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Discordance between mitral valve area and mean transmitral pressure gradient in mitral stenosis: is mean gradient marker of the severity or parameter of tolerance in severe mitral stenosis?

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Background Definition of objective criteria to conclude the severity of MS is still important.

Aims (1) to evaluate correlation between the mean transmitral gradient (MTG) and severity of MS in patients with a severe or very severe MS (2) To analyze the different parameters which determine the mean transmitral gradient.

Methods We conducted a prospective study including fifty patients admitted for severe or very severe MS, over a period of one year.

We first studied the correlation between mitral valve area and MTG. Then we separately analyzed two groups of patients: those with a MTG <10mmHg (group 1) and those with a MTG>10mmHg (group2). We performed for each group an univariate correlation between MTG and dyspnea, heart rate, cardiac decompensation, regularity of rhythm, function of right ventricle and systolic pulmonary artery pressure (SPAP).

Results 64% of our patients had a severe MS and 36% had a very severe MS. 52% had a MTG <10mmHg and 48% had a mean gradient>10mmHg; suggesting lack of correlation between the severity of MS and MTG (Pearson coefficient R: –0.137).

Regarding dyspnea, 90% of patients in group 1 had a dyspnea stage II of NYHA and 70% of patients in group 2 had a dyspnea stage III (41%) or IV (29%).

The analytical study of heart rate (HR) and the presence of cardiac decompensation compared with MTG showed a significant correlation. Among the patients in group 1, 96% had a HR between 60 and 100 bpm and no patient was in cardiac decompensation. In group 2, 54% (13 patients) had a HR >100 bpm and 7 of them (53%) were in left heart failure. The study of SPAP in the two groups found a statistically significant correlation between the SPAP and MTG.

Conclusion Mean transmitial gradient is a good indicator of the tolerance of mitral stenosis, but it reflects poorly severity because it depends on several hemodynamic parameters.

The author hereby declares no conflict of interest

0122

Frequency of PAH in scleroderma Algerian patients

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Background Systemic Sclerosis (SSc) represents the main connective tissue disease associated with PAH. This PAH is the leading cause of death, which only screening and early diagnosis can improve prognosis.

Echocardiographic screening represents so fare the ideal tool for the early detection of this PAH.

Aim Evaluate the prevalence of PAH in Scleroderma Algerian Population and its distribution according to clinical forms of the disease.

Methods We conducted a cross-sectional descriptive study from Dec. 2010 to Dec. 2013.

202 patients (177 women and 25 men) with SSc were enrolled. We used a screening algorithm based on the maximum velocity of tricuspid regurgitation (VIT) and dyspnea. This defined patients at high risk (VIT >3 m/s or VIT between 2.8 and 3 m/s with dyspnea unexplained by another cause). Who were submitted to right heart catheterization (RHC) to confirm PH.

Results Pulmonary hypertension suspected on echocardiography was confirmed by RHC in 68.2% of cases. It was a pre-capillary PH.VIT ≥3.48 m/s strongly suggests PH.

The prevalence of PAH was 6%.

The mean delay of it occurrence was 7.08 years after first diagnosis of SSC. PAH occurred in the first five years in 58.3% of cases and after five years in 41.6% of cases.

It concerns the diffuse cutaneous forms in 33.3% or 0.5% of diffuse forms of our patient’s population and limited in 58.3% of cases or 0.58% limited cutaneous forms in our patients population. A frequency of 0.08% was found in limited form.

Dyspnea is the primary symptom found, 67% of patients were in class III and IV at diagnosis.

Conclusion Prevalence of PAH in scleroderma was 6%, our findings are similar to the results reported in the literature: 5-12%, through echocardiographic screening and catheterization confirmation. This strengthens the fact that an echocardiogram should be performed at the time of SSC diagnostic and this regardless of the clinical form of SSc.

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0313

Utility of biomarkers in evaluating success of percutaneous mitral valvuloplasty in patients with severe mitral stenosis

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Introduction Percutaneous mitral commissurotomy (PMC) is the gold standard technique for the management of severe rheumatismal mitral stenosis (MS). We investigated the utility of BNP, NT pro-BNP, MR pro-ANP, CD146 and sST2 in evaluating the success of the PMC procedure.

Methods All 5 biomarkers were measured one day before and one day after the procedure in 43 patients presenting with severe MS (defined as mitral valve area (VA) by planimetry <0.2cm²) and submitted to PMC in 2 large university hospitals in France (CHU Bichat, Paris; CHU Jean Mijoz, Besançon).

Patients were classified as procedural success (VA >1.5cm² or increase in VA >0.5cm²) or failure (VA <1.5cm² or increase in VA <0.5cm²) by echocardiography. The absolute decrease in each biomarker between before and after the procedure was compared for each patient using the paired Student t test.

Results In total, 43 patients were included (80% women, average 63.7 years), of whom 30 (70%) were judged to have a successful procedure by echocardiography; 11 (25%) were classed as procedural failure, and 2 (5%) had a major complication (1 mitral insufficiency requiring surgery, 1 tamponade). Among the 30 patients with procedural success, there was a significant decrease in MR pro-ANP (−48%74, p=0.02) and CD146 (−43±105, p=0.03). There was no significant decrease in patients classed as procedural failures. There was no significant decrease in BNP, NT pro-BNP or sST2 in patients with either successful or failed procedure.

