Utilization and Mortality Trends for Balloon Mitral Valvuloplasty in the United States: An Eight-Year Perspective

Moderated Poster Contributions
Poster Sessions, Expo North
Monday, March 11, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Valvular Heart Disease: Clinical VII - Mitral Valve
Abstract Category: 31. Valvular Heart Disease: Clinical
Presentation Number: 1285M-83

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Background: Incidence of rheumatic mitral stenosis had steadily decreased in developed countries like USA. The cross-sectional data investigating Balloon Mitral Valvuloplasty (BMV) use in the USA is lacking.

Methods: We queried the Healthcare Cost and Utilization Project’s Nationwide Inpatient Sample (NIS) between 2003 and 2010 using the ICD9 procedure code of 35.96 for valvuloplasty. Only patients ≥18 years of age with mitral stenosis were included. Patients with concomitant aortic, tricuspid or pulmonic stenosis were excluded. Census data was used for population estimates of all adults ≥18 years of age to calculate time trends in utilization rate. We defined severity of comorbidities using Charlson index (CCI), where higher scores (0-33) represent increasing burden.

Results: The utilization rates of BMV has significantly decreased from 11.4 BMV/million population in 2003-2004 to 7.5 BMV/million population in 2009-2010 (p<0.001). There was a trend towards increased inhospital mortality associated with BMV from 2.3% in 2003-2004 to 4.3% in 2009-2010 (p=0.06). For any given year, females (74.79%) had the maximum number of procedures. Increasing CCI was associated with higher in-hospital mortality (HR 1.56, 95% CI 1.40-1.75, p<0.001).

Conclusions: The decrease in utilization rate for BMV reflects the decrease in the incidence of rheumatic mitral valve stenosis over the last decade. This is the first study reporting the utilization and mortality rate for BMV in USA.