Prognostic significance of a low T/R ratio in Brugada Syndrome

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Purpose The aim of the study was to look for predictive factors of AF recurrences during follow-up regarding parameters of PVI using 2nd generation cryoballoon therapy.
Methods It was an observational, retrospective and monocentric study. Between June 2012 and April 2017, all patients undergone PVI using 2nd generation cryoballoon therapy at Rouen University Hospital were included. The primary endpoint was AF recurrences during follow-up. The secondary endpoints were the parameters of the procedure (for each vein: disconnection time, balloon application number, minimal balloon temperature, and level of vein occlusion), the occurrence of a redo-procedure and adverse events.
Results In total, 320 patients were included. Among them, 233 patients were analysed (87 patients were excluded for lack of data). AF recurrence rate was 36.9% ($N=86$) for a mean follow-up of 25 ± 14 months. The mean delay of recurrences was 10 ± 12 months. No procedure parameters of PVI using 2nd generation cryoballoon therapy were predictive of AF recurrences. Only left atrial enlargement was predictive of AF recurrences (OR = 2.70; CI95% [1.54—4.72], $P=0.001$). The redo procedure rate was 17.9% ($N=42$). Among these 42 patients, 32 (75.6%) had at least one pulmonary vein reconnected, mainly the right inferior pulmonary vein. No parameters were predictive of pulmonary vein reconnection.
Conclusion In patients undergone PVI using 2nd generation cryoballoon, no procedure parameters seem to be predictive of AF recurrences during follow-up.
Disclosure of interest The authors declare that they have no competing interest.

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Introduction Abnormalities of myocardial repolarization may play a key role in the initiation of ventricular fibrillation (VF) in Brugada syndrome (BrS). Recent studies have shown that the height of the T-waves and the T/R ratio are inversely proportional to the sudden cardiac arrest (SCA) risk in early repolarization syndrome and hypertrophic cardiomyopathy.
Objective To study the prognostic value of a low T/R ratio in patients (pts) with a spontaneous Brugada type 1 pattern (SBT1).
Method In an international retrospective study, we reviewed 115 pts (mean age 45.1 ± 12.8 years, 91.3% males) with SBT1. Forty-five presented a documented VF and/or SCA at a mean age of 38.7 ± 11.5 years, 20 came from a review of published cases reports. Six ECG markers and the T/R ratio in leads V5 and II were studied. A low T/R ratio was defined by <0.2.
Results The T/R ratio was significantly lower in pts with VF/SCA (lead V5: 0.28 ± 0.15 vs. 0.36 ± 0.17, $P=0.008$; lead II: 0.47 ± 0.33 vs. 0.61 ± 0.51, $P=0.04$). A low T/R ratio in lead V5 or II was significantly associated with VF/SCA (respectively 44.4% vs. 14.3%, $P<0.001$ and 22.2% vs. 7.1%, $P=0.02$). In multivariate analysis by logistic regression, a low T/R ratio in lead V5 was an independent marker of a higher risk of VF/SCA with an OR of 4.11 ($P=0.02$). Brugada type 1 pattern in peripheral leads, wide QRS in lead V2 and early repolarization were other independent risk markers (see Fig. 1).
Conclusion A low T/R ratio in lead V5 is an independent marker for VF/SCA risk in patients with a SBT1.

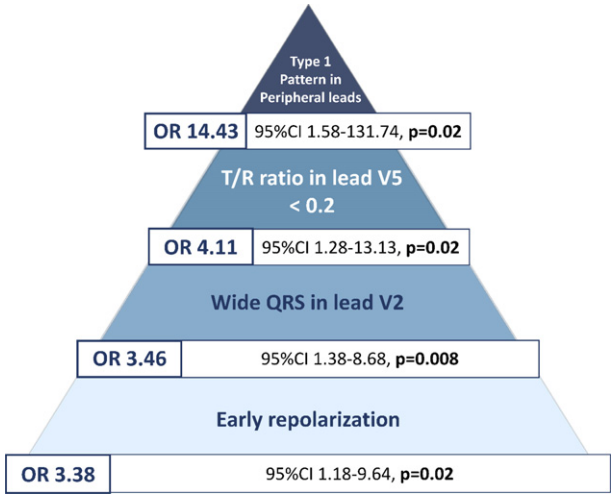

Fig. 1 Multivariate analysis.

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Consistent histologic findings in Brugada syndrome: The stubborn structural substrate

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Introduction Since the first description of Brugada syndrome (BrS), there has been controversy about his association with structural abnormalities of the myocardium.
Objective To identify an invariant histological substrate in patients with a definite BrS.
Method A BrT1 patient who had an autopsy after an episode of VF prompted us to perform a review of published case reports of autopsies and bi-ventricular histological samples to study patients with a spontaneous BrT1 who experienced VF and/or SCD and for whom there was no signs of an associated myocardial disease before the histological examinations.