

Aspirin Failure Is Associated with Worse Clinical Outcome but without Inadequate Platelet Response to Aspirin in Acute Myocardial Infarction patients

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Background: The occurrence of acute coronary syndrome despite aspirin use is coined as aspirin failure. This phenomenon is associated with a higher cardiovascular risk profile and worse prognosis. The issue whether this phenomenon is a manifestation of patients' characteristics or failure of adequate platelet inhibition by aspirin (aspirin resistance) has never been studied.

Methods: We evaluated 176 consecutive patients who presented with an acute myocardial infarction. Patient's baseline characteristics were recorded and platelet function in response to arachidonic acid (AA) and ADP was studied by light transmitted aggregometry upon discharge. Patients were followed for a period of 6 months for MACE (Death, Re-myocardial infarction, Re-angina).

Results: 118 (67%) patients were aspirin "naive" and 58 (33%) were on prior aspirin treatment. Patients on prior aspirin therapy were older (63 vs. 58 years $P=0.003$), more likely to be hypertensive (69% vs. 41%, $p<0.01$), hyperlipidemic (67% vs. 34%, $p<0.01$) and to have a prior cardiovascular event and/or procedure (35% vs. 6%, $P<0.01$). During a 6 month follow up period, "aspirin failure" was associated with a higher incidence of MACE ($p=0.048$). Patient with prior aspirin use eventually had lower platelet function, both in response to AA (32 ± 24 vs. 45 ± 30 , $P=0.0041$) and ADP (57 ± 19 vs. 62 ± 18 , $P=0.097$).

Conclusions: Our results suggest that "aspirin failure" is merely a marker of a higher risk profile of patients and not a manifestation of inadequate platelet response to aspirin therapy.