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## Oral antiplatelet therapy and platelet inhibition: An experience from a tertiary care center.

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### Abstract

**AIMS AND OBJECTIVES:** Although clopidogrel combined with aspirin is the most commonly used dual drug combination to avert thrombotic events in patients with coronary artery disease, the poor responsiveness to clopidogrel remains a concern. The objective of the current study is to assess the extent of resistance to clopidogrel, prasugrel, and ticagrelor in a real life set of patients with coronary artery disease who underwent percutaneous coronary intervention (PCI).

**MATERIALS AND METHODS:** A total of 539 patients, who underwent PCI and were on aspirin and on any of the three drugs, namely, clopidogrel, prasugrel and ticagrelor, were followed up regularly in the outpatient department. After 24h of initiation of antiplatelet medication, response to the treatment in all the patients was assessed using thrombelastography. The average percentage platelet inhibition was assessed along with the resistance and sensitivity to the drug in each patient. Sensitivity and resistance to the specific drug was defined as >50% and <50% of mean platelet inhibition, respectively.

**RESULTS:** About 99.15% of the patients treated with ticagrelor were sensitive to the drug and the difference between ticagrelor, clopidogrel, and prasugrel groups for sensitivity was significant with a p value of 0.00001, in favor of ticagrelor. It was also found that ticagrelor was significantly (p value of 0.001) associated with least resistance as compared with the other drugs assessed in the study.

**CONCLUSIONS:** Use of ticagrelor as dual therapy along with aspirin in patients with coronary artery disease (CAD) and undergoing PCI was associated with a significantly higher mean percentage platelet inhibition, higher sensitivity, and lower resistance as compared with the usage of clopidogrel or prasugrel.

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**KEYWORDS:** Clopidogrel; Drug resistance; Percutaneous coronary intervention; Prasugrel; Ticagrelor

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