عنوان مقاله:

A Transcatheter Closure of Large-Size Patent Ductus Arteriosus with Severe Degree of Pulmonary Hypertension by Different Types of Devices

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خلاصه مقاله:

Background: Transcatheter closure is the most common treatment for patent ductus arteriosus (PDA); however employing large PDA is difficult because there are few closure devices, and surgical treatment is risky, especially in young infants with low weight and adults with calcified PDA. This study examines transcatheter closure and pulmonary artery (PA) pressure reversibility in large PDA with severe pulmonary hypertension. Methods: A prospective research examined high PA pressure in ۳۴ patients with big PDA and severe pulmonary hypertension (PHT) who were closed with various occludes. Clinical and transthoracic echocardiographic follow-up at ۴ weeks, ۳ months, ۶ months, and ۱۲ months post-closure measured PA pressure and closure effectiveness. Results: In total, ۳۴ big PDAs with significant PHT were transcatheter-closed in ۷۲۳ individuals. Patients were from a few months old to adults and weighed from ۴.۲۵ to ۶۱kg, which were tested by using ADO۱, MVSD, AVP۲, ASDO, and a stent-closed PDAs. After the intervention, the PA systolic, mean, and diastolic pressures were ۳۶.۸۵±۱۱.۱۲mmHg, ۲۹.۲۴±۱۰.۰۹mmHg, and ۲۳.۳۵±۸.۸۲ mmHg, respectively. Moreover, after the intervention, the aortic systolic, mean, and diastolic pressures were ۱۱۲.۳۸±۱۶.۹۷mmHg, ۷۶.۰۰±۹.۷۳mmHg, and ۶۱.۸۸±۸.۷۳mmHg, respectively. Two instances showed rebound PA pressure ۳ months after effective treatments that did not respond to pulmonary vasodilator therapy. The median size of PDA in ۱۰ cases closed by MVSD was ۱۱.۵۹±۳.۱۵mm, and the device size was ۱۶.۲۰±۳.۴۶mm; moreover, the defect size in ۱۵ cases closed with ADO I device was ۹.۱۹±۳.۴۶mm, and the median size of occluder was ۱۱.۰۷±۴.۰۶mm. In ۴ cases, the median size was ۵.۱۵±۰.۶۵mm, mostly in infants closed by an AVP۲ occluder with a device size of ۸.۵۰±۱.۰۰mm. Conclusion: Transcatheter closure of large PDA with severe PHT using the off-labeled device is feasible and effective. Meticulous and continuous assessment and evaluation of PHT response for closure is mandatory to confirm longstanding efficacy and safety.

کلمات کلیدی:

Ductus Arteriosus Patent, Pulmonary hypertension, Transcatheter, Vascular Closure Devices