

## **Diastolic Mitral Regurgitation in High Degree Atrio-Ventricular Block – Hemodynamically and Clinically Significant**

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**Background:** Loss of atrio-ventricular (AV) synchrony due to high degree AV block is commonly presented with dyspnea. Diastolic mitral regurgitation (MR) which has been described in this setting, was assumed to be small in volume and insignificant clinically, although never quantified. The purpose of this study was to evaluate diastolic MR quantitatively, in these patients, and to study its clinical significance.

**Methods:** 25 consecutive subjects with advanced AV block, were divided into 2 groups according to the presence (n= 12) or absence (n=13) of dyspnea. All patients underwent echocardiographic evaluation, including quantitative calculation of diastolic MR volume, using modified methods, before and after permanent pacemaker implantation.

**Results:** There was no difference between the groups in terms of age, gender, drug therapy, ventricular or atrial rate. 20/25 (80%) of patients had diastolic MR. The volume of diastolic MR, estimated with the proximal isovelocity surface area method, reached up to 52cc per atrial relaxation (mean 15.0±14.8cc). The best single discriminator, between the "Symptomatic" and "Asymptomatic" groups was a volume of diastolic MR of 14.5 cc. A vigorous atrial relaxation was the only significant predictor of diastolic MR volume. All patients had no residual diastolic MR after pacemaker implantation.

**Conclusions:** Diastolic MR, in patients with high degree AV block, is common, and contributes significantly to symptoms of left heart failure.