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Immediate outcomes of balloon aortic valvuloplasty in congenital aortic stenosis: A 5 years single center experience

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Objective: The aim of this study was to determine the success and complication rates immediately occurring after BAV and to correlate various variables with procedural success. It is a quasi-experimental study. The study is being conducted in the Pediatric Cardiology Department of Lady Reading Hospital, Peshawar from January 2012 to December 2016.

Methods: 52 consecutive patients with moderate to severe congenital aortic valve stenosis were included who underwent BAV with retrospective approach in 50 patients, while trans-septal approach in rest of the two cases. More than 50% reduction in initial pre-BAV pressure gradient across aortic valve was considered as a successful procedure.

Results: 52 patients with male to female ratio of almost 3:1 with mean age of 6.9±5.9 years underwent BAV. Success rate was 82%. The mean AV area increased from 13.6±5.5 to 16.9±5.1 mm and the pressure gradient across AV decreased from 77.4±44.5 to 25.1±16.9 mmHg with significant p-value of 0.001. Chi-square correlation was significant for severe AS using balloon to annulus area ratio of 0.8 to less than 1.0 in normal morphological valve with procedural success. Pearson correlation between echocardiographic and cardiac catheterization derived AVA was 0.952 with p-value of 0.001. 33 patients developed mild to moderate AR during BAV. Six patients had arrhythmia and three had pericardial effusion. Two died from intra-procedural cardiac arrest due to VF and acute pulmonary edema.

Conclusion: BAV is safe and effective procedure with reduced rate of complications. It will be more effective in severe AS using BA ratio of <1.0. Echocardiography can measure AV area as closely as invasive cardiac catheterization.

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