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Revival of aortic balloon valvuloplasty: A single center 10-year experience

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Background: Balloon aortic valvuloplasty (BAV) is a catheter-based palliative option for nonsurgical patients with severe aortic stenosis (AS). BAV fell from favor due to perceived procedural complexity, suboptimal initial results, and high restenosis rate. Recent progress in therapy of high-risk AS patients revived the use of BAV as well. This single center registry reports our 10-year temporal changes in BAV.

Results: Thirty-four patients underwent BAV in our center during the last decade. All patients were declined of surgery at the time BAV was performed. Indications for BAV included cardiogenic shock in 36%, refractory pulmonary edema in 46%, recurrent syncope in 9% and preparation for non-cardiac surgery in 9% of our patients. In contrast to 1-2 procedures/year performed from 2000-2005, and 3-4 during 2006-2008, we performed 18 BAVs in 2009. Mean age (±SD) was 79±10.7 (range 62-95 years), 60% females. Mean valve area pre-BAV was 0.57±0.15 cm2 which increased to 0.9±0.13 cm2 post-BAV. Echo-estimated maximal and mean gradients across the AV prior to and after BAV were 66.2±20.2 / 41.2±13.7 mmHg and 33±10.4 / 20.6±7.3 mmHg, respectively. Peak to peak gradient in the cathlab decreased by 32.8±11.9 mmHg following BAV. Thirty-day mortality rate was 9%, of whom two peri-procedural deaths were related to ventricular arrhythmia and refractory hemodynamic collapse during the procedure.

Conclusions: BAV is an effective procedure for the stabilization of severe AS patients in which definitive valve procedure is declined due to critical hemodynamic status. Since the introduction of transcatheter aortic valve implantation (TAVI) we are witnessing a steep increase in the number of patients undergoing BAV. The option of TAVI and the acquisition of vascular and valvular techniques opened the door for the revival of BAV.