

of diabetic cardiomyopathy. We were able to determine if there is distinctive echocardiographic predictor of severity of DD in pts with diabetes mellitus (DM) irrespective of its duration.

Methods: 197 pts (69.9% men, 38, 1% women) with LA enlargement (44.7 ± 2.9 mm), enlarged LA volume index (42.1 ± 13 ml/m²) and average EF% of 64.8 ± 15.6 were selected for participation in this study. All pts were divided according to the presence of DM. LV systolic and diastolic function were evaluated by traditional, TDI and colour Doppler M-mode echocardiographic methods. The overall degree of diastolic function and specific parameters were analyzed.

Results: There was no difference between pts with (40,1%) and without DM (59.9%) regarding gender, BMI, presence of hypertension, dyslipidemia, presence of CAD, LVEF and/or LA dimension and volume, only pts with DM were significantly older ($p=0.045$). Assessment of diastolic function revealed insignificant difference between pts with and without DM for degree of DD ($p=0.419$), but pts with DM showed significantly worse septal, lateral and average early diastolic velocity (Ea) ($p=0.031$; $p=0.033$; $p=0.018$, respectively) as well as significantly worse peak septal and average E/Ea ratio ($p=0.022$; $p=0.024$, respectively) which was confirmed with existence of significant negative correlation for septal, lateral and average Ea velocity ($p=0.037$; $p=0.042$; $p=0.022$, respectively) and significant positive correlation for septal and average E/Ea ratio ($p=0.012$; $p=0.017$, respectively). In a stepwise logistic regression model septal E/Ea ratio was independently associated with DM ($p=0.025$). **Conclusion:** In pts with DM and already affected diastolic function, E/Ea ratio appears as a distinctive marker of severity of diabetic cardiomyopathy. Its assessment should be part of standard procedure in pts with DM.

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Assessment of left ventricular function by two-dimensional echocardiography speckle tracking in a group of type 2 diabetic asymptomatic patients

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Comparative MPI SPECT characteristics

Variable	ICM (N=29)	NICM (N=18)	sig	Chi square/Rsquare	OR or beta	sig OR
ST deniv.	18/29	1/18	0.000	17.20	9.17	0.002
LBBB	2/29	8/18	0.004	9.36	3.34	0.002
L/H stress	0.43 ± 0.04	0.35 ± 0.03	0.001	0.55	-0.74	0.001
L/H rest	0.44 ± 0.03	0.35 ± 0.02	0.000	0.69	-0.83	0.000
TID categorical	10/29	11/18	0.069	3.20	2.98	0.078
Fixed perf. defect	26/29	7/18	0.000	13.90	0.43	0.001
Reversible perf. defect	12/29	0/18	0.001	14.06	0.13	0.000
Patchy distribution	0/29	8/10	0.000	23.92	23.25	0.005

EF-ejection fraction; EDV-enddiastolic volume; ESV-endsystolic volume; L/H-lung to heart ratio; TID-transient ischemic dilatation; OR-odds ratio.

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Background: Diastolic heart failure is associated with poor prognosis and increased mortality. Early diagnosis can help in the treatment of the condition and set goals therapeutically. We know that at rest, less than 30% of left ventricular filling due to atrial contraction. With chronic myocardial infarction, ventricular relaxation changed the mechanics of the involvement of the left atrium and it becomes more important. The study of Dopplermittal flow velocity time integral (VTI) of E and A waves for the same mitral orifice shows the proportion of flow at each stage of ventricular filling.

Methods: We studied 640 patients, no significant differences in age and body mass index), 440 patients (58% men and BMI: 28 ± 7) with normal echocardiography and without cardiovascular disease and compared with 220 patients (62% men and BMI 26 ± 8) with abnormalities on the echocardiogram as dilated, hypertrophic and / or systolic dysfunction, but more than 140ms when atrial depressurization.

Results: The estimated percentage of active atrial left ventricular filling in for the tests were below 30% ($25.75\% \pm 0.7029$ N = 420) echocardiography in patients with normal and abnormal echocardiography were above 30% ($36, 00\% \pm 0.8335$ N = 220), $p < 0.001$.

