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Impact of cytochrome P450 2C19*2 polymorphism on the clinical cardiovascular events after stent implantation in patients receiving clopidogrel of a southern Tunisian region

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ABSTRACT

Introduction: The concept of clopidogrel resistance, first described in biology is being strengthened by recent data from clinical epidemiology. The cardiologists have been sensitized to this concept because of its possible involvement in the occurrence of coronary stent thrombosis. **Purpose of the study:** The purpose of this study was to investigate the genetic variant of the gene CYP 2C19 in our population and to assess the involvement of this genetic profile in the occurrence of major cardiovascular events (MACE) during the follow-up period. **Methods:** Our prospective study was conducted between May 2009 and September 2010 including 100 patients admitted to the cardiology department for percutaneous coronary stenting. The patients were divided into 2 groups: those with at least one CYP2C19*2 allele (*2 carriers) and non-carriers. **Results:** The mean age of our patients was 56.7 years \pm 10, 5. No remarkable differences in the baseline characteristics were noted between the two groups. The prevalence of CYP2C19*2 allele in our population was 11.5%. Hospital mortality was estimated at 3%. No statistically significant differences were noted between the two groups regarding the occurrence of intra hospital MACE. The mean follow up was 7.5 \pm 4.87 months for the entire study population. The rate of MACE during the follow-up of patients receiving clopidogrel was 8.2% throughout the study population: 5.3% in the *2 non-carriers versus 18.2% in the *2 carriers with a statistically significant difference ($p = 0.075$) at the risk of error of 10%. Concerning the occurrence of stent thrombosis, there was no significant statistical difference between the two study groups. **Conclusion:** From these results it is suggested that CYP2C19*2 polymorphism is associated with increase in the occurrence of MACE among Tunisian patients receiving clopidogrel. A larger study is needed to assess the role of genotyping in the evaluation of the phenomenon of clopidogrel resistance.

KEYWORDS

Clopidogrel; CYP2C19*2 Polymorphism; MACE; Stent Thrombus; Percutaneous Coronary Intervention

Cite this paper

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