The CYP2C19 Polymorphisms in Saudi Population: Clinical Response to Clopidogrel in Coronary Artery Disease

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A previous study demonstrated that 5.5 % of the Saudi population have Coronary Artery Disease- CAD. Plavix (Clopidogrel) is the preventative measure of choice and is a prodrug antiplatelet agent that requires biotransformation by cytochrome P450 (CYP450-2C19) into an active metabolite. There is considerable ethnic variation in the frequency and distribution of the alleles. A national study showed a raised prevalence of polymorphism associated with a high risk of bleeding. This original research has two aims; to determine the incidence of the common CYP2C19 allele frequencies in Saudi population; To determine the distribution and clinical significance of cytochrome CYP2C19 polymorphisms in separate cohort of patients who have CAD. For the first aim, determining the prevalence of selected single nucleotide polymorphisms (SNPs) was accomplished using 500 individuals from the blood donor samples from the Institutional blood bank. For the second aim, the association of these genetic variants with cardiovascular outcomes will be investigated using analysis of more than 30 samples patients undergoing Percutaneous Trans-luminal Coronary Artery (PTCA) intervention. Patients will be classified according to the CYP2C19 alleles as carriers or non-carriers and the associated clinical outcomes .The first result showed that 15.8% of the samples were *2heterozygous and 1% were *2Homozygouse, which indicates significant prevalence, The second result showed that 18.52% of the CAD samples were *2heterozygous indicating significant response .This research will hopefully lead to the establishment of the possible correlation of the risk alleles with rates of Major Adverse Cardiac Events (MACE) in Saudi population.

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