**A NOVEL CACNA1C MUTATION IN A CHINESE FAMILY WITH BRUGADA SYNDROME**

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**Background:**Brugada syndrome is an inherited cardiac disorder caused by various gene mutations. It is featured from syncope to sudden cardiac death and a right precordial ST-segment elevation in the electrocardiogram (ECG).

**Methods:** N/A

**Case report:** A 31-year-old male patient visited the emergency department complaining of chest distress, dyspnea, syncope. ECG recordings indicated giant Brugada waves and recurrent ventricular arrhythmias (Figure A). After appropriate electrical conversion, the ECG showed sinus rhythm with distinctive giant Brugada waves especially in right precordial leads (V1-V3) (Figure B). The medical history of his family members were unremarkable. A novel heterozygous mutation V622I of CACNA1C gene was found in this patient. The same gene mutation was detected in his father and son but they were both asymptomatic (Figure C). Finally, the patient received a diagnosis of Brugada syndrome and an implantable cardioverter defibrillator (ICD). Follow-up was conducted 1 month after the ICD implantation and every 3 months thereafter. During follow-up visits, collected data were from ICD and ECGs indicated giant Brugada waves and no arrhythmias.

**Conclusion:** Genetic testing is important for the diagnosis of Brugada syndrome and ICD implantation is necessary for confirmed Brugada syndrome patients experiencing aborted sudden cardiac death.

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