

### **PW3-3**

#### **Transcatheter PDA-closure in (pre-term) newborns below 3kg of weight**

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##### **Introduction:**

Surgical ligation is the standard treatment for a hemodynamically significant patent ductus arteriosus (PDA) in preterm infants who remain unresponsive to medical treatment. The Amplatzer ductal occluder II-AS (ADO-II-AS; AGA/St. Jude) is a symmetrically shaped device delivered through a 4F proprietary catheter, CE-marked for transcatheter ductal closure in children older than 6 months of age and above 6 kg of weight with a ductal diameter of  $\leq 4$  mm and length  $\leq 8$  mm. We report on our experience with PDA closure in premature children with a weight of  $< 3$  kg.

##### **Patients and methods:**

In 2011, 13 patients with a body weight below the recommended weight of 6 kg underwent transcatheter PDA closure for hemodynamically significant ductus using the ADO-II-AS at our institution. PDA closure was attempted in 5 pre-term infants with a body weight of less than 3 kg (range 2.1 to 2.8 kg). Percutaneous vascular access was from the femoral venous side only (4F short sheath) in all patients. A hand-injection of contrast through the side-arm of a Touhy-Borst adapter on a diagnostic catheter placed over a floppy wire through the duct visualized the ductal morphology. An ADO-II-AS size chosen according to the manufacturer's instructions was implanted through a 4F delivery catheter. Transthoracic echo and hand-injection of contrast through the side-arm of the delivery catheter confirmed correct device position prior to release.

##### **Results:**

Transcatheter PDA closure by antegrade implantation of an ADO II AS was technically feasible without any problems in all children. All infants except one showed complete ductal closure within 24 hrs after the procedure. No obstructions of the aortic arch or the left pulmonary artery were observed. In one child (2.6 kg) the device tilted after release from the delivery system resulting in significant residual shunting. This device was retrieved percutaneously and uneventfully through a long 4F sheath during the same procedure.

##### **Conclusions:**

Using the ADO II AS, transcatheter PDA-closure is possible in selected (pre-term) newborns below 3kg of weight. The device that can be delivered transvenously through a 4F catheter preserves the arteries in small children and extends the previous limits of percutaneous PDA closure.