**“Real-Life” Span of Implantable Cardioverter Defibrillators and Factors Affecting its Longevity**

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Background-
Implantable cardioverter defibrillator (ICD) is a life-saving therapy for patients at risk for ventricular arrhythmias. Although cost-effective, these analyses are based upon the manufacturer’s predicted device’s longevity only. We aimed at assessing the "real-life-span" of implanted ICDs.

Methods-
We identified all ICD implantations from 1996 to 2009 at a single tertiary care medical center. Dates of implantation, generator change or death were recorder to evaluate the actual longevity of each device. From each patient’s medical records relevant data were extracted. These included demographics, co-morbidities, implantation/ generator change indications, device type, therapies given by the device and percentage of pacing. Death dates were retrieved from the national population registry. Devices that were not followed up in our clinic were excluded from analysis. Kaplan-Meier analysis was used to assess device longevity. Devices still in service were censored, but deaths were not.

Results-
Overall827 devices were implanted and followed up in 601 subjects: 267 single-chamber, 381 dual-chamber and 179 bi-ventricular.Mean age (+SD) of the patients at implant was 64 + 13 and 14% were women. Among the 366 in whom the device terminated its service;39% reached elective replacement, in 37% the patient died, 11% were upgraded and the rest included recalls and infections. Median survival was 4.4 years for all devices and 4.6 after excluding bi-ventricular devices. Censoring deaths increased both these rates to 5.0, 5.1years, respectively. Factors significantly affecting longevity were implantation indication (primary vs. secondary), device type, percentage of pacing and manufacturer.

Conclusions-
There are significant factors affecting device longevity such as patients’ survival, device type, pacing percentages and manufacturer. These should be included in any future cost-benefit analysis of ICD therapy.