CABG can improve prognosis and quality of life in coronary artery disease. But this is true only for well-defined categories of patients (with significant stenosis of the left main stem or significant proximal stenosis of three major vessels). PCI is also very effective in treating acute coronary syndromes, but the evidence for its use in patients with stable angina is much less conclusive. In some cases, the risk of the procedure maybe higher than its potential efficacy and myocardial revascularization itself can have deleterious effects on the myocardium through ischemia-reperfusion injury. Therefore, myocardial revascularization is not a panacea for all patients with stable angina and pharmacological treatment plays an important role before, during and after revascularization.

**METHODS**

Patients were randomized into two groups – the group of active therapy (TMZ MR started two weeks prior to CABG and continued for the next 3 years, n=153) and a control group (without TMZ MR, n=153). 306 pts with CAD (mean age 55.2±8.1), stable angina (2.9±0.2 CCS), left ventricular aneurism (12.1% of pts) and heart failure (2.2±0.1 NYHA) were included into this long-term, prospective, randomized clinical trial.

**OBJECTIVE**

Purpose: several preliminary trials showed that pretreatment with trimetazidine (TMZ) reduces ischemia-reperfusion damage during coronary revascularization. Moreover, short-term TMZ therapy provides anti-ischemic efficacy in patients (pts) with history of coronary artery bypass grafting (CABG) and recurrent angina.

**RESULTS**

Baseline clinical and intervention characteristics were the same in the two groups of pts with CAD. In the early postoperative period significantly lower plasma levels of creatine phosphokinase (CPK) and MB-CPK were found in the TMZ MR group (6 hours after CABG). Paroxysms of atrial fibrillation were noted less often in the TMZ MR group than in the control group (in 13.7% and 17.6% of cases, p < 0.05). Over the 3 years of follow-up, left ventricular ejection fraction (EF) increased by 15.3% (p<0.05) in the group of pts receiving TMZ MR while no significant change was observed in the control group (+1.5%, N.S.). Moreover, a significant increase of total exercise time was noted in group of TMZ MR (from 8.7±0.03 to 15.8±0.04 min, p < 0.05) but not in the control group (from 8.5±0.04 to 10.4±0.05 min; N.S.). Recurrence of angina was significantly lower in TMZ MR group when compared to the control group (7.2% vs. 12.4%, p < 0.05).

**CONCLUSION**

1. Treatment with trimetazidine modified release prior to CABG permits a reduction in ischemia-reperfusion injury in patients with coronary artery disease.

2. Long-term therapy in CAD pts with trimetazidine modified release provides an improvement of the systolic left ventricular function with an increase in exercise tolerance.