Conclusion There is a significant decrease in MR pro-ANP and CD146 after successful PMC. The difference is more pronounced in younger patients and in those in sinus rhythm. These two biomarkers could be of use in evaluating the immediate success of PMC.

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0354

Paravalvular aortic regurgitations with SAPIEN 3 prosthesis lowest seen with balloon-expandable TAVR

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Background Paravalvular aortic regurgitation (PAR) after TAVR has been associated with increased mortality. The Sapien 3 device (Edwards Lifesiences) is different than the prior devices released by the same manufacturer.
in that it has a skirt designed to prevent paravalvular leak, improved coxial alignment, and more accurate positioning.

Aims To evaluate paravalvular aortic regurgitations after 30-day after TAVI using the Edwards SAPIEN 3 prosthesis.

Methods Prospective monocentric study including 66 high-risk or non-operative patients with severe aortic stenosis undergoing TAVI using Edwards SAPIEN 3 prosthesis via transfemoral access, between September 2014 and March 2015.

Results Mean age of patient was 84±7.1 years (70% female). The MDCT estimated an aortic annular diameter 25.07±2mm. Mean logistic EuroSCORE was 15.8±10.8. In our study, the device success rate was 98.5%. The pros thesis has been deployed correctly in all cases and no failure of valve or embolization had occurred. Post TAVR, mean transaortic gradient decreased from 46.0±12.3mmHg to 8.2±3.7mmHg (p<0.001). No patient had moderate or severe PAR. At 30 days follow up, transthoracic echocardiography (TTE) showed that the PAR was absent or trivial in 66% of patients and mild in the remainder. Possible reasons for this low PAR rate include: 1) the outer polyethylene terephthalate sealing cuff, which enhances paravalvular sealing; 2) more accurate positioning; and 3) improved sizing with adjunctive MDCT.

Conclusion In our study, TAVI with Edwards SAPIEN 3 demonstrated lower paravalvular aortic leak rates than earlier generation devices in patients at high risk for surgery.

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0298
Prosthetic valve endocarditis. A 15-years cohort study
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Introduction Prosthetic valve endocarditis (PVE) is an uncommon complication after valve replacement surgery, but potentially fatal. The scarcity of clinical trials makes harder the diagnostic and therapeutic approach of this entity.

Aim To define the clinical characteristics and in-hospital evolution of a population with PVE.

Methods Retrospective study based on a sample of 173 patients (P) with the diagnosis of infective endocarditis (IE), according to the modified Duke criteria, admitted from 1998 to 2013. We analyzed demographic and clinical features, complications, and in-hospital mortality of P with PVE.

Results We found 34 P (20%) with PVE, mean age 60.2±17.6 years with a female predominance (53%). The most common form was the community-acquired IE, registering 11 P (32%) with health care-associated IE. There was a preferential engagement of the mitral valve (56%) and 26% had early PVE. The cardinal complaints at presentation were constitutional symptoms (97%) and fever (74%); 50% of P showed signs of acute heart failure (HF). The most common analytical abnormalities were elevated inflammatory biomarkers (CRP 94% and leukocytosis 41%), anemia (88%) and increased creatinine (60%).

The microbial agent was isolated in 24 P (71%), being Staphylococcus spp (26%) and Streptococcus spp (21%) the most common. The prosthesis dehiscence (60%), severe regurgitation (29%) and perivalvular abscess (21%) were the most frequent complications seen at initial echocardiographic evaluation. The most common adverse events were acute kidney injury (74%), persistence of HF (56%), septic shock (15%) and stroke (12%). There was need for urgent referral to surgery in 38% of P. The in-hospital mortality was higher than other P with IE (21% vs 13%).

Conclusion The PVE is associated with a poor prognosis at short term. Its adverse developments should lead to the early identification of riskier P and timely consideration of the possible benefit of surgery.

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0369
Surgical valvular reoperations: indications and reoperations time – A series of 45 cases
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Objectives Valvular heart disease still common despite improved health conditions that have reduced the incidence of rheumatic fever. Surgical and interventional indications have expanded and today we operate at early stages, sometimes even an asymptomatic stage. Valvular reoperation is required in about 15% of cases during the evolution of an operated valve disease. We report in this study the results of surgical valvular reoperations to identify the indications for these reoperations.

Methods This is a retrospective study of 45 patients aged between 18 and 70 years, admitted to the cardiology department from January 2011 to July 2013, and having a valve disease already operated and requiring reoperation.

Results Our series consisted of 45 patients; the average age is 41 years. 73% of patients are women and 27% of men (sex ratio of 3). The mitral valve reoperations are motivated in most cases by a restenosis after a surgical commissurotomy (84%) and in 7% of cases by a prosthetic dysfunction, while aortic valve reoperations are represented primarily by the dysfunction of prosthesis (44%) and aortic regurgitation neglected (56%). Finally, the reoperation on the tricuspid valve is dominated essentially by regurgitation neglected during the first intervention (62%). The average time between the two interventions, any kind confused, is 21 years, but this “timing” is variable if we take into consideration the repair technique.

Conclusion Cardiac reoperations may occur during the evolution of a valvulopathy. The patient should be warned of this and the possibility of reoperation should be considered at the first cardiac surgery. Good initial cardiac evaluation is needed to overcome the risk of reoperation for valve disease neglected.

Keywords reoperation, prosthesis dysfunction, degeneration, bioprostheses, valvuloplasty, commissurotomy.

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