Ajmaline test — suggested standardized protocol in Brugada syndrome

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Ajmaline test — suggested standardized protocol (Rolf S, Bruns HJ, Wichter T, Kirchhof P, Ribbing M, Wasmer K, Paul M, Breithardt G, Haverkamp W, Eckardt L.The ajmaline challenge in Brugada syndrome: diagnostic impact, safety, and recommended protocol. Eur Heart J. 2003 Jun;24(12):1104-12.)(Poli S, Toniolo M, Maiani M et al. Management of untreatable ventricular arhythmias during pharmacological challenges with sodium-channel blockers for suspected Brugada syndrome.Europace.2018;20:234–42. doi: 10.1093/europace/eux092)	
Indication	Aborted SCD in patients without apparent structural heart disease. Syncope of unknown origin in patients without structural heart disease. Polymorphic VT in patients without structural heart disease. Family history of BrS, SCD and/or recurrent syncope of unknown origin. Suspicious ECG (saddle-back ST-segment elevation
Environment	Patient in fasting, resting and drug-free state. Presence of physician with experience in intensive-care medicine. Advanced cardiopulmonary life-support facilities available including external defibrillator, intubation set and drugs (atropine, isoproterenole).Safe venous access. 12 lead standard ECG. Blood pressure monitoring.
Performance	Fractionated IV ajmaline application (10 mg every 2 min) up to target dose of 1 mg/kg. Continuous ECG documentation at paper speed of 10 mm/s (one strip at 50 mm/s every 2 min). Patient and ECG supervision until normalization of ECG
Interruption criteria	Reached target ajmaline dose. Occurrence of J-point elevation or ST-segment elevation ≥2 mm in at least one right precordial lead. Occurrence of frequentshort-coupled premature ventricular contractions, or complex ventricular arrhythmias, VT, sinus dysfunction/ arrest or AV-block (Type II or III) (**Gandjbakhch E, Fressart V, Duthoit G, Marquie´ C, Deharo JC, Pousset F et al.**

	Malignant response to ajmaline challenge in SCN5A mutation carriers: experience from a large familial study. Int J Cardiol 2014;172:256–8.). QRS widening (>130%) or interrupt the test when the QRS broadens to ≥150% in patients without baseline intraventricular conduction anomalies and when the QRS broadens to ≥125% in patients with baseline intraventricular conduction prolongation (**Batchvarov VN, Govindan M, Camm AJ, Behr ER. Significance of QRS prolongation during diagnostic ajmaline test in patients with suspected Brugada syndrome. Heart Rhythm 2009;6:625–31**.)
Treatment of life-threatening ventricular arrhythmias	I.Firth approach: oral quinidine or IV isoproterenol to treat electrical storms II.Treatment of Na^+channel blockers-induced cardiotoxicity with cardiac arrest, widening of QRS complex and hypotension refractory to intravenous fluid therapy: sodium bicarbonate as an antidote, the QRS duration narrows with possible normalization of the ECG III. Peripheral extracorporeal membrane oxygenation (RCMO) (**Chang CH, Chen HC, Caffrey JL, Hsu J, Lin JW, Lai MS et al. Survival analysis after extracorporeal membrane oxygenation in critically Ill adults: a Nation wide Cohort Study. Circulation 2016;133:2423–33**.)