

# **ENDOVASCULAR AORTIC VALVE REPLACEMENT. THE CoreValve<sup>®</sup> EXPERIENCE.**

S. Iversen, T. Felderhoff , U. Gerckens, L. Büllersdorf, E. Grube, Siegburg, Germany

## **Objectives:**

Endovascular aortic valve replacement is an evolving technology in the treatment of aortic valve disease. We present our initial experiences with the self-expanding CoreValve<sup>®</sup> aortic valve prosthesis.

## **Material and methods:**

Between February 2005 and February 2006 26 selected patients (21 female - 5 male, mean age of 79 years; range 69-94 years) with significant stenosis (n=23) or combined lesion (n=3) of the aortic valve underwent endovascular prosthetic replacement. The CoreValve<sup>®</sup> aortic valve prosthesis consists of a bovine pericardial tissue valve (inner diameter 21-22 mm) mounted on a self expanding nitinol stent of 50 mm length. After preceding balloon valvuloplasty the prosthesis was delivered retrograde with a 24 Fr. catheter via a retroperitoneal approach to the common iliac artery (10 pts.) or with a 21 Fr. catheter via the common femoral (14 pts.) or subclavian artery (2 pts.) after surgical cut down. The procedure was performed under femoro-femoral extracorporeal circulation to facilitate stent placement.

## **Results:**

The prosthesis was successfully implanted within the native aortic valve in 23 patients. In one patient the procedure was aborted due to failed valvuloplasty. Two patients survived immediate conversion to open surgery after dislocation of the endovascular prosthesis. Intraoperative echocardiography showed a significant reduction in transaortic mean pressure gradient from  $45 \pm 10$  mmHg to  $12 \pm 4$  mmHg.

Perioperative mortality was 19.2 % (5/26 pts.): delayed heart rupture (1), DIC (1), cardiac failure after failed valvuloplasty (1), cerebral infarction (1) and multi organ failure (1).

Perioperative antiplatelet medication (clopidogrel) is mandatory to avoid platelet activation.

## **Conclusion:**

Endovascular aortic valve replacement is technically feasible in selected patients. With further technical and procedural improvements the method might offer an alternative therapeutic option for patients at high risk for conventional aortic valve surgery.