in 2005-2010. The etiology and type of valvular heart disease have been classified on the basis of surgical reports.

Results: The distribution of etiologies differed significantly different between the two periods (p<0.0001). We noted a decrease in rheumatic valvular disease with 1,558 cases (95%) in the first period and 894 cases (81%) in the second period. Consistently, we observed an increase in degenerative etiology from 1.6% to 16%, and particularly fibroelastic degeneration: 20 (1.6%) and 146 (13.3%) cases. The mechanism of valvular disease (mitral regurgitation versus mixed mitral valve disease and mitral stenosis) differed significantly (p=0.0001) for both periods. With regard to mitral regurgitation cases only, degenerative etiologies increased from 11.4% to 38.5% of cases between the two periods (p=0.0001). Patients had a mean age of 36.3 years with a female predominance (two thirds of patients), especially in rheumatic etiologies. Age (p=0.0001) and the proportion of urban residents (p=0.04) was increased in degenerative causes.

Conclusion: The study shows the emergence of degenerative valvular disease in Vietnam and a decrease in rheumatic valvular heart disease, which nevertheless remains the most common etiology.

0493 Mutations in the gene encoding FilGAP as a cause for mitral valve prolapse
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The mitral valve prolapse (MVP) is a common cardiac disorder which affects 2-4% of the population and remains one of the most frequent indications for valvular surgery. The familial nature of MVP has been proposed for many years and so far, FLNA remains the only identified gene.

Recently, it has been shown that FLNA mutations deregulate the RhoA/Rac1 GTPases balance and provided evidences for a role of the Rac1 specific GTPase activating protein, FilGAP, in this network. FilGAP is a recognized FlnA-binding RhöGTPase-activating protein.

Giving the tight interactions of FlnA and FilGAP, we first tested, using a candidate gene approach, the hypothesis that FilGAP, encoded by ARHGAP24, could be involved in MVP.

We have sequenced ARHGAP24 in 95 MVP operated patients and identified 3 rare missense mutations in highly conserved residues (FilGAP p.R95Q; p.P417H and p.T481M). One mutation was novel and the 2 others present a minor allele frequency lower than 0.1% in EVS. Moreover, p.T481M co-segregates with the pathology in a family with 3 affected patients.

We then investigated the impact of these mutations in HEK293 cells. The role of FilGAP is to decrease Rac1 activity and thus to regulate cell processes involved in actin cytoskeleton properties as adhesion, protrusion and intracellular dynamics.

From pull-down assays, we have shown that FilGAP mutations alter Rac1 GTPase activity and significantly decrease the FilGAP interaction with the active form of Rac1 (p<0.01). We have also shown, using the XCELLlence system, that cell adhesion and spreading was significantly increased with mutated FilGAP (p<0.01). Our results indicate that ARHGAP24 variants are loss-function mutations.

Moreover, we demonstrate that FilGAP mutations alter the downstream signaling pathway by two different mechanisms. FilGAP p.P417H and p.T481M decrease the interaction with FlnA while p.R95Q impacts the plasma membrane anchorage.

This work reinforces the involvement of GTPases pathway in MVP pathogenesis.

0539 Value of the mean mitral gradient predictive of dyspnea in mitral stenosis in stress echo Doppler cardiac at peak effort
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Background: In stress echo Doppler of mitral stenosis (MS), the cut point of the mean mitral gradient (MMG) at the peak of the effort proposed by the American Recommendations for mitral dilation is 15mmHg. However, this value is questioned in the literature

Objective: In stress echo Doppler, determine the peak effort cutoff value of the MMG prediction of the occurrence of dyspnea justifying percutaneous mitral dilation in patients with MS

Methodology: Prospective descriptive study conducted in the Cardiology Department Hospital Béni Messous (Algiers) between March 2008 and December 2010. Have been included patients with mitral area ≤2 cm², functional class I to III NYHA and systolic pulmonary artery pressure ≤60mm Hg at rest. Dyspnea was sought to stress test on a treadmill (30W/3min). Dyspneic patients are those who have stopped the examination for a load ≤90W due to the occurrence of severe dyspnea. The stress echo Doppler was performed on table echocardiography (30W/3min). The MMG was measured at baseline and at the end of each level to the peak of the effort

