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Trans-catheter closure of patent ductus arteriosus-What is the best device?

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Abstract

BACKGROUND: Over the past three decades, transcatheter occlusion of patent ductus arteriosus (PDA) has evolved to be the procedure of choice. Gianturco and Flipper coils are the most commonly used coils in the United States for closure of small and moderate size PDAs. For larger PDAs, interventionalists in the United States commonly use the Amplatzer Duct Occluder (ADO) and those in Europe use the ADO or the Nit-Occlud Coils (NOC). A comparison between Gianturco coils, Flipper coils, ADO, and NOC has never been made.

OBJECTIVE: To compare the success and complication rate associated with the four different devices used for transcatheter closure of PDA. Success was defined as complete closure of PDA with absence of a residual shunt (R.S.) at six months follow-up. Methods: Two institutions collaborated in combining their data to evaluate the results of transcatheter closure of PDA.

RESULTS: Totally, 546 patients underwent successful PDA occlusion at both institutions. Gianturco and Flipper coils were used in 120 (22%) and 119 (22%) patients respectively. A total of 152 (28%) patients received ADO and 155 (28%) patients received NOC. Immediate R.S. were noted in 226 (41.4%) patients in the entire study group with the NOC group having the highest percentage of R.S. (80/155, 51.6%, P = 0.004). Of the 484 patients with follow-up echocardiograms at 6 months, 35 (7.2%) patients had persistent R.S. The NOC (3/143, 2.1%) and ADO (5/150, 3.3%) groups had the least R.S. at six months follow-up.

CONCLUSION: Per our definition of success, the Nit-Occlud coils and the Amplatzer duct-occluder devices had significantly higher success rate for PDA occlusion versus the coils. © 2010 Wiley-Liss, Inc.

Comment in

The patent ductus arteriosus-multiple defects and a moving target. [Catheter Cardiovasc Interv. 2010]

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