The Role of TEE in the Screening of Patients for Transcatheter Aortic Valve Implantation

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Background: Transesophageal echocardiography (TEE) in not universally implemented in the screening process of patients with aortic stenosis (AS) referred for trans-catheter aortic valve implantation (TAVI). Therefore, we looked at our institutional data on the impact of TEE on patients' allocation for TAVI, and its results.

Methods: Our database was sought for patients with native valve AS undergoing screening for TAVI who underwent TEE. We looked at valve sizing and immediate procedural outcome. For those who did not undergo TAVI, we looked at TEE findings that might have excluded them from TAVI.

Results: 129 patients (mean age 83±6.4, 73 female) underwent TEE during a 24-month period (10/2008-9/2010) as a part of TAVI screening. The aortic valve area was 0.66±0.19 cm2, with peak and mean gradients 84±21 and 49±16 mmHg , respectively. The mean annular diameter was 23.2±2.8 mm (range 17-35 mm). Fifty patients, (age 83.7+4.6 , 33 female) underwent TAVI, using TEE data for valve choice. There was no case of valve migration or root rupture. The peak trans-valvar gradients were lower than 20 mmHg for all valve models and sizes. Post-dilatation was required in 3 patients (10%) with CoreValve. Overall there were 4 cases (8%) of mild to moderate residual aortic regurgitation, all in the CoreValve group. Of the 79 patients who did not undergo TAVI (age 82.6+7.1, 40 female), 15 (19%) had inappropriate ring diameters (14 larger and 1 smaller than required for the available valves). There were 4 cases of bicuspid aortic valve, 7 cases of calcified supravalvar ridge, and 9 cases of more than moderate additional valvulopathy. In 10 patients (13%) TEE showed that AS was not severe. Overall, up to 38 patients (48%) could be excluded according to TEE findings alone.

Conclusion: Valve choice for TAVI can be reliably planned by TEE sizing. TEE is valuable for screening candidates for TAVI, and can obviate the need for extensive work-up by exclusion of unsuitable candidates.