

Transcatheter Closure of Arterial Duct in Infants <6 kg: Amplatzer Duct Occluder type I vs. Amplatzer Duct Occluder II Additional Sizes.

Giordano M. (1), Santoro G. (2), Gaio G. (1), Palladino M.T. (1), Iacono C. (1), Capozzi G. (1), Carrozza M. (1), Russo M.G. (1)
Paediatric Cardiology, A.O.R.N. "Ospedali dei Colli", University of Campania "Luigi Vanvitelli", Naples, ITALY (1)
Paediatric Cardiology and GUCH unit, Ospedale del cuore "G.Pasquinucci", Massa, ITALY (2)

OBJECTIVES. Transcatheter closure of AD remains challenging in low-weight patients and using Amplatzer Duct Occluder devices is still considered off-label in infants less than 6 kg. This study aimed to report a large, single-center experience of percutaneous arterial duct (AD) closure in infants <6 kg as well as to compare the most frequently used devices, Amplatzer Duct Occluder type I (ADO I) and Amplatzer Duct Occluder II Additional Sizes devices (ADO II-AS) (St. Jude Medical Corp, St. Paul, MN, USA).

METHODS. From November 2002 to December 2016, among the 764 patients submitted to percutaneous closure of AD at our Institution, 31 were infants <6 kg (mean age 4.8 ± 2.11 months, range 0.03-10; mean weight 5.1 ± 0.94 kg, range 3-6). 14 patients (45%) underwent ADO I (Group I) and 17 pts ADO II-AS (Group II) implantation.

RESULTS. AD diameter was 2.61 ± 0.72 (range 1.5–4.0) mm resulting in QP/QS of 2.57 ± 0.95 (range 1.5-4.5). Mean pulmonary artery (PA) pressure and PA/aortic pressure ratio were 25.58 ± 6.41 mmHg (range 14-38) and 0.50 ± 0.19 (range 0.23-0.91), respectively. Successful device deployment was achieved in all patients without procedural morbidity or mortality. Procedural and fluoroscopy times were not significantly different between groups. However, total absorbed x-ray was significantly lower in the Group II (120.75 ± 69.16 vs 27.64 ± 16.06 mGy, $p < 0.01$). Immediate, 24h and mid-term (12±1 mos) complete occlusion was recorded in 71%, 90%, and 97% of patients, respectively. Mid-term occlusion rate did not significantly differ between the groups.

CONCLUSIONS. Trans-catheter closure of AD with Amplatzer Duct Occluder devices is feasible, safe and effective also in infants less than 6 kg, without significant difference between the most commonly used devices, ADO I and ADO II-AS.