17 (18.3%) pts with RDD. In pts with LVRA treatment with enalapril and furosemide induced significant increases in E (46.4±14.9 vs 58.3±17.5; p<0.05), E/A (0.64±0.2 vs 1.02±0.01; p<0.001) and reduction in A (19.7 vs 25.8 ms; p=0.16). 4% (1) of the parameters reached statistical significance (19.7 vs 25.8 ms; p<0.05) and in pts with RDD significant increases in A (22.8±8 vs 45.4±12.7; p<0.005) and DI (105.7±16.5 vs 144.3±36.9; p<0.005) and reduction in E/A 2.30±0.29 vs 1.67±0.59; p<0.005). There were not significant differences in these parameters for the two groups after treatment.

Conclusions: In pts with CHF enalapril in combination with furosemide induces significant improvement of LV diastolic function; Digoxin does not influence on LV diastolic filling patterns; LV diastolic function improvement in pts with CHF treated with enalapril and digoxin is related to the benefit action of enalapril.

268 Evaluation of left ventricular diastolic dysfunction in patients with end-stage renal disease by conventional Doppler echocardiography and tissue Doppler imaging D. Mylas 1; P. Shougaras 1; O. Kapi-Liata 1; M. Bader 1; L. Kosma 1; V. Atsalis 1; V. Dillians 1; V. Pyrgalis 1 1General Hospital, Cardiology Dept., Corinthos, Greece; 2Genimatas Hospital, Radiology Dept., Athens, Greece

Purpose: To evaluate left ventricular (LV) diastolic function in patients with end-stage renal disease (ESRD) using conventional pulsed-Doppler echocardiography and tissue Doppler imaging (TDI), and to compare the findings between these two modalities.

Material and methods: Twenty-four patients with ESRD (mean age 69±12 years, 14 males) and 22 healthy age- and sex-matched control subjects were assessed by conventional Doppler echocardiography and TDI. The scans of the renal disease patients were performed one hour after a dialysis session. Parameters related to LV diastolic function were compared in the ESRD and control groups.

Results: The two study groups did not differ concerning LV systolic performance and LV mass index. Concerning the conventional Doppler parameters, the ESRD patients had lower mitral E/A ratio (0.75±0.25 vs 1.1±0.2, p=0.05), lower aortic E wave (105.3±30 vs 66.1±11/sec, p=0.024), and s-wave; however, there were not statistical differences in E, IVRT and DT values (p=NS) for all compared to control subjects. According to TDI assessment, the ESRD group had lower Em velocity and Em/Am ratio (7.7±1.4 vs 9.5±1.3 cm/sec, p=0.007 and 0.67±0.1 vs 0.9±0.2; p=0.001, respectively) than controls, while they did not differ in Am velocity (11.2±2 vs 10.5±1.5; p=NS). Myocardial performance index (TEI) estimated with TDI parameters was also increased in ESRD group compared to control subjects (0.63±0.08 vs 0.40±0.05; p<0.001). Since LV systolic function was similar in the two study groups, the difference in TEI index could be attributed to the impaired LV diastolic function of patients with ESRD.

Conclusions: Patients with ESRD show, even after dialysis (where acute phase reaction is a fact), echocardiographic signs of LV diastolic dysfunction. TDI parameters seem to be more sensitive in its detection compared to conventional Doppler indices.

269 Possible mechanisms of dyspnea on effort in patients with normal left ventricular systolic function M. Pisani 1; F. Baratto 1; E. Agricola 1; A. Merisi 1; F. Chiaruna 1; M. Oppizzi 1; A. Margonato 1 1San Raffaele Hospital, Milano, Italy

Background: Some patients with normal ejection fraction (EF) develop dyspnea during effort. This condition has been attributed to the possible appearance of diastolic dysfunction during the effort. Aim of the study is to evaluate whether exerted dyspnea during effort is really caused by diastolic dysfunction or by any other mechanism.

Material and methods: We enrolled 28 patients (age 67±7 years, 6 men, 22 women) with EF >55%, referred dyspnea during effort (evaluated by LV 36 quality of life questionnaire) and rest abnormal relaxation on Doppler transmural pattern. We excluded patients with ischaemic or valvular heart disease, and patients with known extracardiac possible causes of dyspnea. Patients underwent symptoms limited exercise echocardiography. EF, transmural Doppler E wave and tissue Doppler E wave ratio (E/Ea), and stroke volume (SV) were evaluated at rest and stress peak. Moreover, we considered aortic (ZAo) and left atrial (ZL) impedance in a non invasive manner as follows: ZAo = systolic arterial pressure / (SV/body surface area). We considered abnormal values ZAo >5 mm Hg/ml/m2, effort E/Ea >10, increase in SV >5 ml. Exercise capacity was assessed comparing effective METS with values predicted by age and sex.

Results: Among 28 patients, 14 patients (50%) reached age and sex predicted exercise capacity, 14 (50%) did not. Among 14 patients with reduced exercise capacity, 4 (29%) interrupted the stress for muscular exhaustion, 22 women) with EF >55%, referred dyspnea during effort (evaluated by LV 36 quality of life questionnaire) and rest abnormal relaxation on Doppler transmural pattern. We excluded patients with ischaemic or valvular heart disease, and patients with known extracardiac possible causes of dyspnea. Patients underwent symptoms limited exercise echocardiography. EF, transmural Doppler E wave and tissue Doppler E wave ratio (E/Ea), and stroke volume (SV) were evaluated at rest and stress peak. Moreover, we considered aortic (ZAo) and left atrial (ZL) impedance in a non invasive manner as follows: ZAo = systolic arterial pressure / (SV/body surface area). We considered abnormal values ZAo >5 mm Hg/ml/m2, effort E/Ea >10, increase in SV >5 ml. Exercise capacity was assessed comparing effective METS with values predicted by age and sex.

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