

[gw22-e0154]

**GENETIC STUDY OF ISCHEMIA-INDUCED VENTRICULAR ARRHYTHMIA ASSOCIATED WITH POTASSIUM CHANNELS**

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10.1136/heartjnl-2011-300867.147

**Objective** Recent reports and our preliminary research showed that sodium channel gene is one of the disease-causing gene in ischemia-induced ventricular arrhythmia. In this study, candidate potassium genes were screened using direct sequencing to reveal the genetics of ischemia-induced ventricular arrhythmia.

**Methods** DNA were extracted from 23 patients with ischemia-induced ventricular tachycardia/ventricular fibrillation. Eleven candidate genes were screened with direct sequencing methods. Gene variation was compared with 100 normal control subjects to ensure gene mutation or SNP.

**Results** Mutation from 11 potassium channels has not been found in 23 patients. 10 single nucleotide polymorphisms in 11 potassium channel genes (KCNJ12-G216G, KCNJ12-Q192H, KCNJ12-P156L, HERG-F513F, HERG-I489I, KV1.5-P513P, Kir2.1-L382L, Kir6.2-V337I, KCNQ1-P448R, KCNQ1-S546S) have been found. The G216G is a novel SNP in KCNJ12 gene. F513F was found in five patients while in 44 normal con individuals. There is a difference in the incidence of F513F between the two groups ( $p < 0.05$ ).

**Conclusion** A novel SNP of G216G was discovered in Chinese people. The SNP of F513F might be a predisposing factor in ischemia-induced ventricular arrhythmia.