The CYP2C19 loss-of-function (LoF) *2 allele is associated with reduced CYP2C19 activity which impairs clopidogrel bioactivation and increases the risk of adverse cardiac outcomes after percutaneous coronary intervention (PCI). To-date, prevalence of the CYP2C19 *2 allele in the Maltese population has not been reported.

RESULTS

- From the 244 patients, 184 (75.4%) were non-carriers (*1/*1) and 60 (24.6%) were carriers of one *2 allele (*1/*2). No patients were genotyped as *2/*2.

- Total frequency of the *2 allele in this Maltese population was 12.3%. Frequency of the *2 allele ranged from 10.9% in Egyptians to 16.9% in Bosnians. Prevalence of the *2 allele in this Maltese population was comparable (p>0.05) to all Mediterranean populations studied (Table 1).

- Prevalence of *2/*2 genotype ranged from zero in Tunisians to 3.1% in Lebanon. Prevalence of *2/*2 genotype in this Maltese population was comparable (p>0.05) to Egyptian, Southern French, Slovenian, Turkish and Tunisian populations (Table 1).

CONCLUSIONS

Twenty-five percent of this Maltese population were carriers of the CYP2C19 LoF *2 allele and the prevalence was comparable to all the Mediterranean populations studied. This finding has important clinical implications for clopidogrel use in Malta since according to CYP2C19 genotype-guided therapeutic recommendations, an alternative antiplatelet agent, such as prasugrel, should be considered in carriers of the *2 allele, provided there is no contra-indication.

Aims

To genotype Maltese patients undergoing PCI for the CYP2C19 *2 allele and to compare prevalence of the *2 allele in this Maltese population to other populations bordering the Mediterranean Sea.

Tyrosine (106) 213 (426) 12.0 (0.889) 1.0 (0.116)

Greek (107) 283 (566) 13.1 (0.697) 2.1 (0.023)*

Table 1: Distribution of CYP2C19 *2 allele and *2/*2 genotype in Maltese vs. other populations bordering the Mediterranean Sea

Maltese (current study) 244 (488) 12.3 0

Bosnian (5) 77 (154) 16.9 (0.144) 2.6 (0.011)*

Croatian (5) 200 (400) 15.0 (0.242) 3.0 (0.007)*

Egyptian (6) 234 (478) 10.9 (0.490) 0.8 (0.162)

French (natural) (7) 475 (950) 12.0 (0.889) 1.0 (0.116)

Greeks (8) 266 (532) 10.9 (0.569) 1.9 (0.030)*

Italian (from reference) (9) 360 (720) 11.0 (0.532) 1.7 (0.040)*

Lebanese (10) 161 (322) 13.4 (0.646) 3.1 (0.006)*

Slovenian (11) 129 (258) 15.9 (0.171) 0.8 (0.162)

Spanish (natural) (12) 362 (724) 13.1 (0.772) 1.9 (0.030)*

Turkish (13) 404 (808) 12.0 (0.873) 1.0 (0.116)

Tunisian (14) 100 (200) 11.5 (0.772) 0 (1.000)


References


