Outcome of Insertable Cardiac Monitors in Symptomatic Patients with Brugada Syndrome at Low Risk of Sudden Cardiac Death

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Dear Editor,

We read with great interest the report of Sakhi et al. [1] on the outcome of symptomatic patients with Brugada syndrome (BrS) and implantation of an insertable loop recorder (ILR). In their series, 7 patients had non-inducibility of ventricular arrhythmia (VA) in electrophysiological study (EPS). Patients with BrS, low-risk stratification by clinical scoring and non-inducibility in EPS are not free from developing worrisome symptoms or clinical arrhythmia during their evolution. Hence, it is our policy to implant ILR regardless of previous symptoms, to help further clarify the course of action during follow-up.

In our experience in a single, tertiary center, 9 patients meeting those criteria were implanted an ILR between 2014 and 2019 (cohort characteristics in Table 1). Only 2 patients presented with previous syncope; the remaining were submitted after the finding of a pathologic ECG or for familiar risk stratification. No patient suffered previous sudden cardiac death or had documented VA. An EPS confirming non-inducibility of VA was practiced according to previous literature [2, 3], even though in many cases an effective refractory period under 200 ms was not assessed. Their risk profile according to Sieira's model [4] was low-to-medium, ranging from 0 to 3 points, with an

estimated 5-year event rate of 1.6–16.6%. ILR make and model were 7 Medtronic (1 DX, 6 Linq) and 2 St. Jude (Confirm Rx), 1 of them replaced after battery depletion; every device was programmed for automatic detection of bradycardia, tachycardia, pause, and atrial fibrillation (excepting 1 Reveal DX). Patients were followed up for a median 29 months (interquartile range 8–50), with an accumulated 21.8 patient-years. No clinical events (sudden death or syncope) or ventricular arrhythmia have been registered. In a single case a female patient, submitted for pathologic ECG, developed asymptomatic sinus node dysfunction.

In comparison with the results reported by Sakhi et al. [1], fewer patients in our cohort presented with symptoms. We believe that this might be the cause for a lower rate of arrhythmic disturbances during follow-up in our cohort; therefore, ILR implantation proves more helpful to guide the clinical management when the patient has previously been symptomatic. Likewise, given that their cohort has a time frame similar to ours, and assuming a proportional aggregated follow-up, the event rate for sudden cardiac death or sustained VA can be estimated as under 2% per patient and year. This is in agreement with previously reported evidence [4].

Table 1. Population characteristics

	Total (<i>n</i> = 9)
Age, years	41.2 (38.2–44.8)
Gender – male, <i>n</i> (%)	8 (89)
Family history of SCD, <i>n</i> (%)	4 (44)
Symptoms/referral reason, <i>n</i> (%)	
ECG alteration	6 (67)
Syncope	2 (22)
Family history	1 (11)
Palpitations	0
ECG, <i>n</i> (%)	
Spontaneous type 1 pattern, <i>n</i> (%)	3 (33)
Induced (fever/drug) type 1, <i>n</i> (%)	6 (67)
Atrial fibrillation history, <i>n</i> (%)	0
QRS duration in lead V2, ms	114 (106–124)
Risk stratification (Sieira model), <i>n</i> (%)	
3 points	1 (11)
2 points	3 (33)
1 point	3 (33)
0 points	2 (22)
Implantable loop recorder, <i>n</i> (%)	
Medtronic DX	1 (11)
Medtronic Linq	6 (67)
St. Jude Medical Confirm	2 (22)
Follow-up, days	688 (281–1,523)

Data are presented as *n* (%) or median (interquartile range). The Sieira model is a risk stratification tool ranging from 0 to 10 points, scoring: spontaneous type 1 pattern (1 point), family history of SCD (1 point), ventricular arrhythmia inducibility in EPS (2 points), syncope (2 points), sinus node dysfunction (3 points), aborted SCD (4 points). SCD, sudden cardiac death.

We believe that our data, merged to the experience reported by Sakhi et al. [1], support the low risk profile in these patients, discouraging the prophylactic implantation of a defibrillator. The insertion of an ILR could shed light on heart rhythm troubles if the patient has previously reported symptoms. However, the question remains on what to do with these mostly young patients once the ILR battery is depleted; no evidence exists on a very long-term follow-up with ILR in low-risk Brugada patients.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contributions

All authors participated in the clinical assessment and/or clinical follow-up of the patients. J.P.-R. and A.M.-v.R. performed the follow-up and analysis of the data, and all authors approved the final draft.

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