RATES AND CORRELATES OF PROGRESSION OF DEGENERATIVE MITRAL STENOSIS: POTENTIAL BENEFICIAL EFFECT OF BETA BLOCKERS

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Sunday, March 25, 2012, 11:00 a.m.-Noon

Session Title: Mitral Stenosis: New Observations on Medical Therapy and Intervention
Abstract Category: 11. Valvular Heart Disease: Therapy
Presentation Number: 1150-251

Authors: Gaurav Tyagi, Ioana Pasca, Patricia Dang, Reena Patel, Ramdas Pai, Loma Linda University Medical Center, Loma Linda, CA, USA

Background: Degenerative mitral stenosis (DMS) is an increasingly common echocardiographic finding. However, its clinical and biological behavior and rate of progression are not known.

Methods: We searched our echocardiographic database from June 1995 to June 2011 for patients with DMS defined as severe mitral annular calcification with extension into the mitral leaflets, transmitral flow acceleration with a mean diastolic gradient of at least 2 mmHg and absence of commissural fusion. Of the 1,004 patients with DMS, 255 had a second echocardiogram at least 3 months apart forming the study cohort. Clinical, biochemical and pharmacological data were collected and related to annualized rate of increase in mean mitral gradient and stenosis severity based on mean gradient as pressure half time method is not validated for DMS (mild or grade 1: 2-5 mmHg, moderate or grade 2: 6-8mmHg and severe or grade 3: >9mmHg).

Results: Patient characteristics were as follows: age 71 ± 15 years, females 73%, LV ejection fraction 66 ± 13%, diabetes in 50%, chronic renal insufficiency in 40%, hypertension in 86%, and coronary artery disease in 50%. Initial mean mitral gradient was 4.1 ± 1.7mmHg and mean grade of severity 1.2±0.5. Over an average follow up of 2.6 ± 2.2 years, the mean gradient increased by 0.8 ± 2.4mmHg per year and increase in stenosis by 0.18 ± 0.5 grade per year. On univariate analysis, the rate of progression was faster in those with lesser degrees of stenosis (p=0.01) and diabetics (p=0.09) and slower in those on a beta blocker ((p=0.01). Diabetes and lack of beta blocker use were independent predictors of faster DMD progression (both p<0.01). Age, gender, renal insufficiency, coronary artery disease, hypertension, serum calcium or phosphate levels and use of a statin or ACEI/ARB were not predictive of DMS progression.

Conclusions: 1) Degenerative mitral stenosis progresses fairly slowly with an increase in mean gradient rate of 0.8mmHg per year or stenosis severity grade by 0.18 per year. 2) Its progression seems to be accelerated by diabetes mellitus and retarded by beta blocker use. 3) It seems to be an active biological process offering potentially modifiable targets.