

## **Anemia and Inflammation Predict Adverse Outcomes Following Percutaneous Coronary Interventions**

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Background: Anemia and Inflammation are both associated with an unfavorable outcomes in ischemic heart disease patients. In a previous report we showed that Inflammation was associated with lower hemoglobin concentrations in myocardial infarction (MI) patients undergoing percutaneous coronary intervention (PCI). We now analyze the additive value of each variable on patient's outcomes.

Methods: We performed an analysis on prospectively collected data at a tertiary hospital catheterization laboratory. Cox regression models were fitted for hemoglobin and C-reactive protein (CRP) cut-offs (hemoglobin above and below lower limit of norm and CRP above and below 3mg/l) and performed separately for MI (ST and non ST segment elevation) and angina pectoris (AP) patients (stable and unstable). Major adverse cardiovascular events were defined as all cause mortality, myocardial infarction and stroke. Follow up time was defined as the time from PCI to either MACE or November 20, 2011.

Results: Included were 1976 patients (825 with angina pectoris [AP] and 1151 with myocardial infarction [MI]). The median follow up in the MI and the AP were 14 and 13 months, respectively (maximal follow up of 4 years). In the myocardial infarction group, the risk of MACE during follow-up was increased with the presence of either anemia (HR=2.1, p=0.07) or of elevated CRP (HR=1.9, p=0.04), while the presence of both increased the risk even further (HR=3.4, p<0.01). In the AP group, the risk of MACE was increased only in patients who had both anemia and elevated CRP (HR=2.9, p<0.01). In general, traditional risk factors as well as coronary disease severity did not predict adverse outcomes during the follow-up period.

Conclusions: Inflammation and anemia are independently and additively associated with MACE in MI patients.