INTERVENTIONAL CARDIOLOGY

Percutaneous pulmonary valve implantation: 1-year safety and efficacy reported in German study

Percutaneous pulmonary valve implantation (PPVI) can be a safe and efficacious temporary alternative to surgery. Andreas Eicken and colleagues performed the procedure at two German hospitals on over 100 patients with dysfunctional conduits in the right ventricular overflow tract (RVOT). PPVI improved hemodynamic parameters for at least 1 year, during which time complications, including stent fractures, were rare.

Implantation of valved conduits between the right ventricle and the pulmonary artery is often needed to correct congenital heart defects. However, the conduit inevitably degenerates over time, requiring patients to undergo repeat cardiothoracic surgery. PPVI, in which a bovine valve attached to a stent is implanted, is seen as a less-invasive and potentially safer therapy that increases the durability of conduits and delays surgical replacement. “The current study

was done, firstly, to prove that PPVI can be performed safely and effectively by experienced interventionalists,” explains Eicken “...and, secondly, [to prove] that during follow-up the hemodynamic results persist”.

Most of the 102 patients (median age 21.5 years) experienced conduit stenosis and pulmonary regurgitation when they underwent PPVI between 2006 and 2010. After 1 year, peak systolic RVOT gradient, end-diastolic right ventricular volume, and pulmonary regurgitation were significantly reduced; exercise tolerance of the patients remained unchanged. The investigators recorded one fatality during the procedure as well as one case of endocarditis after 6 months.

A common problem in PPVI is stent fracture. By pretesting the landing area of the valve implant with strong metal stents, Eicken and colleagues reduced the incidence of this complication from 25%, reported in a similar trial, to 5%.

One limitation of the study is its short follow-up period. Medium-term and long-term data will be needed to assess whether the ultimate goal of reducing the number of cardiothoracic operations during a patient's lifetime is achieved. Eicken, however, is optimistic: “Since introduction of this intervention in our institution, the number of surgical conduit-exchanges have [sic] declined significantly.”

Christoph A. Schmitt

Original article Eicken, A. *et al.* Percutaneous pulmonary valve implantation: two-centre experience with more than 100 patients. *Eur. Heart J.* doi:10.1093/eurheartj/ehq520

Courtesy of Medtronic, Inc.

CORRECTION**Percutaneous pulmonary valve implantation: 1-year safety and efficacy reported in German study**

Christoph A. Schmitt

In the version of this article initially published online, the sentence beginning 'Median-term and long-term data...' should have read 'Medium-term and long-term data...' The error has been corrected for the print, HTML and PDF versions of the article.