic variables related to the maximal oxygen uptake in CPET (figure 1).

Results

Right ventricular pressure showed the most important influence on maximal oxygen uptake, whereas pulmonary regurgitation and right ventricular end-diastolic volume were not important haemodynamic variables to predict maximal oxygen uptake in CPET.

Conclusions

Patients with TOF and elevated right ventricular pressure showed a reduced exercise capacity. Maximal exercise capacity was only weakly influenced by right ventricular enddiastolic volume and not at all by pulmonary regurgitation.

Funding

N/A.

Authors' details

¹Deutsches Herzzentrum München, Pediatric Cardiology and Congenital Heart Disease, Munich, Germany. ²Deutsches Herzzentrum München, Division of Radiology, Munich, Germany.

Published: 3 February 2015

doi:10.1186/1532-429X-17-S1-Q77

Cite this article as: Meierhofer et al.: Importance of hemodynamic RV and LV parameters and CPET-results in patients with Tetralogy of Fallot. *Journal of Cardiovascular Magnetic Resonance* 2015 **17**(Suppl 1):Q77.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit

