Prošireni sažetak / Extended abstract

# *Ramipril and losartan are equal in preventing left ventricular systolic dysfunction in ST-elevation myocardial infarction patients treated by primary percutaneous coronary intervention*

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**Objectives:** To compare the efficacy of ramipril and losartan in prevention of the left ventricular systolic dysfunction and heart failure in ST-elevation myocardial infarction (STEMI) patients treated by primary percutaneous coronary intervention (PPCI) in short (8 weeks) and long-term (six months) after acute coronary event.

**Patients and Methods:** 55 STEMI patients (mean age 58.4 ±9.9 years, 63.6% of men) in Killip classes I-II were included; excluded were the patients with pulmonary edema, cardiogenic shock, brochospasm. All the patients underwent PPCI. 29 patients were randomly assigned to receive ramipril and 26 to losartan 24 to 48 hours after PPCI. Systolic function was estimated by echocardiography prior to randomization, 8 weeks and 6 months thereafter. Ejection fraction (EF) was measured by modified biplane Simpson's method (normal levels >55%), left ventricular end-diastolic diameter (LVDD) in standard echocardiographic positions (normal levels <50 mm). NT-proBNP was estimated prior to randomization, 8 weeks and six months after randomization by the electrochemiluminescence immunoassay (Elecsys 2010 analyzer, Roche Diagnostics).

**Results:** Mean baseline EF was 53.2±8.9%, NT-proBNP 220.0±190.5 pmol/l, LVDD 74.76±5.7 mm. EF <55% was present in 50.9%, LVDD >50 mm in 43.6% and NT-proBNP >200 pmol/l in 47.2% of patients. We did not demonstrate any significant differences between ramipril and losartan group neither at baseline nor after 8 weeks and six months of treatment in mean EF, LVDD and NT-proBNP. Within ramipril group as well as within losartan group there was an insignificant increase in mean EF and LVDD after 8 weeks and six months regarding baseline. Within the groups there was a significant decrease in mean NT-proBNP. Within ramipril group, the mean NT-proBNP decreased significantly after 8 weeks (205±180.8 pmol/l vs 67.0±66.9 pmol/l, $p<0.01$) and six months (205.0±180.8 pmol/l vs 33.1±27.9 pmol/l, $p<0.001$) regarding the baseline levels. Within losartan group, NT-proBNP also decreased significantly after 8 weeks (237.4±203.5 pmol/l vs 89.2±101.2 pmol/l, $p<0.01$) and six months (237.4±203.5 pmol/l vs 52.3±76.8 pmol/l, $p<0.001$).

**Conclusion:** In nearly 50% of our asymptomatic (Killip classes I-II) STEMI patients after PPCI NT-proBNP was increased >200 pmol/l. The efficacy of losartan was equal to ramipril in reducing NT-proBNP and increasing EF 8 weeks and six months after randomization suggesting that they equally prevent heart failure and systolic dysfunction in STEMI patients, treated by PPCI.

**KEYWORDS:** ST-elevation myocardial infarction, percutaneous coronary intervention, ramipril, losartan.

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## Literature

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