ExPHT was associated with reduced cardiac event-free survival (27±7% vs. 53±9%, p=0.02). In multivariate Cox proportional hazard model, the independent predictors of events were resting E/Ea ratio (p=0.01), aortic peak velocity (p<0.0001), indexed left atrium area (p=0.005), LV global longitudinal strain (p=0.04) and ExPHT (hazard ratio=1.9, p=0.04). When adding Ex-induced changes in aortic mean gradient to the multivariate model, ExPHT remained an independent predictor outcome (p=0.033).

Conclusion: In asymptomatic patients with severe AS, the main determinants of ExPHT are the severity of AS and the Ex-induced changes in LV filling pressure. ExPHT is associated with 2-fold increased risk of cardiac events.

**January 13th, Friday 2012**

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Percutaneous mitral commissurotomy in the pregnant woman

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The mitral stenosis (MS) is the most common valvular disease in the Maghreb; young women of procreation age are most concerned.

Percutaneous mitral commissurotomy (PMC) has changed the prognosis of symptomatic MS of pregnant woman.

We report our experience on eighty-three patients requiring PMC during the third trimester of pregnancy, between March 1998 and May 2010.

Their mean age was 29±4, 9 years; the presumed age of pregnancy was 27.5±2.9 weeks of gestation. Fifteen were in New York Heart Association class II; fifty in class III and eighteen in class IV. Twelve patients with atrial fibrillation. Wilkins score calculated in all patients with an average 7±2.

No fetal deaths were noted after the procedure. 1 case of stroke, transient. No abortions occurred following the procedure.

We report a maternal death fifteen days after delivery. All patients have improved after the surgery at least one class of NYHA.

Mitral surface area and hemodynamic parameters improved significantly after PMC; mean left atrial pressure fell from 30±6.3 to 12.2±7 mmHg, mean transmitral gradient from 21±7.2 to 6.1±3.2 mmHg and mitral valve area from 0.8±0.15 to 2.15±0.2 cm².

During pregnancy the PMC is the treatment of choice of MS must be performed by an experienced team because the angle of the trans septal puncture is subject to changes in pregnant women.

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New indices for prediction of the left ventricular ejection fraction after correction of an organic mitral regurgitation

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Objectives: This study analyzed the association between pre-operative rest echocardiography and the 6-month post-operative left ventricular ejection fraction (LVEF) in organic mitral regurgitation (MR).

Background: LV end-systolic diameter is the marker of LV function in patients with organic MR associated to survival and post-operative EF, but still some patients have nowadays a depressed post-operative LV EF despite correct diameters.

Methods: 88 patients (62.6±1.4 yo) were prospectively recruited. They all got a complete echocardiography including the assessment of LV-deformations before the MR repair and all had an echocardiography at 6-month after-surgery. Exclusion criteria were: coronary artery disease, other organic valvular disease, uncontrolled arrhythmia, hemodynamic instability.

Results: The principal parameters not correlated to post-operative LVEF (0.5±0.08) are displayed in table I. The univariate analysis concluded that: LV end-systolic diameter (36±0.7 mm, R=–0.34, p=0.009); Left atrial area (26.4±0.1 cm²; R=–0.37, p=0.011); LV end-diastolic volume (149±9±5.2 ml; R=–0.31, p=0.019); LV end-systolic volume (52.3±2.5 ml; R=–0.35, p=0.003); Mitral annulus diameter (37±0.7 mm; R=–0.25; p=0.01). Using a multivariate linear regression, the GLS/LV end-systolic volume (~4.6±0.3; p=0.01) and the left atrial diameter (44.7±0.8 mm; p=0.01) were the best predictors of post-operative LVEF (R²=0.22).

Conclusions: In organic MR, LV end-systolic diameter is a key parameter to propose surgery. We demonstrated that global longitudinal strain (GLS, %) normalized for the end-systolic volume is, with the LA size, an important determinant of post-operative EF.

Table – Main results

<table>
<thead>
<tr>
<th>Parameter</th>
<th>mean±SE</th>
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<tbody>
<tr>
<td>Left atrial volume (ml)</td>
<td>44.7±0.8</td>
</tr>
<tr>
<td>LV end-diastolic diameter (mm)</td>
<td>55.9±0.9</td>
</tr>
<tr>
<td>LVEF (%)</td>
<td>66.2±0.8</td>
</tr>
<tr>
<td>LVOT VTI (cm)</td>
<td>17.3±0.5</td>
</tr>
<tr>
<td>Mitral inflow E-wave (cm/s)</td>
<td>91.8±5.9</td>
</tr>
<tr>
<td>S' mitral (lateral) (cm/s)</td>
<td>10.4±0.4</td>
</tr>
<tr>
<td>Tricuspid maximal velocity (m/s)</td>
<td>2.8±0.1</td>
</tr>
</tbody>
</table>

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Impact of mitral regurgitation on exercise capacity and clinical outcomes in patients with ischemic cardiac dysfunction

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Background: There is uncertainty and debate regarding whether ischemic mitral regurgitation (MR) is a secondary epiphenomenon resulting from left ventricular (LV) dysfunction or confers an independent effect on exercise capacity and outcomes.

Objective: We tested whether ischemic MR negatively impacts exercise capacity, cardiovascular morbidity and mortality in patients with coronary artery disease (CAD) and inferior wall motion abnormality patients, independent of LV dysfunction.

Methods: Clinical follow-up over 5 years was obtained in 77 patients (age 64±10 years, LVEF 54±11%) with at least mild ischemic MR from CAD and evidence of inferior wall motion abnormality, who had exercise stress testing with perfusion imaging within 24 hours of echocardiography. Patients with active heart failure, ischemia, intrinsic valve disease, pulmonary and vascular disease were excluded. Exercise capacity (METs, peak double product) was tested for relation to MR (vena contracta (VC) and jet area), LV size and function, and pulmonary pressures. Cox proportional hazards analysis assessed whether MR predicted cardiovascular events, including hospitalization for heart failure, acute coronary syndrome, and myocardial infarction, and cardiovascular (CV) and total mortality.

Results: By multivariate analysis, independent predictors of functional capacity (METs and peak double product) were MR vena contracta (VC; r²=0.62, p<0.0001) and LV end-diastolic volume (EDV; r²=0.57, p=0.05). MR jet area contributed similarly (r²=0.61, p<0.0001). MR VC ≥2 mm (moderate ischemic MR) and age were independent predictors of CV events and death (HR 6.72 for MR, p=0.04).