

**Balloon Atrial septostomy in very low birth weight infants <1500 g. Tips and tricks From NICU to the catheterization laboratory.**

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The interventional management of d-TGA in VLBW infants (<1500g) is more required with the advances in neonatal intensive care unit (NICU) and Pediatric Interventional Cardiology.

Objective: To describe our experience in balloon atrial septostomy (BAS) in VLBW patients with d-TGA.

Methods: we reported retrospectively all BAS in the infants weighting <1500 g from January 2002 to June 2013. We collected information about the vital parameters before and after BAS. We detailed BAS techniques.

Results: We reported 3 patients with a mean weight of 1333g (1200- 1500 g). d-TGA was diagnosed at a mean age of 3 days. 4 BAS attempts were performed at a mean age of 10.3 days (2-25 day). Procedures were performed in catheterization laboratory (n=3) and in NICU (n=1). Patients were ventilated, sedated and transported by the NICU team. Venous access was obtained by femoral vein puncture (n=2), by femoral vein cutdown (n=1) and by the umbilical vein (n=1). In patient1, BAS was done under fluoroscopic control, procedure was aborted due to atrial wall perforation by the guide-wire without tamponnade (patient died few days later for non-related causes). Patient2 had 2 attempts: under echocardiographic control, atrial septal balloon dilatation was performed first because of very restrictive FO, procedure was complicated by bradycardia. Because of persistent restriction, a second attempt was done 24h later under echocardiographic and fluoroscopic control, BAS was performed using 5 Fr. Z-Med septostomy catheter without complication. Patient3 procedure was done under echocardiographic and fluoroscopic control. BAS was performed using 4Fr. end-hole Swan Ganz catheter and it was complicated by balloon rupture. Duration of Procedures was shorter in catheterization laboratory (45 to 60 min) versus 120 min in NICU. When achieved, BAS was effective with sustained clinical improvement.

Conclusion: BAS is mandatory in VLBW patients with d-TGA and restrictive FO, as soon as possible to use the umbilical vein. Cautious manipulation of catheters and guide-wires under control by fluoroscopy and echocardiography is necessary because of frequent complications. Atrial septal balloon dilatation constitutes another therapeutic option. Procedures require close collaboration with the NICU team to avoid transport and hypothermia complications.