IV Erythropoietin in Acute ST Elevation Myocardial Infarction.

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Purpose: Erythropoietin has shown a potent cardioprotective effect during acute myocardial infarction (AMI) in *in-vitro* and animal models. This study aims to investigate the effect of IV erythropoietin in patients with AMI.

Methods: A double blind, placebo controlled, randomized study for patients with first occurrence of STEMI was performed. The trial compares the safety and efficacy of patients receiving reperfusion treatments plus intravenous erythropoietin (20,000 units), versus patients receiving identical treatments plus placebo. Data was collected for one year post event.

Results: Between July 2006-May 2008, 32 patients enrolled in the study. Patients were randomly assigned into treatment (17 Patients aged 57.5±8.7 years) and placebo (15 Patients aged 50.1±11.0 years). Baseline characteristics of the groups were without significant differences. 94.1% of patients in the treatment arm and 93.3% in the placebo were treated with primary PCI, while others were treated with thrombolysis. Standard medical regimen post infarction was consistent in both groups. Erythropoietin levels in the blood peaked at 2914.1 and 113.8 munits/mL in the treatment vs. placebo group respectively. Side effects included two patients with allergic reaction (one per group), and one with thrombocytopenia due to aspirin. There were no differences in CPK levels. BNP levels at 30 days were not significant (1727.0±3095.8 and 788.4±691.6 pg/mL for treatment and placebo respectively). Left ventricular ejection fractions at baseline (43.8±8.1 vs. 43.1±8.9) and follow-up (50.0±9.6 vs. 46.9±9.7) were not significant.

Conclusion: Treatment with IV erythropoetin is safe during AMI. A larger study is needed to assess erythropoietin's efficacy.