Results: Three hundred patients were included (mean age 42.3±1.3 years, 81.3% female). At the end of the stress test, 182 had dyspnea (60.6%). Areas under the curve of the MMG at peak stress is equal to 0.80, 95% confidence interval: 0.75-0.85 (p<10⁻⁹). In predicting dyspnea justifying percutaneous mitral dilation, the optimal cutoff value of the MMG corresponds to 33.5 mmHg; sensitivity=0.55, specificity=0.96, positive likelihood=13.21, positive predictive value (PPV) =95%, positive predictive error (PPE) =5%. Information Expected Capacity (IEC) =109. However, the diagnostic quality of the MMG at maximum effort with the cut point of 15 mmHg proposed by the American Recommendations is low: sensitivity=0.98, specificity=0.008, positive likelihood=0.98, PPV=60.0%, PPE=0.0%, IEC= 0.25.

Conclusion: In this study, the optimal cutoff value of the MMG predictive peak effort dyspnea justifying the percutaneous mitral dilation is 33.5 mmHg, above the cut point proposed by American Guidelines.

January 17th, Saturday 2015

0179 Assessment of paravalvular aortic regurgitation after transcatheter aortic valve implantation using cardiac magnetic resonance imaging: a comparative study with echocardiography and angiography
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Assessment of paravalvular aortic regurgitation (AR) after transcatheter aortic valve implantation (TAVI) using Edwards SAPIEN XT valve remains challenging using transthoracic echocardiography (TTE) or angiography. Cardiac magnetic resonance imaging (c-MRI) has a low intraobserver and interobserver variability in the assessment of regurgitant volumes and might be more reliable to assess AR post-TAVI. We therefore aimed to evaluate the value of c-MRI to assess paravalvular AR after TAVI. Between February 2012 and March 2013, 132 consecutive patients underwent successful TAVI using exclusively Edwards SAPIEN XT prosthesis. AR was evaluated by c-MRI, TTE and angiography in 45 patients (27 women, mean age 84.1±17.1 years). Angiography was performed immediately after TAVI whereas TTE and c-MRI were performed one month after implantation. At baseline c-MRI, the mean aortic regurgitant fraction (ARF) was 21.3±12.5%. An important AR (≥ grade II) was present in 24 (56%) patients using c-MRI (30< ARF≤50 Y%) whereas it was only observed in 18 (40%) and 12 (27%) patients using TTE and angiography, respectively. Interestingly, there was a poor correlation between c-MRI and TTE (r=0.16, p=0.28) and between c-MRI and angiography (r=0.30, p=0.06). In contrast, there was a good correlation between TTE and angiography (r=0.67, p<0.001). TTE underestimated AR by one degree in 9 patients, and by two degrees in 6 patients as compared to c-MRI. The results of our study suggest that TTE and angiography may underestimate...
the severity of AR after TAVI as compared to c-MRI. Furthermore, there is a poor correlation between c-MRI and TTE or angiography. Further studies are mandatory to confirm our results in a larger population.

0434
Impact of low flow on long-term survival in patients with severe aortic stenosis and preserved left ventricular ejection fraction: a cardiac catheterization study
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Background: Previous studies suggested that a low flow defined as an indexed stroke volume (SVi) < 35 ml/m² may be an important determinant of outcome in patients with severe aortic stenosis (AS). However, its quantification using echocardiography may be subject to error measurement. The aim of this study is to determine the impact of low SVi determined during cardiac catheterization on long-term survival among patients with severe aortic stenosis and preserved LV ejection fraction.

Methods and Results: Between 2000 and 2010, 768 patients with preserved LVEF (>50%) and severe AS (valve area ≤1cm²) without other valvular heart disease underwent cardiac catheterization. SVi was derived from catheterization data.

Mean age was 74.8±8 years, 42% were female, 46% had coronary artery disease and mean LVEF was 72±10%. Overall, low SVi was found in 27% (n=...) of AS patients.

As compared to patients with normal SVi, those with decreased SVi were significantly older (p<0.0001) and had more frequently atrial fibrillation (p<0.0001). In addition, they had lower LVEF (p=0.04); aortic valve area (p=0.0001), mean pressure gradient (p=0.001), systemic arterial compliance (p=0.0001) and higher systemic vascular and pulmonary resistances (p=0.0001).

