Contribution of Doppler echocardiography in diastolic heart failure
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Introduction.— Echocardiography is a key consideration in the management of diastolic heart failure, the measurement of ejection fraction of left ventricle is therefore fundamental.

Objective.— In this work we propose to outline the epidemiological, clinical and echocardiographic findings in patients with diastolic heart failure.

Patients and methods.— Our retrospective study included 44 patients with clinical and echocardiographic evidence of diastolic heart failure with ejection fraction ≥ 45%, who were hospitalized during the period from November 2006 to March 2010 at the therapeutic unit of heart failure of Cardiology, CHU Ibn Rochd, Casablanca, Morocco.

Results.— Of a total of 1200 patients hospitalized with heart failure in unit of heart failure. 3.6% had diastolic heart failure with a male predominance (61%), average age of 65.4 years. The dyspnea was constant (95.2%), patients had heart failure NYHA class I (6%), NYHA class II (37.9%), NYHA class III (44%) and NYHA class IV (7%). Doppler echocardiography was performed in all patients, ejection fraction was measured by the method of Simpson biplane and was ≥ 45% in 44 patients who all had elevated filling pressures of left ventricle. Filling pressures of left ventricle were assessed by the study of mitral inflow by pulsed-wave Doppler, with restrictive filling in 68.1% among patients with E/A ratio > 2, deceleration time < 150 ms and time isovolumic relaxation < 60 ms, the mitral flow was normal with E/A ratio: 1 to 2 in 31.8% of cases. In mitral inflow and annulus tissue Doppler: The E/Ea ratio was ≥ 15 in 88.6% of cases and E/Ea ratio ≥ 9 and ≤ 14 in 11.3% of patients and in this case we have had recourse to the analysis of pulmonary venous flow with an Ar—A duration > 30 ms, the measurement of left atrium volume was ≥ 34 ml/m², and the measurement of pulmonary artery systolic pressure was > 35 mmHg.

Conclusion.— Doppler echocardiography in diastolic heart failure measures filling pressures of the left ventricle and also beneficial to the etiologic and prognostic and follow-up.

doi:10.1016/j.acvd.2011.03.036

Multiparametric approach to select patients for cardiac resynchronization therapy: Results at 2 years follow-up
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Background and objectives.— Proportion of non-responders to cardiac resynchronization therapy (CRT) is high (≥ 30%).

Echocardiography has been recently shown to predict a CRT-induced improvement in heart failure with a 6 months follow-up. We aimed to verify whether a combination of echocographic criteria before CRT is still predictable at a 2-year follow-up.

Methods.— Fifty-five patients with left ventricular ejection fraction < 35% (20 ischaemic, 35 idiopathic), mean age 70.4 ± 10.9 years old, NYHA class III-IV, QRS duration 120 ms, were resynchronized. Before implantation, various echographic parameters of dyssynchrony were evaluated: atrioventricular dyssynchrony (AVD), defined by LV filling time/RR < 40%; interventricular dyssynchrony (IVD), defined by a difference between left and right pre-ejection delay > 40 ms. Various criteria of intraventricular dyssynchrony: overlap between inferolateral or anterolateral end-systole and mitral valve opening (Cazeau); aortic pre-ejectional delay (APED) > 140 ms; using tissue Doppler imaging (TDI) in 4 and 2 apical chambers view, maximum difference time to onset (electrosystolic delay) or maximum difference time to peak (electromechanical delay) > 60 ms. Responders were defined as clear functional improvement and absence of heart failure hospitalization. We then evaluated sensitivity (Se), specificity (Sp), positive predictive value (PPV) and negative predictive value (NPV) of isolated and combined pre-CRT echographic parameters.

Results.— The follow-up was 22.6 ± 6.2 months, and 72% of patients were considered as responders. Three patients died. Prediction of CRT response was poor using 1 echographic criterion, independent of the criterion (Se 24%; Sp 43%; PPV 53%; NPV 42%); combination of 2 criteria was better (Se 30%; Sp 86%; PPV 85%; NPV 49%), while various combinations of 3 criteria were highly specific:

1. APED + IVD + Cazeau (Se 29%; Sp 100%; PPV 100%; NPV 29%);
2. APED + AVD + TDI (Se 24%; Sp 100%; PPV 100%; NPV 33%);
3. IVD + TDI + AVD (Se 30%; Sp 100%; PPV 100%; NPV 35%);
4. APED + Cazeau + AVD (Se 11%; Sp 100%; PPV 100%; NPV 30%);
5. AVD + Cazeau + TDI (Se 8%; Sp 100%; PPV 100%; NPV 29%).

Conclusion.— Echocardiography is highly predictive of CRT-induced functional improvement at long-term follow-up, if a combination of 3 pre-implant criteria is used.

doi:10.1016/j.acvd.2011.03.037

Can left ventricular longitudinal function study using 2D speckle tracking predict postoperative atrial fibrillation after aortic valve replacement for aortic stenosis?
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Objectives.— In a series of patients with severe symptomatic aortic stenosis (AS), we sought to assess the value of left ventricular global longitudinal strain (GLS) using 2D speckle tracking to predict the occurrence of atrial fibrillation (AF) after aortic valve replacement (AVR).