

Objectives: Stress echocardiography plays important role in investigation of the patients with chest pain. Dipyridamole is reported to be safer than dobutamine stressor, dynamic stress is recommended as the first choice method. We investigated whether commonly used stressors are causing myocardial injury, measured by serum hsTnT.

Methods: 135 patients (DSE n=46, ExsE n=46, DIP n=43) with negative SE were studied. Exclusion criteria included known ischaemic heart disease, baseline regional wall motion abnormalities or left ventricle systolic dysfunction ($EF \leq 50\%$), more than mild left ventricle hypertrophy (septum/posterior wall ≥ 13 mm), diabetes, pre-diabetes (fasting glycemia >5.6 mmol/L), baseline hsTnT level ≥ 14 ng/L, baseline blood pressure $\geq 160/100$ mmHg, peak pulmonary pressure ≥ 45 mmHg at baseline echocardiography, eGFR <1 mL/s/1.73m² and more than mild to moderate valvular disease. HsTnT was measured before and at 180 minutes after the test was terminated.

Results: All patients had low pre-test probability of IHD. HsTnT increased in DSE, less so in ExSE, and was unchanged in DIP group [9.4 (1.5–58.6), 1.1 (-0.9–15.7), -0.1 (-1.4–2.1) ng/L respectively, $p < 0.001$]. In DSE, hsTnT change was associated with peak dobutamine dose ($r=0.30$, $p=0.045$), test length ($r=0.43$, $p=0.003$) and atropine use ($p < 0.001$). In ExSE, hsTnT rise was more likely in females ($p=0.012$) and in patients >65 years ($r=0.32$, $p=0.03$), no association was found between hsTnT rise and atropine use ($p=0.786$) or test length ($r=0.10$, $p=0.530$).

Conclusions: DSE is associated with myocardial injury in patients with negative SE, no injury was observed in DIP and only mild in ExSE.

Key words: negative stress echocardiography, myocardial injury, hsTnT