

or DTI tricuspid annulus < respectively 10.1 cm/s to 6.09 cm/s and 12.75 cm/s. Echocardiographic parameters predictive of cardiac events overall were: SPAP > 42 mm Hg, a TAPS < 11.5, a FRSRV < 38%, Sa and Aa waves to the DTI tricuspid lower respectively at 10.2 cm/s and 14 cm/s. In multivariate analysis, only the FRSRV < 38% was a factor directly related to the occurrence of cardiac events overall. **Conclusion.**— In current practice, assessment of the prognosis of patients with DCM is limited to consideration of the left ventricle. The evaluation of echocardiographic parameters of systolic and diastolic RV functions would be very useful for better stratification of prognosis of these patients.

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Left atrial volume as a morphophysiological expression of left ventricular diastolic dysfunction

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Background.— Left ventricular (LV) diastolic dysfunction is prevalent in the community.

Previous studies have reported an association between diastolic function and atrial dimension.

Objective.— The aim of this study is to evaluate the relation between left atrial (LA) volume and LV diastolic function.

Methods and results.— In the present prospective study of 120 adults, mean age 59 ± 4 years, referred for a clinically-indicated echocardiogram and in sinus rhythm, with no history of atrial arrhythmias or valvular heart disease and with an ejection fraction > 50%, we determined the LA volume, LV diastolic function status.

The left atrial volume was calculated from the apical four-chamber and two-chamber views at ventricular endsystole with using Simpson's biplane method.

Diastolic dysfunction (DD) was found in 72% of classified patients. The LA volume indexed to body surface area (LAVi) increased with worsening DD: 23.8 mL/m² (normal), 29 mL/m² (grade I), 42.5 mL/m² (grade II) and 51.7 mL/m² (grades III). The LAVi was strongly associated with diastolic function grade ($P < 0.001$).

Conclusion.— In patients without a history of atrial arrhythmias or valvular heart disease or an ejection fraction < 50%, LA volume expressed the severity of diastolic dysfunction.

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Effects of cardiac resynchronization therapy on mitral regurgitation severity

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Objectives.— We studied the effects of cardiac resynchronization therapy (CRT) on functional mitral regurgitation in heart failure (HF) patients.

Background.— Functional mitral regurgitation (FMR) is a common finding in patients with global left ventricular (LV) dilatation and dysfunction.

Several recent studies demonstrated that cardiac resynchronization therapy (CRT) might be able to reduce FMR.

Methods.— Twenty-nine patients with heart failure and FMR were studied after implantation of a biventricular CRT system. Clinical responders were predefined as survived patients with an improvement by one or more NYHA functional class.

tive regurgitant orifice area (EROA) and the regurgitant volume (RV).

Results.— Twenty-nine patients (mean age, 66 ± 8 years; 26 men; mean LV ejection fraction $25 \pm 7\%$) with severe HF were included. All patients were restudied at a mean of 8 ± 2 months after CRT; 26 (89%) were clinical responders.

Cardiac resynchronization therapy was associated with a significant reduction in FMR severity in clinical responders; effective regurgitant orifice area (EROA) decreased from 19 ± 18 mm² to 8 ± 7 mm² ($P < 0.001$) and regurgitant volume (RV) decreased from 19 ± 11 mL/beat to 10 ± 9 mL/beat ($P < 0.001$). This was accompanied by a significant reduction in LV volumes and an increase in ejection fraction ($P = 0.001$).

In clinical nonresponders, there was not a significant decrease in MR severity; EROA decreased from 28 ± 6 mm² to 22 ± 13 mm² ($P = 0.18$) and RV from 25 ± 5 mL/beat to 22 ± 8 mL/beat ($P = 0.18$).

Conclusion.— Functional mitral regurgitation is reduced in clinical responders to CRT. Thus, FMR may be an important factor influencing clinical response to CRT.

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Impact of betablocker, as a treatment of heart failure, on the echocardiographic parameters

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Introduction.— Little study analyzed the effect of betablocker on echocardiographic, functional parameters and the capacity of exercise in case of heart failure.

Aim.— To analyze the impact of betablocker on several clinical, functional, echocardiographic, biochemical parameters, and to define predictive factors of improvement.

Methods.— Our study is prospective between August 2009 and June 2010 including patients followed in cardiology department of Hédi Chaker hospital for steady heart failure due to left ventricular systolic dysfunction. Patients benefited a clinical, functional (NYHA class, TM6M, Minnesota score), echocardiographic assessment and a dosage of the NT-proBNP before taking bisoprolol, and 3 months after the tolerated maximal dose.

Results.— Forty patients have been included in the study. The mean age was of $61,15 \pm 9,86$ years, the sex-ratio was 9. The heart failure was ischemic in 70% of cases. The mean dose of bisoprolol was $5,375 \pm 0,75$ mg. The tolerance to the betablocker was good at 70% of patients. A transient aggravation of the effort dyspnea has been noted at 10% of patients. Only one death occurred in the outside of the phase of titration. A reduction of the heart rate has been noted ($P = 0,08$). No meaningful elongation of the QRS and the QT has been noted. The NYHA class ($P < 0,001$) and the TM6M improved of meaningful way ($P < 0,001$). The left ventricle ejection fraction (LVEF) improved at 72,5% of patients. The average of the (LVEF) passed of $29,44 \pm 6,51$ to $34,49 \pm 6,9$; $P < 0,001$. Diastolic function improved of meaningful way at 33% of patients with improvement of the mitral profile ($P = 0,08$) and of replenishment pressures ($P = 0,06$). A meaningful improvement of the right ventricle function has been noted at 17,9% of patients. In univariate analysis, the heart rate < 76 bpm, the width of the QRS, a LVEF < 30, 5% were predictive of improvement of the LVEF. The E/Ea ratio was predictive of diastolic function improvement and no predictive factor of improvement of the right ventricle function has been recovered.

Conclusion.— The bisoprolol permitted to improve clinical, functional, echocardiographic parameters and to decrease the NT-proBNP of meaningful way.