THE RISK OF LEFT VENTRICULAR SYSTOLIC DYSFUNCTION AFTER PERCUTANEOUS DEVICE CLOSURE OF PATENT DUCTUS ARTERIOSUS IN ADULTS

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BACKGROUND

It has been reported that transcatheter closure of patent ductus arteriosus (PDA) is associated with deterioration of left ventricular ejection fraction (LVEF). However, the data remains sparse.

OBJECTIVES

To investigate the changes of LVEF after transcatheter closure of PDA in adult patients and explore the risk factors related to deterioration of LVEF after device closure.

METHODS

The study was retrospectively analyzed in patients with isolated PDA and treated with transcatheter PDA closure by Cocoon™ device between January 2010 to March 2014. Determination of the risk factors of left ventricular systolic dysfunction has been explored by two-dimensional (2D) echocardiographic parameters pre-procedure.

RESULTS

Thirty-three patients had successful device closure by Cocoon™ Ductal Occluder. The mean age was 38.5±12.0 years and 81.8% were female. The mean PDA diameter at its narrowest segment was 6.9 mm. According to the PDA classification, 51.6% of patients had type A, 35.5% had type B, 3.2% had type C and 9.7% had type E. The device size 10/12 were predominantly used in 45%. The 2D- echocardiography showed that the shunt occlusions were completed in 90% of patient at one month and 100% at 1 year. Post-procedure, the left ventricular ejection fraction (LVEF) decreased more than 5% in 74.2% of patients. However, left ventricular dysfunction after device closure was transient, LVEF has recovered mostly in 3-6 months.

CONCLUSION

Transcatheter device closure of PDA is associated with left ventricular systolic dysfunction post-procedure but it is transient with recovery at short-term follow-up.