Abstract No. **64**
Category: **Acute Coronary Syndromes**
Title: **Higher Plasma Levels of Proprotein Convertase Subtilisin/Kexin Type 9 After a Myocardial Infarction are Associated With Later Worsening of Left Ventricular Function**
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Abstract:

Background: Acute coronary syndromes (ACS) may cause progressive deterioration of left ventricular ejection fraction (LVEF). Higher plasma PCSK9 may reflect impaired LDL catabolism, greater burden of atherosclerotic disease and predisposition to larger deterioration of LVEF after an ACS. The study aim was to assess the association between post-event PCSK9 and reductions of LVEF at the first post-event transthoracic echocardiography in patients with myocardial infarction.

Methods: This was a single-center cohort study of patients admitted with a confirmed myocardial infarction. We measured plasma PCSK9, NTpro-BNP, troponin and hsCRP within the first two days after the ACS. We also performed a transthoracic echocardiography and coronary angiography at the index hospitalization. We then compared the concentrations of these biomarkers between two groups of patients: i. Those who exhibited a decrease in their LVEF at the first post-discharge echocardiography and ii. Those who exhibited a positive or no change on their LVEF (median 132 days).

Results: We included 77 patients, 14 women (18%) and 63 men (82%), mean age 62.6 +/- 11.7. Mean plasma PCSK9 at the time of the event were 398.6 +/- 246.5 ng/mL. At the first post-discharge echocardiography, LVEF had decreased in 24 (31.2%) patients. Peri-event plasma concentrations of nTproBNP (p=0.83), Troponin (p=0.69), hsCRP (p=0.56) and LDL-c (p=0.58) did not differ significantly between groups. Meanwhile, patients whose LVEF decreased had 40% higher peri-event plasma PCSK9 relative to patients with preserved or improved ejection fraction (493 vs 352 ng/mL, p=0.02) (Figure 1). Since length of follow-up could be a confounder in this association, we compared follow-up times between the two groups and found no difference (p=0.41). Most patients in either group had obstruction of 2 coronary vessels, and there was no significant association between the number of occluded vessels and the probability of developing reduced LVEF (p=0.68 for the chi-square test).

Conclusion: Plasma PCSK9 markedly increased in ACS patients who later develop LVEF deterioration. This may reflect the impact of impaired LDL metabolism on the evolution of ventricular function.