

**P-274**

**Safety and Efficacy of Catheter Interventions in Premature Infants Under 2 kg**

*Radtko W.A.K. (1), Bandisode V.M. (2), Bradley S.B. (2), Pizarro C (1)  
Nemours Cardiac Center, Wilmington, DE, USA (1); South Carolina Heart Center, Charleston, SC,  
USA (2)*

Premature infants with critical congenital heart disease pose difficult therapeutic problems: Surgery is associated with 1.5-3.0 times higher mortality and prolonged medical therapy to achieve weight gain does not improve survival. Therefore, we elected to perform early therapeutic or palliative catheter intervention. To assess safety and efficacy of this approach, we collected demographics, procedural parameters, results, complications and late clinical outcomes of all premature infants <2 kg undergoing attempted catheter intervention.

Interventions were attempted in 16 patients and accomplished in all. Access was from jugular or carotid cut-down in patients <1.5 kg, otherwise percutaneously from femoral vessels. Fluoroscopy times were 2.3-35.8 min (median 14 min). Balloon atrioseptostomy was performed in 1 (weight 1.6 kg). 3 patients underwent pulmonary balloon valvuloplasty (weight 1.0-1.98 kg) with no re-intervention during follow-up. 4 patients underwent aortic balloon valvuloplasty (weight 1.1-1.9 kg): no re-intervention in 1, one patient moribund at the time of procedure died the following day. One patient required repeat balloon valvuloplasty after 2.7 months and Ross operation after 4 years. This patient suffered right lower limb ischemia after initial femoral access and required foot amputation. One patient underwent Ross operation for endocarditis unrelated to the procedure after 4 months. 4 patients underwent palliative stent implantation for aortic coarctation (weight 960-1230g) with stents 3-4 mm in diameter and 7-9 mm in length (fluoro time 6.2-10.8 min). One patient died from sepsis; 2 had elective end-to-end repair after 4 months; 1 underwent Norwood after 3 months. 3 patients underwent palliative stent placement for Tetralogy of Fallot (weight 970-1300g) with stents 3.5-4 mm in diameter and 9-12 mm in length (fluoro time 10.8-17.2 min). Elective repair was performed in all after 6-10 weeks. One patient with HLHS underwent stent implantation into the atrial septum for severe atrial restriction (weight 1400g) but died 7 days after bilateral PA banding 2 weeks after atrial stent secondary to severe native aortic arch stenosis.

Catheter intervention offers relatively safe and effective treatment or palliation for premature infants under 2 kg but overall outcome in critical AS and HLHS leaves room for improvement.