CIRCULATING MONOCYTE-PLATELET AGGREGATES ARE HIGHER IN ACUTE CORONARY SYNDROME

Poster Contributions
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Background: Platelets are a major culprit in atherothrombosis; yet measurement of platelet activity is not standardized. Circulating monocyte platelet aggregates (MPA) have been suggested to represent in vivo platelet activation. We investigated the reproducibility and effect of aspirin in controls, and association of MPA with stable coronary artery disease (CAD) and acute coronary syndromes (ACS).

Methods: Following an overnight fast, 48 healthy controls had weekly assessment of platelet activity and were administered 81 mg aspirin daily for 7 days between weeks 3 and 4. Subjects with stable CAD or ACS on aspirin were recruited for comparison. MPA were identified by CD14/CD61 positivity. Data is represented as median (IQR, inter quartile range). Wilcoxon signed rank, Kruskal-Wallis and Friedman tests were used to analyze data.

Results: Monocyte platelet aggregates were not significantly different over time (week 1: 8.7 [8.0, 11.2], week 2: 9.7 [8.4, 10.4], week 3: 8.9 [7.2, 11.4], P=0.93). Aspirin had no effect on MPA (pre 9.4 [8.3, 10.3] vs. post aspirin 9.2 [7.4, 11.0], P =0.17). MPA was significantly higher across the spectrum of disease (Figure). After multivariable adjustment for age, sex and race, ACS was significantly associated with MPA, (P=0.03).

Conclusion: Monocyte-platelet aggregates are reproducible, not affected by low-dose aspirin, and significantly higher in subjects with ACS. Future studies correlating MPA with incident cardiovascular events are warranted.