عنوان مقاله:

Erythropoietin in the clinical trials of the cardiac disease, what is and what is not

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خلاصه مقاله:

Erythropoietin (EPO) is the main erythropoiesis hormone, activates the progenitor red blood cells through proliferation, differentiation, and maturation of red blood cells. However, it's another receptor in other tissues, including heart and endothelium, confirm its pluripotent activities. Numerous preclinical studies have shown EPO would be cardioprotective against ischemic events, reperfusion injury and apoptosis. The results of EPO in clinical studies were inconclusive with even associated increased risk of adverse outcomes. In this article, a comprehensive review of the EPO effects is evaluated in coronary artery disease, cardiac surgery, heart failure, and its safety through the results of the most recent clinical trials related to EPO in cardiovascular disease. The analysis of the available clinical trials demonstrates the most determining factors; EPO dose and administration time related to myocardial ischemia onset. It seems the low dose EPO treatment has a tissue-protective effect through its receptors, while the higher doses of EPO stimulate the other EPO receptors responsible for erythropoiesis. The safety of high dose EPO therapy to increase the risk of thrombotic complications has been controversial. The erythropoiesis-stimulating agents have been proven to successfully correct hemoglobin levels, reduce the need for blood products after surgery and can improve .the clinical outcomes, without increased thromboembolic risk

کلمات کلیدی:

Acute myocardial infarction; Cardioprotection; Cardiovascular outcomes; Heart failure; Erythropoietin; Reperfusion injury