241±50, PIIINP 4.9±2.1 and IL-4 8.8±6.7). In the hypertensive group we found LVEF = 0.56±0.05, LVEDVI 15±5.65, LVPiNP 5.9±0.8, IL-4 10.7±16.0. For the whole group LVEF = 0.47±0.07, LVEDVI (0.2, p<0.005) and with LVPiNP (r=0.3, p<0.01). In the dilated and hypertensive groups we found between IL-4 and PIIINP a correlation (r=0.3, p<0.005), respectively.

Conclusions: Urinary IL-4 levels are related with myocardial fibrosis and LV remodeling in HF. The correlation is better in the dilated and hypertensive etiological groups.

268 Left ventricular filling pattern and neurohumoral activation in heart failure. Relationship to pulmonary hypertension

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Background: Left ventricular restrictive filling pattern (RFP) is shown to be a predictor of lower survival rate and reduced exercise capacity in patients with heart failure. Heart failure (HF) is characterized by increased cytokines and natriuretic peptide levels.

Aim: The purpose of the study was to assess the relationship between LV restrictive filling pattern and neurohumoral cytokines, BNP level, predictors of over filling capacity and pulmonary hypertension in patients with clinically stable heart failure.

Methods: In 70 patients (age 52±10 yrs, LVEF 27.8%, NYHA class 2±0.8) a complete echocardiographic study and cardiopulmonary exercise test with assessment of peak VO2 and VE/VO2 slope (index of excessive exercise ventilation) were performed. BNP was measured using RIA method, and levels of soluble receptors of TNF-alpha (sTNF-RI, sTNF-RII) and interluekin 6 (IL-6) were measured using ELISA R&D Systems assay.

Results: There were 35 pts with ischeamic and 35 pts with diluted cardiomyopathy. According to Doppler transmitial filling pattern 30 pts had restrictive (E/A=0 or E=D) and 40 pts non-restrictive filling pattern (non-RFP group). There was no significant difference in LV dimensions or LVEF between the two groups. The RFP group showed increased levels of BNP (90±66 vs 50±42 pg/ml; p=0.02), sTNF-RI (1518±338 vs 1423±550 pg/ml; p=0.03) and sTNF-RII (3042±910 vs 2674±891 pg/ml; p=0.08). Peak VO2 was significantly reduced in RFP group compared to non-RFP (15±4.7 vs 17±6.1 ml/kg/min; p=0.02). VE/VO2 slope (32±6 vs 22±7; p=0.01), and RVSP (right ventricular systolic pressure as assessed using Doppler tricuspid insufficiency evaluation) (48±14 vs 34±12 mmHg; p=0.02) were significantly increased.

A significant correlation between DTE and BNP level (r=0.39, p<0.005), peak VO2 (r=0.28, p=0.02), VE/VO2 slope (r=0.26, p=0.02) and RVSP (r=0.46, p=0.003) was found. There was also significant correlation between E/A ratio and RVSP (r=0.53, p=0.0003). In multivariate regression analysis only RVSP was independently associated with DTE.

Conclusion: The restrictive filling pattern is associated with increased right ventricular systolic pressure, increased BNP level, and worse results of cardiopulmonary exercise test. Increased intracardiac pressures may be responsible for the increased neurohumoral activation and excessive ventilatory response to exercise in patients with HF.

269 Pulmonary venous flow pattern is unreliable in atrial fibrillation to indicate heart failure

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Heart failure (HF) is associated with increased left ventricular filling pressure (LVFP). Mitral filling pattern has been used to assess LVFP in sinus rhythm (SR). In atrial fibrillation (AF) however other techniques are searched. The purpose of this study was to assess the value of pulmonary venous (PV) flow pattern in HF patients with SR or AF. LV ejection fraction (EF), mitral E, A velocities, PV systolic (S) and diastolic (D) flow velocities were measured, E/A ratio was calculated, and E/Ea as well. When we compared E/Ea in the functional class (NYHA I-II) 1.0±0.34, NYHA III 1.7±1.04, the study group or in the testing group. The Wedge Score was calculated as the sum of individual scores.

Results: The Wedge Score resulted of variables of mitral flow, pulmonary venous flow pattern, left atrial size and global fractional shortening, and pulmonary artery systolic pressure. Strong correlations with PCWP were attained either in study group or in the testing group. The Wedge Score showed better correlations with PCWP and was more accurate in predicting a PCWP =16 mmHg than did other Doppler variables for all levels of LV size and systolic function. Correlation coefficients, sensitivities and specificities with the Wedge Score were 0.91, 85% and 80% in LV dysfunction without dilatation, 0.88, 100% and 90% in LV dysfunction with dilatation and 0.87, 91% and 90% in aortic stenosis.

Conclusions: The Wedge Score may provide a simple, and reliable method for noninvasive assessment of PCWP in patients with normal or dilated LV volumes and preserved or impaired systolic function.

270 How interpret exercise induced changes in E/Ea in patients with systolic heart failure

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Aim: Although the analysis of the pattern of transmitial systolic turbulence is much used in order to evaluate the diastolic function of the left ventricle (LV) and it supplies very valuable information for the management of heart failure (HF), it ususly the general population has not been completely demonstrated. The purpose of this work was to investigate in a multizenter study the relation between the E wave and the mitral flow propagation velocity ratio (E/Vp) with Ea, tesi, aorticventricular plane displacement (AVPD, mm), ejection fraction (EF) and functional class according to the New York Heart Association (NYHA).

Methods: We studied 215 patients, aged 66±9, obtained from a sample of 432 people that said they suffered from dyspnea. The subjects were sent to their hospital where an echoc Doppler study was undergone and a questionnaire was filled in. Of the 432 subjects we obtained a positive response from 215 and the study was completed with 190.

Results: For the whole population E/Vp was 1.1±0.42; E/A 0.87±0.23; tesi 0.29±0.14; AVPD 11±1.5 and EF 62±8. When we compared E/Vp with tesi (r=0.2, p<0.01), AVPD (r=0.3, p<0.0001) and EF (r=0.5, p<0.0001) we obtained significant correlations. The correlation with E/A was, NS. When we compared E/Vp with the functional class (NYHA I-II) 1.0±0.34, NYHA III 1.7±1.04, the study group or in the testing group. The Wedge Score was calculated as the sum of individual scores.

Conclusions: E/Vp correlates well with other Doppler parameters and it is useful to evaluate the severity of HF in a population with dyspnea. The fact that the increase of the venlricular relaxation is minimized makes E/Vp a good index of left ventricular filling pressure.