

## A diagnostic and therapeutic approach towards the Brugada syndrome – Bosnian and Herzegovinian experience

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**Introduction:** Brugada syndrome (BS) is a dominantly inherited arrhythmogenic disease caused by a mutation in the SCN5A gene. It accounts for 20% of cases of sudden death, without structural heart abnormalities<sup>1</sup>. Diagnosing the BS is achievable by electrocardiography (ECG), ST segment elevation in V1 to V3, with the right bundle branch block pattern as a hallmark of the syndrome<sup>2</sup>. BS is divided into three types. However, only type 1 can be verified with an ECG<sup>2,3</sup>. BS manifests as a syncope that is caused by ventricular tachycardia, which, if converted to ventricular fibrillation, leads to a fatal outcome. An implantable cardioverter defibrillator (ICD) implantation is indicated, while pharmacological therapy on its own is not sufficiently effective. Aim: To present a diagnostic and therapeutic approach towards suspected BS in a younger patient.

**Case report:** 24-years-old patient was admitted to a hospital, after a cardiac arrest and a prolonged cardiopulmonary resuscitation with intubation. ECG findings verified sinus rhythm, with heart rate of 94 beats per minute, normal heart axis with PQ interval of 0.16 s, and right bundle branch block (RBBB) with an ST elevation from V1 to V3. An ajmalin provocation test was performed, and ECG changes (J-wave elevation of >2 mm with ST elevation from V1 to V3 with RBBB) were recorded, but without induced ventricular arrhythmia. Patent foramen ovale was suspicious as a cause, but after transesophageal echocardiography it was excluded. According to electrocardiographic changes, the BS was diagnosed as the cause of malignant ventricular heart rhythm. Genetic testing for Brugada syndrome was not performed and in consultations with the Centre for Electrophysiology in Sarajevo (Bosnia and Herzegovina) and Zadar (Croatia), the implantation of an ICD was indicated, and subsequently performed. The patient was discharged under pharmacological therapy consisting of metoprolol 25 mg twice per day, amiodarone 100 mg per day, with magnesium, and aspirin once per day.

**Conclusion:** In daily clinical work, in all conditions of syncope occurring in younger patients, in order to prevent sudden death, an existence of the BS should be considered. An overall clinical status of a patient, including positive ajmaline test with specific ECG changes, can verify BS, even when information on the presence of the SCN5A gene is not available.

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### LITERATURE

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