Objectives To evaluate the additional benefit of preventive administration of anisodamine to tirofiban during primary PCI on myocardial reperfusion.

Methods This study was prospectively observed the hemodynamic effects of anisodamine in STEMI patients undergoing early PCI following thrombolysis. From March 2010 to December 2010, consecutive STEMI patients within 12 h after thrombolysis were enrolled. All eligible patients were randomly assigned to anisodamine group (ANI) and control group (CON). Patients in ANI group received intracoronary bolus injection of anisodamine (2000 μg, 10 ml) over 2 min according to the heart rate and blood pressure, and the same volume of 0.9% sodium chloride in the CON group. The other medications and laboratory examinations were the same as phase 1. The primary end point was the level of TMPG after PCI, and the second end points were including the hemodynamic parameters, STR, peak level of CK-MB, LVEF and major adverse cardiac events after PCI.

Results Seventy-six patients were prospectively enrolled, with 39 in ANI group and 37 in CON group. No significant differences in baseline clinical data and baseline angiography data were found (all p>0.05). Compared to CON group, the rate of TMPG 3 was higher in ANI group, while the CTFC was lower (both p<0.05). There was a mild increase of heart rate, SBP and DBP after administration of anisodamine (all p<0.05). There were significant differences in the peak level of CK-MB, LVEF and STR in the ANI group. The incidences of MACE were similar between the two groups.

Conclusions Intracoronary administration of anisodamine before PCI could improve the myocardial perfusion which may be result in the hemodynamic effects of anisodamine.