Role of Defibrillation Threshold Testing Prior to ICD Implantation – from the Israeli ICD/CRT-D Registry

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Background:

Defibrillation threshold (DFT) testing during placement of implantable cardioverter defibrillators (ICD) has been considered mandatory until recently. New data, suggest a more limited role for DFT testing.

Aim:

To evaluate the role of DFT testing and effect on long term outcome among patients who received an ICD in the Israeli Registry.

Methods:

We studied 2975 patients from the Israeli ICD/CRT-D registry between July 2010 and July 2012 which included 1217 patients for whom we had a complete follow up of one year. We compared 1- year outcomes between patients who underwent ventricular fibrillation (VF) induction and ICD testing during the ICD implantation to those who did not.

Results:

Of 2975 patients, 586 (19.7%) patients (age 61.9±14.2, 85.8% men) underwent VF induction during ICD implantation while 2385 (80.3%) patients (age 64.9±12.5, 81.5% men) did not. Patients who underwent ICD testing had more prior arrhythmias (49.8% vs. 28.7%, p value <0.001), suffered less from heart failure (69.4% *vs.*81.5% p value<0.001) and received more often ICD for secondary prevention (43.9% vs. 21.6%, p value=0.2). ICD testing did not influence the delivery of appropriate (8.6% VS 6.6%) or inappropriate (3.4% VS 2.1%, p value=0.2) shocks, 1-year mortality (4.8% vs. 4.9%, p value=0.9, see figure) or secondary outcomes: hospitalization for heart failure or the combination of heart failure and death or combination of ventricular arrhythmias and death (13% vs. 14.2% HR= 0.8; 95% CI 0.3-2, p value=0.6).

Conclusions:

We were not able to show any benefit from VF induction and ICD testing during ICD implantation regarding mortality rate or any of the secondary long term outcomes, nor were we able to show any deleterious effect. Our study adds support for eliminating routine testing during the implantation procedure.

CLINICAL OUTCOME— DEATH
BY THRESHOLD TESTING

P(log_rank)= 0.55