

### Complication and Outcome of Balloon Aortic Valvuloplasty in High Risk or Inoperable Patients

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**Background:** With the introduction of transcatheter aortic valve implantation balloon aortic valvuloplasty (BAV) has experienced a revival for treatment of patients (pts) with severe aortic stenosis (AS). This study aimed to determine the success, complication and survival of pts after BAV

**Methods:** A cohort of 219 pts with severe AS underwent 241 BAV procedures between 2006-2009. Of these 16 (7.3%) pts had  $\geq 2$  BAV procedures. Clinical, hemodynamic, and follow up mortality data were collected

**Results:** The mean age of 81.1 $\pm$ 9.6 years, mean STS and logistic Euro score 13.4 $\pm$ 23.6, 43.3, 7.6, respectively. In 78(35.6%) pts the aortic valve area (AVA) increased to > 1cm<sup>2</sup> and in 89(40.6%) AVA increase in >0.4cm<sup>2</sup>. The mean increase in AVA was 0.38 $\pm$ 0.2cm<sup>2</sup> higher compared to the group who had redo of BAV with a mean increase of 0.26 $\pm$ 0.2cm<sup>2</sup>, p=0.01. The mortality rate was 97 (44.2%) during median follow of 183[60-456] days. Both final AVA and delta increase AVA were associated with lower mortality (OR 0.2, P=0.02 and OR 0.1, P=0.01, respectively). The mortality of pts with final AVA >1cm<sup>2</sup> vs. <1cm<sup>2</sup> (35.5 vs. 52.7%, p=0.03), and in pts with increase AVA >0.4cm<sup>2</sup> vs. <0.4cm<sup>2</sup> (41.1 vs. 51%, p=0.2). Renal failure and NYHA class were significantly associated with mortality. 30(13.6%) pts required blood transfusion

**Conclusion:** Long term survival after BAV is dismal. Efforts should be targeted to obtain (AVA>1cm<sup>2</sup>) post BAV to improve the survival rate. Percutaneous or aortic valve replacement should pursue aggressively if this target is not met

219 patients underwent balloon aortic valvuloplasty			
	Pre balloon valvuloplasty	Post balloon valvuloplasty	P
Mean aortic valve area (cm <sup>2</sup> )	0.56 $\pm$ 0.17	0.95 $\pm$ 0.29	<0.001
Mean Gradients (mmHg)	46.9 $\pm$ 20.7	21.3 $\pm$ 12.7	<0.001
Cardiac output (l/min)	3.9 $\pm$ 1.8	4.1 $\pm$ 1.3	0.7
Pulmonary pressure (mmHg)	51.2 $\pm$ 17.3	49.1 $\pm$ 16.6	0.001
Hematocrit (%)	35.4 $\pm$ 4.6	29.3 $\pm$ 5.2	<0.001
Creatinine (mg/dl)	1.4 $\pm$ 1.0	1.9 $\pm$ 1.0	0.02
Troponin (ng/dl)	0.7 $\pm$ 6.2	1.3 $\pm$ 2.4	0.3
Serious adverse events		39(17.8%)	
Intraprocedural death (%)		4(1.8)	
Stroke (%)		6(2.7)	
Vascular complication (%)		13(5.9)	
Life threatening bleeding		6(2.7)	
Moderate/Severe aortic regurgitation (%)		3(1.3)	
Profound hypotension requiring resuscitation and intubation (%)		3(1.3)	
Tamponade /Left main occlusion(%)		1(0.45)/1(0.45)	
Ventricular tachycardia (%) <sup>2</sup>		2(0.9)	