

Arterial duct redilatation/restenting: a single center experience

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BACKGROUND. Maintaining arterial duct (AD) patency is widely considered an effective alternative to surgical systemic-to-pulmonary artery shunt in neonates with congenital heart disease and duct-dependent pulmonary circulation (CHD-DDPC). Re-dilatation/re-stenting is sometimes needed due to progressive flow reduction secondary to patients growth and/or intra-stent re-stenosis.

METHODS. Aim of the study is to evaluate safety and feasibility of re-dilatation/re-stenting procedure compared to primary procedure. Between April 2003 and October 2011, 91 neonates underwent attempt of AD stenting as palliation of CHD-DDPC at our Institution (Group I). Among them, 15 patients needed a second procedure of re-dilatation/re-stenting (Group II).

RESULTS. Procedure was successfully completed in all patients in Group II (100%) versus 85/91 patients of the Group I (93.5%). Twelve patients underwent ductal re-stenting, 2 patients ductal re-dilatation, after 4.8 + 2.6 months from the first procedure. After re-stenting/re-dilatation the duct size increased from 2.2+1.4 to 3.3+0.5 mm ($p<0.01$, $p=NS$ vs Group I) and percutaneous O₂ saturation increased from 75+4 to 93+5% ($p<0.0001$; $p=NS$ vs Group I). Life-threatening complications and need for emergency surgical shunt was recorded in 2/14 group II pts (13% vs 1.1 % in Group I) due to acute stent thrombosis after deployment in both patients. In-hospital procedural-related mortality was 6.6% in group II vs 1.1 % in group I.

CONCLUSIONS. AD re-stenting/re-dilatation is a feasible mini-invasive palliation of CHD-DDPC supporting clinical improvement. Acute thrombosis is a life-threatening major complications most frequently recorded in the re-restenting procedure. Early and clinical symptomatic stent occlusion seems to be a risk factor. Probably a more aggressive anti-platelet therapy could be necessary in this subgroup of patients.