Conclusion: The calculation of the dependence of left ventricular filling to atrial contraction is useful to quantify diastolic dysfunction.

60111

Are there specific MPI SPECT study variables that can distinct ischemic from nonischemic cardiomyopathy?

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Aim of the study: To identify MPI SPECT variables distinctive for nonischemic dilated cardiomyopathy (NIDCM).

Material and methods: We analyzed 47 patients with DCM who underwent MPI SPECT, divided in two groups: with ICDM (27), and NIDCM (18). We analyzed clinical

and MPI SPECT hemodynamic, ECG, functional response to pharmacologic stress with dipyridamol, left ventricular functional and myocardial perfusion variables.

Results: No differences were found for clinical except for LBBB (table), nor for LV functional variables. Variables with differences are presented in the table.

Significant correlations with NIDCM: LBBB (r 0.446/ p 0.002); patchy distribution (r 0.660/ p 0.000); ST deniv. during stress (r -0.560/ p 0.000); fixed (r -0.540/ p 0.000); reversible defect (r -0.461/ p 0.001); L/H ratio (stress r -0.805/ p 0.000 and rest r -0.858/ p 0.000).

Multivariate logistic regression analysis (R square 0.700, sig = 0.000) identified five independent predictors of NIDCM: patchy distribution (OR 1.97, $p=0.056$), ST denivelation (OR -4.34, $p=0.000$); extensive fixed defect (beta -0.264, $p=0.031$); reversible defect (OR -4.22, $p=0.000$) and increased L/H ratio (beta -0.833, $p=0.000$) of NICM.

Conclusion: Patient with DCM who are not experiencing anginal symptoms, have LBBB, have no ST-denivelation nor chest pain during dipyridamol stress, with small fixed perfusion defects (especially in the presence of LBBB) or patchy distribution are more likely to have NIDCM. Increased H/L ratio is typically associated with ICM, rarely present in NIDCM even with severely depressed LV function.

60070

Ventricular tachycardia due to pectus excavatum

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A 19-year old boy with pectus excavatum presented at the adult congenital heart

and MPI SPECT hemodynamic, ECG, functional response to pharmacologic stress with dipyridamol, left ventricular functional and myocardial perfusion variables.

Objective: Define more clearly the relationship between the information provided by the CXR and the natriuretic peptide (NT-proBNP) test as part of the evaluation of pretransplant heart failure patient in an outpatient clinic.

Methods: Cohort of 38 patients with advanced systolic heart failure in a pretransplantation clinic. Clinical characteristics and diagnostic performance for each test were compared, focusing on blinded NT-proBNP and CXR interpretation by 2 blinded radiologists.

Results: 38 patients, 65.5% men, age 48.53 ± 10.93 y, 47.2% with idiopathic and 29.3% with ischemic dilated cardiomyopathy. NYHA class 2 was present in 41.4%. Congestion was present in 51.7% estimated by a clinical congestion score, 44.8% by NT-proBNP > 1000 and 44.7% by CXR evaluation. The performance of CXR findings were in the following table. A combination of 2 CXR abnormal findings was associated with a 78.5% of sensitivity and a 82.4% of specificity (95%CI).

Conclusion: Chest radiography is a crucial part of the complete evaluation and an useful test to evaluate pulmonary congestion. The strategy of grouping signs into an overall radiological impression did outperform individual radiographic signs and achieved a similar accuracy to that provided by NT-proBNP.

CXR comparative diagnostic performance

	Sensitivity (%) (95% CI)	Specificity (%) (95% CI)	PPV (%)	NPV (%)
Cardiomegaly	84.2	76.9	64	52.6

