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## Acute Coronary Syndromes

# RANDOMIZED TRIAL OF INTRACORONARY ERYTHROPOIETIN THERAPY AT THE TIME OF REPERFUSION IN ACUTE ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION

Poster Contributions
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Authors: *Won-Woo Seo, Jung-Won Suh, Jin-Joo Park, Chang-Hwan Yoon, Young-Seok Cho, Tae-Jin Youn, In-Ho Chae, Dong-Ju Choi, Seoul National University Bundang Hospital, Seongnam, South Korea*

**Background:** Recent clinical studies have shown contradictory results about the effect of erythropoietin (EPO) on reperfusion injury in myocardial infarction. In this study, we investigated whether the intracoronary administration of long acting EPO, darbepoetin-α, at the time of reperfusion would reduce infarct size or pathologic left ventricular (LV) remodeling in patients with ST-segment elevation myocardial infarction (STEMI).

**Methods:** We randomly assigned 80 STEMI patients (onset < 12 hr) to the EPO and placebo group. Each group was treated with intracoronary bolus (300 ug) darbepoetin-α or saline via over-the-wire balloon at the time of first balloon inflation. Cardiac enzymes (CK-MB and TnI) were measured for 48 hours after reperfusion. 57 patients completed cardiac magnetic resonance (CMR) at discharge and after 4 months. Primary endpoint was the infarct size estimated by peak cardiac enzymes. Secondary endpoints were LV remodeling index {[LV end diastolic volume (LVEDV) at 4 month - baseline LVEDV] / baseline LVEDV X 100} and the incidence of pathologic LV remodeling (LV remodeling index > 20%), the change in LV ejection fraction, LVEDV, infarct size assessed by CMR and major adverse cardiovascular events (cardiac death, myocardial infarction, rehospitalization or cerebral infarction) during 4 months.

**Results:** The peak level of cardiac enzyme were not significantly different between EPO and placebo group (CK-MB; 299.2 ± 189.2 vs 285.8 ± 217.8, respectively, p=0.77: TnI; 158.0 ± 132.7 vs 143.8 ± 123.8, respectively, p=0.62). At 4 months, the LV remodeling index was not statistically different between the 2 groups (EPO -0.16 ± 14.43 % vs placebo 4.80 ± 16.28 %, p=0.24) and the incidence of pathologic LV remodeling also did not differ (EPO 8.0 % vs placebo 6.7 %, p=0.62). There were no significant differences between the 2 groups with respect to LV ejection fraction, LVEDV and infarct size at baseline and 4 months. The major adverse cardiovascular events occurred in 5 patients (12.8 %) in the EPO and 3 patients (7.5 %) in the placebo (p=0.48).

**Conclusion:** Intracoronary darbepoetin-α therapy at the time of reperfusion did not reduce infarct size or pathologic LV remodeling in patients with STEMI.