

Transcatheter Closure of Arterial Duct in Infants <6 kg: ADO-I vs. ADO-II AS

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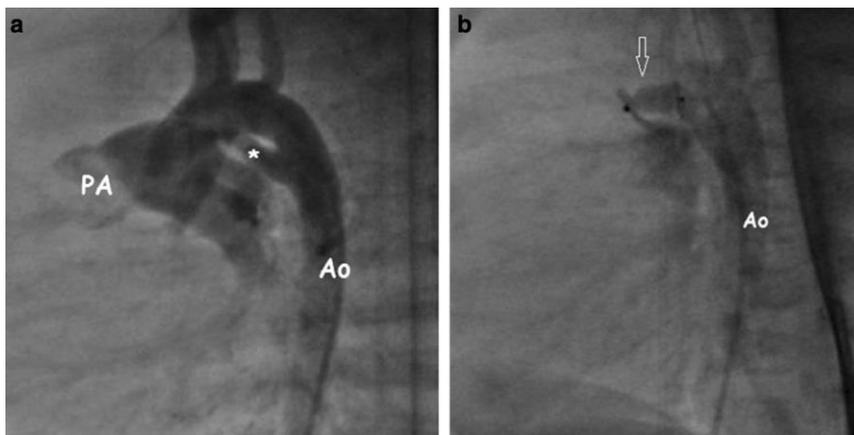
OBJECTIVES. This study aimed to report a large, single-center experience of percutaneous arterial duct (AD) closure in infants <6 kg as well as to compare the most frequently used devices: Amplatzer Duct Occluder type I (ADO I) and Amplatzer Duct Occluder II Additional Sizes devices (ADO II-AS) [St. Jude Medical Corp, St. Paul, MN, USA].

BACKGROUND. 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.

METHODS. From November 2002 to November 2017, among the 789 patients submitted to percutaneous closure of AD at our Institution, 33 were infants <6 kg (mean age 4.7 ± 2.1 months, range 0.03-10; mean weight 5.1 ± 0.93 kg, range 3-6). 14 patients (42.4%) underwent closure by ADO I (Group I) and 19 pts (57.6%) by ADO II-AS (Group II) implantation.

RESULTS. AD diameter was 2.61 ± 0.77 (range 1.5–4.0) mm resulting in QP/QS of 2.63 ± 0.97 (range 1.5-4.5). Mean pulmonary artery (PA) pressure and PA/aortic pressure ratio were 25.15 ± 6.43 mmHg (range 14-38) and 0.49 ± 0.18 (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 72.7%, 90.9%, and 97% of patients, respectively. Mid-term occlusion rate did not significantly differ between the groups.

CONCLUSION. 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.



- A. Aortic angiography in lateral view showing a 3-mm large, 9-mm long, elongated AD (asterisk), resulting in a significant left-to-right shunt.
- B. After deployment of a 5/6 mm ADO II-AS device just a tiny intra-prosthetic shunt is imaged at control angiographic evaluation.
- Ao, aorta; PA, pulmonary artery