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i2 SUMMIT

THE EFFECT OF PLATELET REACTIVITY ON INFARCT RELATED ARTERY PATENCY IN PATIENTS WITH ST-ELEVATION MYOCARDIAL INFARCTION

i2 Poster Contributions
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Background: Both an occluded infarct related artery (IRA) on initial angiography and heightened platelet reactivity at the time of primary PCI are associated with a worsened clinical outcome in patients with ST-elevation myocardial infarction (STEMI). However, the relationship between platelet reactivity and IRA patency has not yet been established. The present study sought to explore this relationship.

Methods: One hundred consecutive STEMI-patients were enrolled. Patients who had thrombolysis in myocardial infarction (TIMI) 0 or 1 flow on initial angiography constituted the occluded IRA group and patients having TIMI 2 or 3 flow constituted the IRA patent group. Platelet function measurements were performed with the PFA-100 COL/ADP cartridge and "classical" light transmittance aggregometry, after stimulation with 5 and 20 μM ADP.

Results: Half of the patients presented with a patent IRA. Mean time from symptoms onset until arrival at the catheterization laboratory was relatively short and a non-significant trend was shown towards shorter arrival times in patients with an open IRA; 156.66±107.3 minutes vs 126.32±67.4 minutes, with p=0.11. In univariate analysis it was shown that patients with an occluded IRA had higher leukocytes counts (12.34±3.61 vs. 10.11±3.3, p<0.001) and exhibited a higher magnitude of platelet reactivity (represented by shorter COL/ADP closure times (98.07±53.6 sec vs 118.21±52.4sec, p<0.01) and higher adenosine diphosphate (ADP)-induced platelet aggregation (68.24±11.67 vs 62.05±16.26, p=0.03). Multivariate analysis identified the following independent factors that were associated with an occluded IRA; leukocytes count (Odds Ratio (OR), 1.211; 95% CI, 1.052-1.394; p = 0.008), short COL/ADP closure time (OR), 0.60; 95% CI, 0.39-.93; p=0.02) and the high ADP-induced (20μM) LTA (OR, 1.77; 95% CI, 1.15-2.73; p=0.01).

Conclusions: Elevated leukocytes counts and heightened platelet reactivity (represented by short COL/ADP closure time and high ADP-induced aggregation) are associated with an occluded IRA upon presentation in STEMI-patients.