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INTERLEUKIN-6 PROMOTOR-634C/G POLYMORPHISM IS ASSOCIATED WITH ATRIAL FIBRILLATION IN ELDERLY HAN CHINESE PATIENTS WITH ESSENTIAL HYPERTENSION

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Objectives There is an accumulating body of evidence indicating strong association between inflammation and the pathogenesis of atrial fibrillation (AF). Interleukin-6 (IL-6) is a pleiotropic cytokine, functions as a mediator of inflammatory response and has both pro-inflammatory and anti-inflammatory properties. Three single nucleotide polymorphisms (SNPs) in the IL-6 promoter region (−597G/A; −634C/G and −174G/C) have been reported to influence IL-6 transcription, and −174G/C was in tight linkage disequilibrium with −597G/A. The −174C allele is extremely rare and the −634C allele is common in eastern Asian populations. The aim of the present study is to investigate the association of −634C>G polymorphism of IL-6 gene with AF in elderly Han Chinese patients with essential hypertension (EH).

Methods A total of 169 elderly patients with EH were eligible for this study. Patients with AF (n=75) were allocated to the AF group, and 94 subjects without AF to the control group. The PCR-based restriction fragment length polymorphism (PCR-RFLP) technique was used to assess the genotypes frequencies.

Results The distribution of the IL-6 −634C>G genotypes (CC, CG, and GG) was 67.02%, 30.85%, and 2.13% in the controls, and 50.67%, 40.00%, and 9.33% in AF subjects, respectively (p=0.0312). The frequency of the G allele in the AF group was significantly higher than that in the control group (29.33% vs 17.55%, p=0.0103). Compared with the wild type CC, the G allele carriers (CG+GG genotypes) had increased risk of AF in both unadjusted (OR=1.98, 95% CI 1.06 to 3.69, p=0.0312) and adjusted analyses (OR=1.93, 95% CI 1.04 to 3.57, p=0.0364).

Conclusions These findings suggest that IL-6 −634C>G polymorphism is associated with AF and the G allele is an independent risk for AF in elderly Han Chinese patients with EH.