

ORAL PRESENTATION

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Echocardiographic evaluation of a single bolus of erythropoietin effects on reducing ischemia-reperfusion injuries during coronary artery bypass graft surgery. A randomized, double blinded placebo control study

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Background

Erythropoietin (EPO) is known as a regulating hormone for production of red blood cells called Erythropoiesis. Some studies have shown that erythropoietin have some non-hematopoietic protective effects on ischemia-reperfusion injury in myocardial cells. We evaluated the effect of exogenous EPO infusion on reducing ischemia-reperfusion injuries and improvement of cardiac function by echocardiography shortly after coronary artery bypass graft surgery.

Methods

43 patients were joined the study and randomly divided in two groups, EPO group: receiving standard medication and CABG surgery plus 700 IU/kg erythropoietin (PD Poietin, puyeshdaroo, Iran) and control group: receiving standard medication and CABG surgery plus 10cc normal saline as placebo. The cardiac function was assessed by Echocardiography in all patients in before, 4 days after and also 30 days after CABG operation.

Results

Echocardiography indicated that EF had no differences between EPO and control group at 4 days (47.05 ± 6.29 vs 45.90 ± 4.97 , $P=0.334$) or 30 days after surgery (47.27 ± 28 vs 46.62 ± 5.7 , $P=0.69$). There were no differences between EPO and control group in wall motion score index at 4 days ($P=0.83$) or 30 days after surgery ($P=0.902$). In EPO

group: Left ventricle end systolic and diastolic diameter (LVESD, LVEDD) had reduction, as compared to control group.

Conclusions

Our data suggest that peri-operatively exogenous EPO infusion can't improve ventricular function and Wall motion index in first weeks after surgery. But as compared to control group, reduction in LVEDD and LVESD at 4 days or 30 days after CABG surgery in EPO group suggested that EPO had correlation with reduction of myocytes remodeling and reperfusion injury early after CABG surgery.

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