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Implantation of ICD and CRT-D in the elderly population: will it be a limiting factor?

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Introduction: Implantable cardioverter defibrillator (ICD) and cardiac resynchronization (CRT-D) implantation in elderly patients is effective in preventing sudden death, although limited by the natural shorter life expectancy. The different device brands present very variable survival estimates and it has been discussed the availability of less expensive, less longevity generators for the elderly population.
Purpose: To determine if the expected survival rate in the elderly patient population (≥75 years) should influence the selection of the desired longevity of the devices.

Methods: A retrospective single-center study of consecutive patients who underwent implantation of ICD or CRT-D after November 1995. The mean survival of patients undergoing 1st implant or generator replacement at an advanced age (≥75 years) was evaluated and compared to the effective longevity of the generators. Cumulative survival analyzes using the Kaplan Meier method were used.
Results: A total of 1312 cardiac devices were implanted, of which 163 generators in elderly patients (53% CDI and 47% CRT-D). Of these, 77% corresponded to the 1st implant.
The median survival after implantation of the elderly patients was 6.8 years, not differing according to the type of device (Log-rank P = NS). The median longevity of CDI generators was 6.9 years, in line with the expected survival of elderly patients. Conversely, the median CRT-D longevity was 5.8 years, lower than the average survival of the elderly. For this reason, 21% of these CRT-D carriers were subsequently subjected to generator replacement, due to battery exhaustion.
Conclusion: The effective longevity of ICDs is in agreement with an expected survival of elderly patients, for which it will not make sense to provide generators of shortened longevity for this population. The effective longevity of the CRTs is lower than the survival expectancy of the treatments, so that, paradoxically, generators with increased longevity should be favored.