Ten-year survival was significantly reduced in patients with lower SVi as compared to those with normal SVi (41±5% vs. 63±3%; p=0.0007, Figure). After adjustment for all other risk factors, SVi was independently associated with long-term survival (hazard ratio =0.97, 95% CI: 0.95-0.99; p=0.01).

Conclusion: Low SVi measured invasively is frequent in patients with severe AS and preserved LVEF and is a powerful and independent predictor of survival. SVi should be systematically measured and used as an additional parameter for risk stratification of patients with severe AS.

0196
« Steb by step » expansion of Edwards SAPIEN XT prosthesis during transcatheter aortic valve implantation
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Objectives: To evaluate feasibility, safety and advantage of underexpansion of Edwards SAPIEN XT prosthesis during transcatheter aortic valve implantation (TAVI).

Methods: We retrospectively analyzed 157 transfemoral TAVI procedures performed between October 2012 and December 2013 in the University Hospital of Rouen. Thirty-six (22.9%) patients had intentional underexpansion of the Edwards SAPIEN XT prosthesis since more than 20% area oversizing was anticipated with Computed tomography (CT) assessment of aortic annulus. Underexpansion of Edwards SAPIEN XT prosthesis was performed by reducing the volume of fluid within the valve deployment balloon. The Primary endpoint was aortic regurgitation (AR) at the end of the procedure.

Results: Mean age was 83.4±5.8 years and the mean logistic EuroSCORE of 15.4±9.6%. The initial fluid volume used for valve deployment was 90.1±31% of the theoretical total volume (TTV) without significant difference among the 3 sizes of prostheses (90.2±4.1%, 89.5±2.6%, and 84.8±3.2% for 23, 26, and 29-mm valves, respectively). AR immediately after the first inflation was grade ≤1 in 20 (55.6%) pts, grade II in 9 (25%) pts, and grade III in 7 (19.4%) pts. Stent diameter measured immediately after first inflation represented 94.2±4.1% of the prosthesis theoretical diameter. Post-dilatation was deemed necessary in 14 cases (39.4%). At the end of the procedure, AR was ≤ grade I in 34 (94.4%) patients and grade II in the 2 remaining patients. After post-dilatation, one patient presenting with fatal aortic annulus rupture. Other procedures were safe without stroke, myocardial infarction, or prosthesis migration.

Conclusion: Our study suggest that underexpansion of Edwards SAPIEN-XT prosthesis is feasible during transfemoral TAVI procedures when more than 20% area oversizing is anticipated by CT. However, post-dilatation is mandatory in about 40% of cases to reduce significant residual aortic regurgitation but can be complicated by aortic annulus rupture.

0298
Influence of gender on mortality and perioperative outcomes in patients undergoing transcatheter aortic valve implantation: insights from the France 2 registry
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Aim: Transcatheter aortic valve implantation (TAVI) is an alternative to surgical aortic valve replacement for high-risk patients. The relative event rates following TAVI have not yet been well described and seem to differ between genders. We sought to determine gender imbalances in TAVI patients with regard to baseline presentation, management, and prognosis.

Methods and results: A total of 3,972 patients underwent TAVI and were prospectively included in the FRANCE 2 registry.

Women (n=1967) presented with older age and lower rates of coronary artery disease, chronic obstructive pulmonary disease, renal failure, and arrhythmia, though higher prevalence of hypertension and congestive heart failure (43.7% vs. 39.7%; p=0.010). EuroSCORE was similar between genders. Women presented with smaller aortic annulus and were implanted with smaller bioprostheses.

At 1 month, mortality rates were similar between genders. Multivariate analysis revealed the following independent predictors for 1-month all-cause mortality: female gender; New York Heart Association (NYHA) Class III or IV; transapical approach; moderate to severe postprocedural aortic regurgitation. We observed a specific interaction between gender and EuroSCORE, confirming EuroSCORE as less capable to discriminate women in order to establish 1-month mortality. Women presented with lower 1-year mortality rates than men (19.3% vs. 23.7%; p=0.021). Female gender was an independent predictor of 1-year survival (HR: 0.71, 95% CI: [0.57-0.88]).

Conclusion: Men and women exhibited several differing baseline characteristics, as well as procedural and clinical outcomes. Notably, Euroscore proved inconvenient for 1-month survival prediction in women. Women also presented with an 18.5% decrease in 1-year all-cause mortality compared to men.

0177
Feasibility and safety of early discharge after transfemoral transcatheter aortic valve implantation
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