P.057: EFFECTS OF CORONARY MICROCIRCULATION ON INTRACORONARY PRESSURE WAVEFORMS AS ASSESSED BY FAST FOURIER FRANSFORM ANALYSIS

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related to cardiovascular and all-cause mortality. Strain and strain rate deformation parameters can detect subtle changes of the left ventricular (LV) function.

Aim: To investigate the role of arterial stiffness in Systolic LV function and the effect of Pulse pressure in hypertension.

Methods: We studied 55 consecutive hypertensive patients and 25 controls, matched for age (49±7.5 yrs, 45.5±4.1 yrs), with normal EF (66±2.5 vs. 64±3.3%, NS). All subjects had 2D and colour Doppler myocardial imaging of basal and mid LV segments (12) in the longitudinal axis. Mean longitudinal strain (S) and strain rate (SR) were averaged from each of the 12 segments assessed. Pulse wave velocity (PWV) carotid-femoral was used for estimation of arterial compliance in 20 of the hypertensive patients.

Results: The hypertensive group had higher pulse pressure (59.5±16.6 vs. 41.4±7.2 mmHg, P<0.001), and lower mean longitudinal S and SR (S: 18.1±2.2 vs. 20.5±2.0% P<0.05 and SR: 1.34±0.16 vs. 1.54±0.13/s P<0.05) compared to controls. The patients with hypertrophy or diastolic dysfunction (DD) had higher PP than those without hypertrophy (65±15 vs. 46±11 mmHg, P<0.001) or DD (63±16 vs. 44±12 mmHg, P<0.001).

Pulse pressure was correlated with LVMi (r = 0.51, P<0.01), mean S (r = 0.51, P<0.001), ATR (r = 0.36, P<0.05), A (r = 0.45, P<0.05) and EF/A (r = 0.54, P<0.01). Pulse pressure was also correlated with mean S and SR (r = 0.58, P<0.01) and PP (r = 0.47, P<0.05).

Conclusion: Pulse pressure is related with functional (S, SR) and structural (WT, LVMi, PWV) components of the left ventricle and with the arterial stiffness. Arterial stiffness seems to affect not only the diastolic, but also the longitudinal systolic function of the left ventricle.