Objectives  To investigate the effect of different reperfusion strategy on brain natriuretic peptide (BNP) levels and prognosis of patients with acute myocardial infarction (AMI).

Methods  102 patients with AMI were divided into four groups: primary percutaneous coronary intervention (PCI) group (n=40); thrombolysis group (n=21); delayed PCI group (n=23) and control group (n=18). Plasma BNP levels were determined with Triage rapid assay at admission, at 24 h and 7, 14, 28 days after admission for four groups. Left ventricular ejection fraction (LVEF) was assessed by echocardiography with the modified Simpson’s equation on 7 days and 28 days after admission. The main end point of the trial was a 1-year incidence of major adverse cardiac events (heart failure, angina, malignant arrhythmia and death).

Results  Plasma BNP levels in primary PCI, thrombolysis and delayed PCI groups were significantly lower than those of control group at 24 h and 7, 14, 28 days after admission (p<0.01). Plasma BNP levels in primary PCI group were significantly lower than those of thrombolysis and delayed PCI groups after admission (p<0.01). There was significant difference in BNP levels between thrombolysis and delayed PCI groups at 14, 28 days after admission (p<0.05). LVEF levels in primary PCI group were significantly higher than those of thrombolysis, delayed PCI and control groups at corresponding time points (p<0.01). LVEF levels in delayed PCI was higher than those of thrombolysis group at 28 days after admission (p<0.05). Followed up for 1 year, lower incidence of major adverse cardiac events was observed in primary PCI (p<0.01), thrombolysis (p<0.05) and delayed PCI (p<0.05) groups than that of control group. There was significant difference in mortality between primary PCI and control group (p<0.05).

Conclusions  All of three reperfusion strategy can decrease BNP levels and improve LVEF levels and prognosis in patients with AMI. Primary PCI is the most effective and preferred reperfusion method.