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## Transcatheter closure of patent ductus arteriosus (PDA): Comparison of Amplatzer duct occluder with the new Amplatzer duct occluder II

*Oswal N. , Khambadkone S. , Derrick G. , Yates R.*
*Paediatric Cardiology department, Great Ormond Street Hospital NHS Trust, London, UK*

Objective: To assess efficacy and short term results of the new Amplatzer duct occluder (ADO II) compared to Amplatzer duct occluder (ADO).

Background: Transcatheter PDA occlusion by ADO device is effective for moderate to large PDA's and new ADO II device may be better in certain types of PDA, and in smaller children.

Method: Retrospective case review of occlusion rate, risk of embolisation, and restriction to flow in left pulmonary artery (LPA) or descending aorta after PDA occlusion by ADO or ADO II device. Choice between ADO vs. ADO II was based on duct morphology after angiography.

Results: 52 patients (mean age 3yrs 0.3- 16 yrs, mean weight 12.9kg 4.5- 57 Kg) underwent antegrade closure of PDA with ADO and 69 patients (mean age 2 years 0.3- 11.7 yrs , mean weight 10.3 kg 3.9 – 45.5 Kg ) underwent antegrade closure of PDA with ADO II from January 2008 and November 2010. Mean PDA diameter on angiography in ADO group was 2.6 mm and for ADO II group was 2.4 mm. There was immediate occlusion of PDA on angiography in 28/52 (53%) patients in ADO group compare with 43/69(63%) patients in ADO II group. Echocardiography before discharge showed complete closure in 45/52 (87%) patients in ADO group compared to 63/69 (91%) patients in ADO II group. Mean fluoroscopy time for ADO group was 12minutes (median 7.5 min) and 11minutes (median 8 min) for ADO II group. Two ADO devices embolised into the descending aorta and two ADO II devices embolised into the pulmonary artery. All were retrieved successfully. Flow restriction into the descending aorta was not seen, but mild LPA flow restriction was noted in 6 of the ADO II group.

Conclusion: Both Amplatzer duct occlusion devices are safe and effective. The ADO has a greater risk of embolization into the descending aorta than the ADO II. ADO II closure rate is as good as the ADO but is associated with an increased incidence of LPA flow restriction.