Conclusion: We investigated whether lone atrial fibrillation (LAF) was the cause of increased E'/Em ratio (r=0.56, p<0.0001), Em/Am ratio (r=-0.71, p<0.0001), and E deceleration time (r=0.70, p<0.0001). An E/Em ratio increased E' was significantly related to LVEDP in the SMR group (r=0.61, p<0.0001), but not in the PMR group (0.17, p=ns). Derived from receiver operating characteristic curve analysis, in the SMR group an E'/Em > 1.35 identified pts. with LVEDP > 15 mmHg with a sensitivity of 80% and a specificity of 83% (area under the curve: 0.86±0.05).

Conclusion: In subjects with secondary MR and reduced LV performance, E'/Em is a reliable estimate of filling pressures. In subjects with primary SV and preserved LV performance, filling pressures are underestimated by E'/Em, mainly due to increased E'.

Tissue Doppler Imaging (TDI) for estimation of filling pressures validation in patients with primary or secondary mitral regurgitation.

C. Bruch, J. Spykman, M. Grude, T.H. Wichter, G. Breithardt. WWU Münster, Innere Medizin C, Münster, Germany

Background: Mitral annular velocities derived from tissue Doppler imaging (TDI) complement traditional variables in the evaluation of left ventricular (LV) performance. The mitral E/E' ratio has been suggested as an estimate of LV filling pressures in selected subsets of patients. However, E/E' has not been validated in patients with primary or secondary mitral regurgitation (MR).

Methods & Results: 14 patients (pts.) with MR (prolapse (n=6), flail leaflet (n=3), rheumatic degeneration (n=3); mean age 3.2±0.3, age 49±11 y., PMR group), 26 pts. with MR secondary due to ischemic (n=19) or dilated cardiomyopathy (n=7) (mean age 2.7±0.3, age 60±12 y., SMR group) and 29 asymptomatic controls (age 56±11 y., CON group) underwent echocardiographic measurements of mitral annular velocities (E, A, E/A-ratio) and mitral inflow velocities (E, A, E/A-ratio). Mitral annular velocities (S', E', A') derived from pulsed TDI were obtained at the septal mitral annulus. In pts., LV end-diastolic pressure (LVEDP) was derived from left heart catheterization.

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151 Improvement of left ventricular diastolic function after successful catheter ablation for lone paroxysmal atrial fibrillation.

P. Reant, S. Latitte, P. Jais, V. Le Bouffot, R. Weerasooriya, R. Roudaut, M. Haissaguerre. Hopital Cardiologique Haut-Leveque, 33, PESSAC, France

Background: We investigated whether lone atrial fibrillation (LAF) was the cause of heart failure remodeling using serial transesophageal echocardiographic (TEE) studies.

Methods: 28 pts. (mean age 52±9 yrs, 5F) underwent successful ablation of LAF by pulmonary vein isolation in combination with mitral islets linear ablation. TTE measurements including parameters from pulsed Doppler, Doppler tissue imaging, acoustic quantification and transmural flow velocity propagation were prospectively acquired before and 1, 3 and 6 months after the ablation procedure.

Results: In all 28 pts, stable sinus rhythm was maintained during follow-up. Follow-up MR was confirmed by Doppler tissue imaging (VT) as well as pulmonary A wave velocity and TEI index were significantly improved in the entire group at 3 and 6 months. In 7 pts who had baseline E/A ratio <1, a normal profile was addition-ally observed after ablation. Progressive significant reductions of left atrial dimensions from both parasternal and apical views were documented during follow-up.

No significant difference was observed before and after treatment for LV dimen-sion (28pts), systolic (28pts) and conventional diastolic parameters (E and A mitral waves)(21pts).

Echocardiographic results:

<table>
<thead>
<tr>
<th>Group</th>
<th>LA long. parietal diameter</th>
<th>LA longitudinal 4C diameter</th>
<th>LVEDP</th>
<th>LMAD</th>
<th>E/E'</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON (n=29)</td>
<td>67±8</td>
<td>1.20±0.35</td>
<td>8.8±1.3</td>
<td>11.6±2.5</td>
<td>11.3±2.0</td>
</tr>
<tr>
<td>PMR (n=14)</td>
<td>70±10</td>
<td>1.74±0.64</td>
<td>10.2±2.5</td>
<td>12.3±3.2</td>
<td>11.2±2.1</td>
</tr>
<tr>
<td>SMR (n=28)</td>
<td>30±11</td>
<td>2.12±1.32</td>
<td>4.7±1.11</td>
<td>5.7±3.1</td>
<td>6±2.5</td>
</tr>
</tbody>
</table>

Conclusion: Elimination of LAF is associated with improvement of LV diastolic function and significant reduction of LA dimensions suggesting that the arrhythmia is linked to these abnormalities.

152 A prevalence and determinants of diastolic dysfunction in a general population.

A. Rybakow, T. Kuznetsova, S. Matulina. Institute of Internal Medicine, Lab. of Cardiology, Novosibirsk, Russian Federation

The incidence of primary diastolic heart failure (DHF) in ageing European populations is remarkably rising. But DHF prognosis and its prevalence in general population is still unclear.

Impaired left ventricular (LV) diastolic function plays an important role in such common cardiovascular disorders as hypertension, ischemic heart disease, and congestive heart failure.

The purpose of this investigation was to assess the prevalence of LV diastolic dysfunction according to Doppler criteria, and to analyze its determinants in general population.

Methods: The cross-sectional study was carried out in Novosibirsk, Russia in the frame of WHO MONICA Project. Doppler analysis of LV inflow was performed in general population sample of 346 men aged 35-54 (technically inadequate patients and those with the presence of systolic cardiac failure and aortic regurgitation were excluded). Peak flow velocity in early diastole (peak E), in late diastole (peak A), and the E/A ratio were measured. All measures were compared with healthy refer-ence group (n=68) selected from the same population.

Results: Prevalence of LV diastolic dysfunction was of 24.7% in men under 50 (E/A<1.0) and was of 33.2% in those above 50 (E/A<0.5). In the entire sample, peak E, peak A and E/A ratio were, respectively: 49.0±10.4 cm/s, 45.0±8.6 cm/s and 1.13±0.34 cm/s. In the entire sample and healthy group the age, heart rate, systolic blood pressure (SBP) and LV pressure fractional shortening by multivariate models were strongly related to early and late diastolic transmural peak velocities and E/A ratio. Age was negatively associated with peak E (r=0.58, p<0.001) and E/A ratio (r=0.02, p=0.001) and positively associated with peak A (r=0.25, p<0.001) in both groups, and univariate correlation was not markedly attenuated by adjusting for other factors tested in multivariate model. SBP within normal range in reference group negatively correlated with E/A ratio (b=0.009, p=0.01), but did not reach significant values for absolute parameters as peak E and A. In the population, mean wall thickness at end-diastole was an independent predictor of E (r=-0.68, p<0.05). A peak (r=0.16, p=0.001) and E/A ratio (r=-0.04, p=0.04) was highly associated with age, blood pressure, heart rate, LV systolic function and wall thickness.

Conclusion: The prevalence of LV diastolic dysfunction in middle-age male popu-lation is relatively high: about 29%. In general population Doppler parameters of LV diastolic filling are associated with age, blood pressure, heart rate, LV systolic function and wall thickness.