

Electrophysiologic Studies Using an Aggressive Protocol of Programmed Ventricular Stimulation in Patients with Brugada Syndrome

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Introduction. The role of electrophysiologic studies (EPS) in the arrhythmic risk assessment of patients (pts) with Brugada syndrome is debated. The predictive value of EPS depends on the aggressiveness of the protocol of programmed ventricular stimulation (PVS) protocol.

Methods. During a 10-year period, we studied 68 patients (88% males), aged 20-85 (mean 43.8) years old. As in most EP laboratories, our PVS protocol included single, double and triple ventricular extrastimulation (ES) delivered from 2 right ventricular sites (apex and outflow tract) at 2 basic cycle lengths (600 and 400msec). However, it differed by 1) the use of stimulus current at 5-fold diastolic threshold (DT) (but always $\leq 3\text{mA}$) and 2) repetition of ES at the shortest coupling intervals (10 times for double and 5 times for triple ES, respectively).

Results: All pts had a type 1 Brugada-ECG observed spontaneously (n=19) or following IV administration of flecainide (n=49). 6 pts had a history of aborted cardiac arrest, 25 pts had syncope, and 37 pts were asymptomatic. Sustained polymorphic VT/VF was induced in 47 (69%) pts. Inducibility rates were 100%, 75% and 62% in pts who presented with aborted cardiac arrest, syncope, or were asymptomatic, respectively (p<Z).

EPS-guided quinidine therapy was performed in 43/47 pts with inducible VF. In 38 (88%) of 43 pts, quinidine therapy was effective in preventing VF re-induction. Quinidine therapy could be continued during long-term in 26 EPS drug-responders. An ICD was implanted in 16 pts. During a follow-up of 3 to 128 (mean 52) months, all pts but 1 who died from cancer are alive. None of the pts had appropriate ICD discharges. No arrhythmic event occurred in any other pts.

Conclusions. VF inducibility is very high in pts with Brugada syndrome during EPS using an aggressive PVS protocol. Although the sensitivity of this protocol is excellent, it may lead to false positive results leading to unjustified treatment in pts without prior cardiac arrest. Quinidine is very effective in preventing VF re-induction at EPS. No arrhythmic event occurred on this therapy,