Poster session 4

Friday, 9 December 2005, 14:00–18:00
Location: Poster Area

LV FUNCTION

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Early detection of regional myocardial alteration in female patients with systemic sclerosis using Doppler tissue imaging

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The aim of the study was to assess whether quantitative Doppler tissue imaging (DTI) may detect early signs of regional myocardial dysfunction in patients with systemic sclerosis (SSc).

Methods: Twenty-three female patients with SSc (SSc group) and twenty-one female controls (C group) without clinical signs of heart failure and with normal global LV function by standard 2D echocardiography, were investigated with pulsed wave DTI at rest and during exercise stress echocardiography (ESE). Myocardial function was calculated as mean value from five basal LV segments for the peak velocity at systole (Vs), early diastole (Ve), atrial contraction (Va) and ratio Ve/Va.

Results: Compared to controls SSc patients had compromised Ve at rest (9.2±4.1 vs 10.3±5.9 cm/s, P<0.05), higher Va (P<0.05) and lower Ve/Va ratio (0.9±0.2 vs 1.1±0.3, P<0.001) and less Vs (P<0.02). After ESE in SSc group Ve increased by 13.3% (P<0.02), Vs by 6% (NS), ratio Ve/Va by 5.9% (NS) and Vs by 20.6% (P<0.001) compared to baseline values. In the C group assessment of regional myocardial function after ESE showed: increased Vs by 29% (P<0.001), Vs by 3.3% (NS), ratio Ve/Va by 25% (P<0.001) and Vs by 52.3% (P<0.001). Impaired response of myocardial function during ESE in pts with SSc resulted to more significant difference in DTI parameters between SSc and C group after ESE (Vs 10.4±3.5 vs 13.3±6.4 cm/s, P<0.001; Ve 10.4±3.6 vs 9.2±1.3 cm/s, P<0.001; Ve/Va 0.9±0.37 vs 1.4±0.34, P<0.001; Ve/Va 10.5±3.4 vs 13.1±3.7 cm/s, P<0.001).

Conclusion: In female patients with SSc quantification of myocardial velocities by DTI uncovered early signs of impaired regional myocardial function which are more expressed during ESE.

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Abnormalities of strain and strain rate in acromegalic patients and their reversibility after therapy with somatostatin analogues: a prospective color Doppler myocardial imaging study

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Aim of the study was to evaluate whether Color Doppler Myocardial Imaging (CDMI) is able to detect abnormalities of Left Ventricular function in acromegaly in 25 consecutive patients, with active untreated acromegaly referred to the Department of Endocrinology (10 women, 15 men, mean age 50.1±10.3 yr) were evaluated at baseline and after a 6-month course with Somatostatin analogues. Twenty-five healthy subjects (10 women, 15 men; mean age 50.5±6.3 yr) were used as controls.

All subjects underwent conventional 2D-Color Doppler echocardiography and CDMI. Acromegalic group had a greater LV mass (150±22.14 g/m²) than C (101±14.12 g/m², P<0.001). LV ejection fraction did not differ in group AcroUNTR and in Controls; at variance, AcroUNTR patients had reduced LV diastolic function (E/A ratio: 0.96±0.3 vs. Controls: 1.6±0.3, P<0.002). Longitudinal global diastolic left ventricular function sampled through Pulsed Wave Tissue Doppler Imaging was abnormal in AcroUNTR in comparison with controls. Cardiac deformation assessed by regional myocardial systolic strain and strain rate (SR) values was significantly lower (abnormal) in acromegalic patients (AcroUNTR) than in controls. These strain and SR abnormalities were significantly related to serum GH and IGF-I levels. In addition, the early phase of diastolic function evaluated using SR was compromised in acromegalic patients (p<0.05). Definitively, untreated acromegalic patients showed some systolic and diastolic functional abnormalities, which could eventually develop forward a specific "acromegalic cardiomyopathy". The almost complete reversibility of these abnormalities induced by somatostatin analogues allows us to hypothesize that a detrimental progression of these myocardial might be avoided by a precoce control of GH/IGF-I excessive secretion.