

Category : **Cardiovascular: Monitoring**

**A154 - Portal vein waveform may predict outcome in patients undergoing corrective surgery for tetralogy of fallot**

H Aggarwal<sup>1</sup>; G D Puri<sup>2</sup>; R Ganesan<sup>3</sup>; B Mandal<sup>4</sup>; RM Kumar<sup>5</sup>; SK Thingnam<sup>6</sup>

<sup>1</sup>Sector 12, Cardiac anaesthesia, Chandigarh, India, <sup>2</sup>Sector 12, Department of Anaesthesia and Intensive Care, Chandigarh, India, <sup>3</sup>Sector 12, Anaesthesia and Intensive Care, Chandigarh, India, <sup>4</sup>Sector 12, Anaesthesia and Intensive care, Chandigarh, India, <sup>5</sup>Sector 12, Cardiology, Chandigarh, India, <sup>6</sup>Sector 12, Cardiothoracic and vascular surgery, Chandigarh, India

### **Introduction:**

Right ventricle(RV) failure is common after corrective surgery for Tetralogy of Fallot (TOF) and is associated with significant morbidity and mortality. We aimed to determine whether an increased portal vein flow pulsatility fraction(PVPF) was associated with worse clinical outcome.

### **Methods:**

We conducted a prospective single-centre observational study in patients of all ages undergoing corrective surgery for TOF. PVPF and other commonly used parameters of RV function were assessed at 6 timepoints: intraoperatively: before and after bypass, postoperatively: days 1, 2, at extubation and at intensive care unit (ICU) discharge (timepoints 1 to 6 respectively). PVPFmax was defined as the maximum PVPF obtained in a patient at any time point. Correlation was tested between PVPFmax and mechanical ventilation duration, prolonged ICU stay and mortality

### **Results:**

The study included 54 patients of age 3[2,7] years (median[IQR]) and mortality was in 3 patients. PVPF measurement was feasible in 92.6% of the examinations. Mean values of PVPF was  $34.87 \pm 13.53$ ,  $47.24 \pm 18.66$ ,  $49.92 \pm 21.72$ ,  $43.07 \pm 19.14$ ,  $40.52 \pm 16.86$  and  $28.9 \pm 12.8$  at time points 1 to 6 respectively. There was weak correlation of PVPFmax with duration of mechanical ventilation and ICU stay ( $r=0.286$ ,  $p=0.036$  and  $r=0.296$ ,  $p=0.030$  respectively) and no correlation with mortality. There was a moderate negative correlation of PVPF with RV fractional area change and RV Strain ( $r=-0.488$ ,  $p<.001$  and  $r=-0.457$ ,  $p<.001$  respectively) and a strong positive correlation with abnormal hepatic vein waveform( $\rho=0.686$ ,  $p<.001$ ).

### **Conclusion:**

PVPF measurement is feasible in the pediatric cardiac surgery patient and an increased PVPF may be associated with right ventricular dysfunction and worse clinical outcome.