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Catheter Closure of Patent Ductus Arteriosus in Adult Patients Using an Outpatient Protocol. A randomized multicentre study

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Introduction: Transcatheter closure is the treatment of choice for the majority of patients with a patent ductus arteriosus (PDA). However, the standard technique of this procedure uses an arterial access and requires immobilization of the patients for 24 hours and may be associated with arterial complications. The aim of this study was to report experience with catheter closure of PDA in 104 consecutive adult patients with the Cocoon PDA occluder on outpatient basis using an exclusive venous approach.

Methods: The age of the patients ranged from 16-72 years (median 36 years. In group 2 the procedure was guided using hand injections of contrast media through the delivery sheath and 2D and color Doppler echocardiography from suprasternal and parasternal long and short axis, respectively.

Results: Group 1: The PDA diameter range from 3 to 10 mm. The device diameter ranged from 4 to 12 mm. The PDA occluders were permanently implanted in all patients. Two and 4 patients had absent and reduced arterial pulses, respectively, that were restored with intravenous infusion of heparin and rtPA, were the main complications of the procedure. . The hospital stay of the patients ranged from 24-48 hours. Group 2. The mean PDA diameter ranged from 2 – 9 mm. The device diameter ranged from 4 – 10 mm. The PDA occluders were permanently implanted in all but 2 patients. There were no arterial complications. .. The hospital stay of the patients ranged from 6 -8 hours. There was a reduced cost that ranged from 300- 500 €. Complete echocardiographic closure of the ductus at 1-month follow-up was observed in all 102 patients (100%).

Conclusions: Exclusive transvenous PDA occlusion using combined angiographic and echocardiographic guidance is an effective and safe method that prevents the arterial complications of the standard approach. In addition, in adult patients, this technique, may be used on outpatient basis resulting in early patient mobilization and reduce hospital cost.