

Left ventricular systolic function in patients with acute coronary syndrome-risk profile

A. Dobjani¹; I. Bogevska Naumovska¹; E. Vraynko¹; E. Shehu¹; H. Taravari¹; V. Andova¹; H. Pejkov¹; M. Vavlukis¹

¹University Clinic of Cardiology, Skopje, North Macedonia

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Introductions and objectives: Left ventricular (LV) systolic dysfunction is one of the most important determinants of long-term outcome in acute coronary syndrome (ACS).

Aim: To determine the impact of the patient's risk profile on the LV systolic function.

Methods: A single-center cross-sectional cohort study that included 3093 patients with ACS without pre-existing LV dysfunction. The comparison was performed between patients who did or did not develop a reduction in LV systolic function during the index event (<50%/≥50%), analyzing patients' demographic, clinical, biochemical data, LV functional data, and anatomical distribution of the coronary artery disease (CAD).

Result: 1369 patients out of 3093 developed LV systolic dysfunction (44.3%). They were predominantly males 75.1% (1028, $p=0.002$; older (63.39 ± 11.04 vs 61.21 ± 11.12 , $p<0.00000$); had higher level of cardiac troponin ($p=0.00002$), higher stress glycemia (9.2 ± 5.3 ; $p=0.0000001$), HbA1c (6.9 ± 1.8 , $p=0.000003$), WBC (11.7 ± 4.1 , $p=0.00001$), blood urea nitrogen (BUN) (6.8 ± 3.7 , $p=0.000003$), and creatinine (93.2 ± 45.1 $p=0.000167$), and had anemia (OR 0.35 (CI 0.29–41, $p=0.000012$). They had more severe CAD (SINTAX score 16.8 ± 8.4 $p=0.000012$). Patients with preserved LV systolic function were predominantly females (29.7%, OR 1.1 95% CI 1.0–1.2), $p=0.002$, younger ($p<0.00000$), and severely metabolically burdened (hypothyreosis (2.7%, OR 1.28 95% CI 0.93–1.76, $p=0.052$), higher levels of triglycerides (2.2 ± 1.7 vs 1.9 ± 1.5 , $p=0.001$), cholesterol (5.3 ± 1.4 vs 5.2 ± 1.4 , $p=0.002$), non-HDL-C (4.1 ± 1.5 vs 3.9 ± 1.3 , $p=0.006$), however less likely to have pre-existing DM (OR 0.8 (CI 0.78–0.92), $p=0.000094$). They were more often NSTEMI [851 (49.4%), $p=0.000012$]. Independent variables associated with a reduction in LV function were: advanced age, male gender, previous DM and anemia, stress glycemia, WBC, creatinine, and BUN.

Conclusion: Patients who developed reduced LV function had a very specific risk profile with bigger neuro-hormonal activation and inflammation, higher degree of myocardial damage, and worse renal function, whereas those with preserved LV systolic function after ACS were younger, predominantly females, more severely metabolically burdened, more often with NSTEMI and without LAD involvement.

Constant	22.850	.000	1.000	83856859 90.779		
Gender (male)	.430	22.608	.000	1.538	1.288	1.836
age	-.018	21.715	.000	.982	.975	.990
Stress glycemia	-.038	20.945	.000	.963	.948	.979
Chol	.246	4.586	.032	1.278	1.021	1.600
LDL-C	-.238	3.626	.057	.788	.617	1.007
anaemia	.309	8.693	.003	1.362	1.109	1.673
WBC	-.066	38.428	.000	.936	.916	.956
BUN	-.037	7.503	.006	.964	.939	.990
Constant	1.899	28.745	.000	6.680		