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Titel des Beitrags: The influence of Erythropoietin on platelet activation, thrombin generation and FVII/active FVII in patients with AMI.

Abstract: Erythropoietin (Epo) has been shown to improve myocardial function in models of experimental myocardial infarction, but has also been associated with a rise in thromboembolic events. Thus, the aim of this study was to investigate the influence of Epo on platelet activation and coagulation in patients with acute myocardial infarction (AMI). The study was designed as a substudy of the randomised, double-blind, placebo controlled REVIVAL-3 (REgeneration of Vital Myocardium in ST-Segment Elevation Myocardial Infarction by Erythropoietin) study that investigated the effects of recombinant human Epo in AMI. Serial venous blood samples were collected before and after study medication. Circulating prothrombin fragment F1 + 2, FVII, active FVII, beta thromboglobulin (TG) and P-Selectin were measured before and 60 hours after randomization by immunoassay (n = 94). In a randomly selected subgroup platelet aggregation was measured using whole blood aggregometry (Multiplate Analyzer, n = 45). After 5 days an increase in FVII was observed after Epo as compared to placebo (P = 0.02), yet active FVII and prothrombin fragment F1 + 2 remained unchanged. Moreover, no statistically significant differences in circulating TG or P-selectin were observed between the groups. As an expected response to
peri-interventional therapy with clopidogrel and aspirin, platelet aggregation after stimulation with ADP, TRAP, ASPI or collagen decreased 12 hours and 2 days after PCI. However, no difference between the Epo and the placebo group was observed. After treatment with Epo in patients with AMI a slight increase in circulating FVII after Epo was not associated with an increase in active FVII, prothrombin fragment F1 + 2, TG or P-selectin. Moreover, platelet aggregation was not altered after treatment with Epo as compared to placebo. ClinicalTrials.gov Identifier: NCT01761435.