# An "Aggressive" Protocol of Programmed Ventricular Stimulation is Useful to Select Post-Myocardial Infarction Patients with a Low Ejection Fraction who May Not Require Implantation of an Automatic Defibrillator

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**Objectives:** To assess if non-inducibility with "aggressive" protocol of programmed ventricular stimulation (PVS) identifies post-infarction patients with low ejection fraction (EF≤30%) who may safely be treated without implantable defibrillator (ICD).

**Background**: The predictive value of electrophysiologic studies depends on the aggressiveness of the PVS protocol.

**Methods:** We studied 154 patients during a 9-year period. Our aggressive PVS protocol included: 1) stimulus current five-fold the diastolic threshold (≤3mA) and 2) repetition of double and triple extrastimulation at the shortest coupling intervals that capture the ventricle.

**Results:** Sustained ventricular tachyarrhythmias (VTA's) were induced in 116 (75.4%) of patients and 112 (97%) of them received an ICD (EPS+/ICD+ group). Of the 38 non-inducible patients, 34 (89.5%) did not receive an ICD (EPS-/ICD- group). In comparison to EPS+/ICD+ group, EPS-/ICD- group patients were older (69 ± 10 vs 65 ± 10 years, P<0.05), had a lower EF (23 ± 5% vs 25 ± 5%, P<0.05) and a higher prevalence of left bundle branch block (45.5% vs 20.2%, P<0.005). Follow-up was longer for EPS+/ICD+ group patients (40 ± 26 months) than for EPS-/ICD- group patients (27 ± 22 months) (P=0.011). Twelve (10.7%) EPS+/ICD+ group patients and 5 (14.7%) EPS-/ICD- group patients died during follow-up; p=0.525). Kaplan-Meier survival curves did not show a significant difference between the two groups (p=0.18).

**Conclusions**: The mortality rate in patients without inducible VTA's using an aggressive PVS protocol and who did not undergo subsequent ICD implantation is not different from that of patients with inducible arrhythmias who received an ICD. Using this protocol, as many as one-fourth of primary prevention ICD implants could be spared without compromising patient prognosis.