

Long Term Follow-up of Patient with Implantable Cardioverter Defibrillator (ICD) Health Policy Implications of Patient Survival versus ICD Longevity

Nahum Freedberg, Liora Livshitz, Dante Antonelli, Alexander Feldman, Yoav Turgeman
Cardiology, HaEmek Medical Center, Israel

ICD implantation is safe and effective therapy. However, the economic burden of this therapeutic approach is considerable due to the high upfront cost as well as need for periodic device replacement for the duration of the patient's life. Patient as well as device selection may have profound health economic implications.

Aim: To analyze outcome of patients who underwent ICD implantation in our hospital.

Methods: We reviewed clinical data of all the patients who underwent ICD implantation in our hospital from 1996 until 1999. Survival analysis was performed by the Kaplan-Meier method. Groups were compared by log rank method. **Results:** In sixteen years, 261 patients underwent ICD implantation. Mean age was 63.8 ± 11.9 years, 236 (90%) were male. Primary prevention Indication 40%. Underlying cardiac disease: Coronary artery disease 85%, dilated cardiomyopathy 12% and other diseases 3%. In 18 years of follow-up, 48.3% of the patients had died. The median survival was 8.27 years. Median survival was lower in patients older than 65 years, 5.69 versus 12.9 years ($p < 0.001$). Survival was not predicted by gender, heart disease, primary prevention Indication or biventricular pacing. Ninety-eight patients (37.5%) had device replacement, 36 of them died later on. Ninety patients (35%) died before device replacement was needed. Seventy-eight patient are alive with their first device. The median device longevity at replacement was 4.63 years. There was no difference between ICD and CRT-D longevity. There was however a significant difference in median devices longevity between manufactures from 3.65 up to 5.87 years ($p = 0.0013$). **Conclusion:** Patient survival after ICD implantation is variable. Many patients will need device replacement, as there is a significant difference in device longevity between manufactures; this parameter will have a major impact on health care spending on ICD therapy and should be factored in the device selection process.