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## Implantation of the new Nit-Occlud PDA-R device in children below 10 kilograms

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Introduction:
Interventional closure of a patent arterial duct (PDA) has become a common and safe procedure in most pediatric cath labs. However, despite the modern devices available, it still remains a challenge in those children with low body weight and a large PDA. Several new PDA occluder systems have been developed in the last years. One of them is the Nit-Occlud PDA-R device which was especially designed for large PDAs. The clinical experience and initial trial with this occluder published so far accepted only children with a body weight greater than 10 kilograms.

Methods:
We report our most recent experience in five children (age 6-33, median 13.4 months) with a body weight from 5.4 to 13 kg (median 9 kg) with large PDAs: ductal length was 14,6 mm (median), there was a large ampulla (median 12.8 mm) which exceeded the diameter of the aorta and large diameter of the duct (mid-PDA median 6.8 mm, narrowest median 3.6 mm).
The occluder size is determined by the minimum diameter of the PDA, the occluder stent must be at least 1.5 times, better 2 times greater: in four cases, the Nit-Occlud PDA-R with an aortic disc of 12 mm, a stent of 7 mm and a length of 8.5 mm was selected and in the fifth case one with an aortic disc of 14 mm, a stent of 8.5 mm and a length of 9.5 mm. All devices were implanted using the femoral venous access with a 6F sheath.

Results:
All five devices were successfully implanted under sedation, without general anesthesia and without complications, e.g. dislocation with pulmonary or aortic obstruction. A sufficient occlusion of the PDA was documented by angiography and echocardiography in all cases. The patients were discharged from hospital two days after implantation.

Discussion:
The new Nit-Occlud PDA-R device is suitable even in children with a body weight below 10 kilograms, when a relative large PDA is present. The re-inforced retention disc allows an optimal positioning in the aortic ampulla without obstruction and the flexible cylindrical plug helps to adapt this device to various duct anatomies.