**ECHO AND TISULAR DOPPLER ASSESSMENT OF SYSTOLIC AND DIASTOLIC FUNCTION IN SCLERODERMA**

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Objectives: To analyze systolic and diastolic function by echo and tissue Doppler in patients with scleroderma and compare 1) with a control group and 2) in the whole group of scleroderma with and without pulmonary hypertension.

Background: Cardiac engagement is frequent in scleroderma and implies a bad prognosis. This may be a consequence of pulmonary and arterial hypertension as well as intrinsic myocardial damage.

Methods: Sixty patients with scleroderma (55 ± 13 years, 93% women) and 10 control patients (50 ± 21years, 80% women) were studied. A complete echocardiography study was achieved. Pulmonary hypertension (PH) was considered to be present when the systolic pulmonary pressure was greater than 35 mmHg. Categorical variables were compared with X2 test while the continuous ones were with the Student T test.

A p < 0.05 was considered statistically significant.

Results: In the following table we describe the most important findings.

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|  | Scleroderma (n=60) | Controls (n=10) | p |
| Right ventricular diastolic diameter (mm) | 19.5 ± 3.8 | 15.4 ± 4.5 | 0.003 |
| Pulmonary acceleration time (msec) | 134 ± 28 | 144 ± 10 | 0.04 |
| Pulmonary systolic pressure (mmHg) | 25 ± 9 | 20 ± 3 | 0.004 |
| Late diastolic tissue mitral annular velocity ( Am) (cm/s) | 15.4 ± 3.9 | 12.7 ± 2.7 | 0.04 |
| Late diastolic tissue tricuspid annular velocity (At) (cm/s) | 18 ± 3.6 | 13.6 ± 3.6 | 0.0006 |
| Early diastolic tissue tricuspid annular velocity ( Et )/ At ratio  | 0.92 ± 0.28 | 1.13 ± 0.19 | 0.02 |

Six patients with scleroderma had pulmonary hypertension (38. 7 ± 2.7 mmHg vs 23.2 ± 8 mmHg; p<0.0001). This group had a greater heart rate, a lower early tricuspid velocity (E) /late tricuspid (A) velocity ratio, a greater At, a lower Et / At ratio and a lower pulmonary vascular resistance than the group with normal pulmonary pressure.

Conclusions: Patients with scleroderma did not show left systolic dysfunction but they had greater right ventricular dimensions and higher pulmonary pressure than the control group as well as right ventricular dysfunction by tissue Doppler. This suggests a reduced ventricular compliance specially when PH is present.