

Session 4 – Valvular Diseases, Protheses, Endocarditis

Thursday May 28 – 15.30 – 16.00

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Cardiac involvement in hemoglobin SC disease compared to homozygous sickle-cell anemia.

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Background Hemoglobin SC (HbSC) disease and homozygous sickle-cell anemia (SCA) are the most frequent genotypes (accounting for respectively 25% and 70%) of sickle-cell disease. Although the SCA cardiac involvement was well studied, the cardiac remodeling associated to HbSC has never been specifically investigated.

The aim of the study was to describe the HbSC cardiac remodeling versus SCA.

Method Using a case-control design, 61 HbSC (mean age 31.3±10.0 years, 36 women) patients underwent a comprehensive echocardiography and were compared to 61 SCA patients in stable conditions.

LV end diastolic volume index and LV ejection fraction were measured by Simpson method. LV mass index, left atrial volume index, septal E/e' ratio, peak tricuspid regurgitation velocity (TRV) and cardiac index were also measured as recommended. All the parameters were the average of three measures.

Results Both LV morphological and diastolic functional parameters differed dramatically between the two groups of patients (table, mean±SD). Moreover, the pulmonary artery systolic pressure as estimated by TRV was lower in HbSC patients.

Conclusions Cardiac remodeling is very different in HbSC compared to SCA. Clinical interpretation of echocardiography data should be adjusted to each variant of the disease. Moreover, this study is further evidence that the both genotypes of sickle-cell disease have different organ involvements and should not be pooled in clinical studies. Specific guidelines for follow-up of HbSC patients should be established.

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Ross procedure as a treatment of aortic valve endocarditis: long-term follow-up of 42 patients

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Background Aortic root replacement with a pulmonary autograft (Ross intervention) can be performed as a treatment of aortic valve endocarditis, avoiding prosthetic valve implantation in septic context. We sought to assess long-term outcomes of Ross procedure in this indication.

Methods From April 1992 to March 2009, Ross intervention was performed in 42 patients suffering from an active or ancient aortic valve endocarditis. Mean age was 34±8 years. 15 patients (36%) had extensive perivalvular involvement, and surgery was urgent in 16 patients (38%). We performed a prospective clinical and echocardiographic follow-up of this population.

Results Median follow-up was 10 years (range 4-21 years). Overall survival at 10 and 15 years was 87±5% and 81±8% respectively. Perioperative mortality was 4.7% (2 patients) and no late cardiac death was reported. Eight patients (19%) underwent repeat surgery for autograft and/or homograft dys-

function at a median time of 8.4 years (3 months to 18 years). Rate of recurrent endocarditis was low (7% – 3 patients), including 1 in a context of persistent intravenous drug abuse. Clinical follow-up showed a good functional status for all patients with NYHA ≤II, and less than 25% of patients receiving cardiovascular medication. Late echocardiographic follow-up demonstrated well-functioning autograft and homograft, with only one severe aortic regurgitation, and one significant increase in pulmonary mean gradient.

Conclusions Ross intervention in aortic valve endocarditis is an interesting alternative to prosthetic valvular replacement in a selected population, with a high rate of survival free from any cardiovascular event or medication requirement.

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Prognostic value of left atrial reservoir function in patients with severe aortic stenosis

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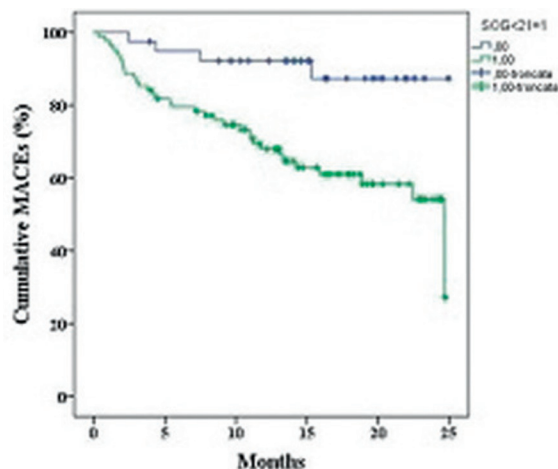
Background Left Atrial (LA) strain analysis by 2D speckle tracking echocardiography (STE) represents an easy and reproducible way to estimate LA function.

The aims of the present study are to assess the LA reservoir function in patients with severe aortic stenosis (AS) and to evaluate its impact on the recurrence of major adverse cardiac events (MACEs).

Methods 128 patients (mean age 79±9 years) with severe AS underwent standard echocardiography to evaluate the left ventricular (LV) and right ventricular function, LA size, aortic valve morphology and gradients. Global peak LA strain (PLAS) is measured by 2D STE during LV systole and represents the LA reservoir function. Overall death, hospitalization for cardiac cause, and worsening heart failure were defined as major adverse cardiac events (MACEs).

Results The mean PLAS (18.4±7.9%) was significantly reduced in AS with respect to the mean values reported in the general population. According to the multivariate linear regression analysis, LV global longitudinal strain, mitral E/e' ratio and systolic pulmonary arterial pressure (sPAP) were the best correlates to PLAS. During follow-up, the predefined MACEs occurred in 39 patients. According to the multivariate Cox regression analysis, a PLAS <21% was a significant predictor of MACEs (HR 2.88, p=0.04), as was CAD (HR 2.68, p=0.004) and the NYHA functional class (HR 2.08, p=0.03) (figure 1).

Conclusions In patients with severe AS, a global PLAS <21% is a strong independent predictor of prognosis. Given the combined influence of LV diastolic and systolic function and PAPs on LA performance, the decline of PLAS might be considered a marker of global myocardial impairment in AS. Further studies are needed to confirm the critical role of LA relaxation in prognosis and to validate its relevance in routine clinical practice.



Abstract 50 – Figure 1.