

**P1-132**

**Cardiopulmonary Capacity in Relation to Right Ventricular Function and Volume in Patients with Fallot Tetralogy**

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Introduction: Cardiopulmonary capacity, right ventricular volume and function play a key role in determining the indication and timing for pulmonary valve intervention in patients with Fallot tetralogy. Methods: Data of 47 patients (23 male, 49%) aged 26.6 (11-54)years, with Fallot tetralogy, who underwent cardiopulmonary exercise testing and MRI between May 2014 and September 2015 was analyzed. Measurements collected in MRI: right ventricular enddiastolic volume indexed to body-surface area (RV-EDV), RV-ejection fraction (RV-EF) and pulmonary valve regurgitation fraction (PV-RF). Maximum cardiopulmonary capacity (VO<sub>2</sub>max) was put in relation to predicted values according to Cooper and Weiler-Ravell.

Results: Mean VO<sub>2</sub>max of predicted was  $71.8 \pm 17,9$  % (range 43 – 122%). MRI data (mean and range: RV volume 114.3 (65.6 - 149.5) ml/m<sup>2</sup>. RV-EF: 47.3 (31.6 – 61.8)% and PV-RF 19.1 (1.0 – 43.0). VO<sub>2</sub>max shows no correlation to RV-EDV: Pearson correlation 0.134, P=0.379. Mean VO<sub>2</sub>max of predicted did not correlate to RV-EF: Pearson 0.028, P=0.855 nor did it correlate to PV-RF Pearson: 0.171, P=0.267.

Conclusions: RV endiastolic volume, RV Function and PV-Regurgitation measured in MRI are well established factors to make treatment decisions in patients with Fallot Tetralogy, but do not reflect the patient's present exercise tolerance in a group of patients with RV-EDV not exceeding 150ml/m<sup>2</sup>.