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A 19-year old boy with pectus excavatum presented at the adult congenital heart disease clinic for his yearly follow-up. During adolescence his exercise tolerance was decreased. Sometimes he suffered from lightheadedness while extensively exercising, but he never experienced palpitations or syncope. Previous tests revealed a slightly restrictive lung function and an incomplete right bundle branch block on ECG, which were both explained by the deformation of the chest wall and the mild rotation of the heart. Transthoracic echocardiography was normal. Despite completely normal exercise tests in the past, this time a short non sustained ventricular tachycardia of 4 beats was seen during bicycle test at 60 Watt. On the 12-lead ECG it was clear that the ventricular tachycardia originated from the right ventricle free wall. A cardiac CT and an MRI with late enhancement were performed. On the dynamic analysis of the MRI and the images of cardiac CT it was found that during diastole the distal part of the sternum impinged in the free wall of the right ventricle. Since there was no familial history of sudden cardiac death and no other structural anomalies of the heart, coronary arteries or myocardium could be detected, we assume that the impingement triggered the arrhythmia. Whether this process was mediated by fibrosis of the right ventricular free wall could not be determined. A bicycle after the start of a betablocker couldn't trigger the ventricular tachycardia anymore. A documented ventricular tachycardia as a complication of pectus excavatum has never been described in literature so far. Since it is suggested that symptomatic patients with pectus excavatum remain symptomatic after adolescence, the patient was referred for surgical repair.

61016

In natriuretic peptide era chest X-ray still useful in the evaluation of pulmonary congestion in a pretransplantation heart failure outpatient clinic?

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Introduction: Patients with heart failure are often evaluated with some degree of uncertainty, even by highly skilled clinicians. Optimal evaluation includes balance of symptoms, physical examination and adjunctive testing. Chest radiograph (CXR) has

been a reliable, inexpensive tool commonly used, but it may have a low accuracy for congestion evaluation.

Objective: Define more clearly the relationship between the information provided by the CXR and the natriuretic peptide (NT-proBNP) test as part of the evaluation of pretransplantation heart failure patient in an outpatient clinic.

Methods: Cohort of 38 patients with advanced systolic heart failure in a pretransplantation clinic. Clinical characteristics and diagnostic performance for each test were compared, focusing on blinded NT-proBNP and CXR interpretation by 2 blinded radiologists.

Results: 38 patients, 65.5% men, age 48.53 ± 10.93 y, 47.2% with idiopathic and 29.3% with ischemic dilated cardiomyopathy. NYHA class 2 was present in 41.4%. Congestion was present in 51.7% estimated by a clinical congestion score, 44.8% by NT-proBNP > 1000 and 44.7% by CXR evaluation. The performance of CXR findings were in the following table. A combination of 2 CXR abnormal findings was associated with a 76.5% of sensitivity and a 82.4% of specificity (95%CI).

Conclusion: Chest radiography is a crucial part of the complete evaluation and an useful test to evaluate pulmonary congestion. The strategy of grouping signs into an overall radiological impression did outperform individual radiographic signs and achieved a similar accuracy to that provided by NT-proBNP.

CXR comparative diagnostic performance

	Sensitivity (%) (95% CI)	Specificity (%) (95% CI)	PPV (%)	NPV (%)
Cardiomegaly	84.2	76.9	64	52.6
Left atrial enlargement	36.8	89.5	77.8	58.6
Cephalization of vessels	68.4	78.9	76.5	71.4
Interstitial edema	73.7	84.2	82.4	76.2
Alveolar edema	5.3	100	100	51.4
Overall Evaluation	73.7	84.2	82.4	76.2

60035

Myocardial acceleration during isovolumic contraction in the routine evaluation of right ventricular function

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Introduction: The evaluation of the right ventricular systolic function (RVF) is complicated, because of its complex geometry. Methods like MRI or 3D echocardiography have been used for this evaluation but are still hardly available and time consuming. The acceleration myocardial acceleration during isovolumic contraction (IVA) is an index poorly studied that in previous works showed to correlate with the severity of illness in conditions affecting right heart function and to be relatively load independent. Still it is not recommended as a screening parameter for RV systolic function in the general echocardiography laboratory population.

Aim: To evaluate the utility of AIV as a measure of RVF in the general echocardiography population when compared with objective parameters used routinely: tricuspid annular plane systolic excursion (TAPES) and pulsed doppler velocity at the annulus (S') and subjective parameters such as eyeball.

Methods: Prospective study of 313 patients (pts) with inpatient and outpatient sent to echocardiographic study, included from October/2011 to June/2011. AIV was made by Doppler tissue imaging at the lateral tricuspid annulus at the level of the lateral tricuspid annulus as the peak isovolumic myocardial velocity divided by time to peak velocity;

