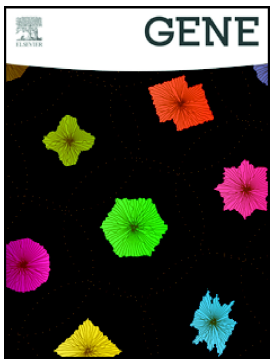

CR1 gene polymorphisms in Chinese patients with paroxysmal nocturnal hemoglobinuria

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CR1 gene polymorphisms in Chinese patients with Paroxysmal Nocturnal Hemoglobinuria

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Abstract

Patients with paroxysmal nocturnal hemoglobinuria (PNH) who have minor allele of the complement receptor 1 (*CR1*) gene, displayed more sub-optimal responder to eculizumab compared with major allele. To investigate polymorphism of the *CR1* gene in Chinese patients with PNH and its correlation with clinical features and the potential impact on eculizumab efficiency, we genotyped *CR1* rs2274567，rs3811381 and the intron 27 Hind III restriction fragment length polymorphism in 95patients with PNH and 96 controls. The results indicated that the genotypes of *CR1* rs2274567, rs3811381 and the intron 27 Hind III in PNH patients and controls both consist with Hardy-Weinberg equilibrium. The minor allele frequency (MAF) of rs2274567 and rs3811381 in PNH patients and normal controls were lower compared with data from the dbSNP database. Further analysis showed that the MAF of Chinese patients was significantly lower than that of Caucasians (P<0.0001, P=0.0006 and P<0.0001, respectively). The minor allele of *CR1* rs2274567 , rs3811381 and the intron 27 Hind III was associated with decreased of hemoglobin level (P=0.007, P=0.022,and P=0.022, respectively) in our patients. However, there was no significantly difference found in other clinical parameters. In conclusion, the results demonstrated the minor alleles of *CR1* polymorphisms were lower in Chinese patients than in Caucasians, with a decrease in hemoglobin level. These findings may indicate less sub-optimal responders to eculizumab in Chinese patients.

Keywords: paroxysmal nocturnal hemoglobinuria; complement receptor 1; polymorphisms; eculizumab response

Introduction

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