Frequency of Aspirin Resistance, Clopidogrel resistance In Patients With Coronary Artery Disease & its clinical significance

Ahmed Salah El-Din, Mohammed Ibrahim El-Desuky MD, Amal Rezq MD, Amr El-Hadedy MD.

Abstract:

Introduction: Aspirin and clopidogrel are important components of medical therapy for patients with cardiovascular or cerebrovascular diseases. Despite their use, a significant number of patients experience recurrent adverse ischemic events. Interindividual variability of platelet aggregation in response to these antiplatelet agents may be an explanation for some of these recurrent events, and small trials have linked "aspirin and/or clopidogrel resistance", as measured by platelet function tests, to adverse events.

Objectives: The aim of this study was to estimate the prevalence of Aspirin and Clopidogrel resistance in patients with CAD and evaluate its impact on clinical outcome in our population.

Methods: A total of 100 patients were divided into 2 separate groups (Aspirin group, 50 patients maintained on Aspirin 150 mg/day& Clopidogrel group, 50 patients maintained on Aspirin 150 mg plus Clopidogrel 75 mg/day). Both groups were evaluated for antiplatelet resistance using LTA, Aspirin resistance was defined as a mean aggregation of >20% with 0.5 mg/ml AA, Clopidogrel resistance was defined as ≤ 10% absolute difference between baseline and post-treatment platelet aggregation with10 μmol/ml ADP. Both groups were followed up for 6 months regarding (cardiac death, UA, MI and nonhemorrhagic stroke).

Results: In Aspirin group, prevalence of resistance was 48%. There was a significant correlation between resistance and [family history of CAD (p=0.044), smoking (p=0.011), history of MI (p=0.24), history of PCI (p=0.001), aspirin non compliance (p=0.001) and NSAIDs intake (p=0.047)]. Resistance was more common among patients with Two and multi-vessel CAD (p=0.024). Resistant patients had significant higher rates of unstable angina (p=0.001) and all MACE (p<0.001). In Clopidogrel group, Prevalence of resistance was 30%. Resistance was higher among generic types than the original clopidogrel. Patients taking statins had a significant low risk for resistance (p=0.024). Resistance was more common among patients with two and multi-vessel CAD (p=0.047). Resistant patients had significant higher rates of unstable angina (p=0.004), and all MACE (p<0.001).

Conclusion: In this study, the prevalence of Aspirin and Clopidogrel resistance were 48% and 30%, respectively. The resistant patients had a significant higher rate of unstable angina and all MACE.

Abbreviations: ***CAD*** (coronary artery disease)***, LTA*** (light transmission aggregometry)***, AA*** (arachidonic acid)***, UA*** (unstable angina)***, MI*** (myocardial infarction)***, PCI*** (percutaneous coronary intervention)***, MACE*** (major adverse cardiac events).

Keywords: Aspirin resistance, Clopidogrel resistance, Coronary artery disease, Clinical significance.