Importance of the anthropometric parameters in patients with acute ST-elevation myocardial infarction

Purpose: Investigation of the anthropometric parameters influence on clinical severity and prognosis in patients with acute ST-elevation myocardial infarction (STEMI) treated with primary percutaneous coronary intervention (PCI).

Methods: We prospectively analysed 250 patients with acute STEMI treated with primary PCI, between September 2011 and September 2012. They were grouped according to the anthropometric parameters (body mass index (BMI), waist circumference (WC) and waist-to-hip ratio (WHR)) and its values, as follows: BMI (< 25.0, 25.0-29.9, ≥ 30.0 kg/m²), WC (<102/88, ≥ 102/88 cm), WHR (< 0.90/0.85, ≥ 0.90/0.85). The groups were compared and analysed in accordance with their baseline (medical history, demographic and anthropometric parameters) and clinical data (parameters of severity and prognosis of acute STEMI), severity (evaluated by using clinical, laboratory, echocardiography, coronary angiography, and in-hospital complications parameters) and prognosis (evaluated by using the major adverse cardiovascular events (MACE) parameters and sick leave duration (SLD), during 12 months follow-up period). Statistical significance was defined as $p<0.05$.

Results: Patients with higher BMI had higher rates of hypertension ($p<0.05$) and dyslipidemia ($p<0.05$), lower rate of dyspnea ($p<0.05$), longer hospitalization ($p<0.05$), and higher stents diameter ($p<0.05$). Higher WC and WHR were associated with higher rates of metabolic syndrome ($p<0.05$), higher WC with hypertension ($p<0.05$), and higher WHR with dyslipidemia ($p<0.05$), earlier acute STEMI appearance ($p<0.05$), and proximal/middle coronary segments stenosis ($p<0.05$).

Conclusion: BMI and especially WHR are independent predictors of severity in patients with acute STEMI, while WC was not. Anthropometry has no influence on prognosis in these patients.