Prognosis Determinants after Cardioverter-Defibrillators Implantation in Brazil

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The study by Silva et al.[1] presented the results of a series of cases from a single-center registry of implantable cardiac devices, including 28 implantations of isolated cardioverter defibrillators (ICD) and 14 associated to resynchronization (CRT-ICD), in addition to procedures for generator replacement and handling of electrode cable.[1] ICD and CRT-ICD implantations were considered the strongest predictors of re-admission into the hospital during a six-month period after the surgical procedure, although it is not clear whether there was adjustment by functional class or left ventricular ejection fraction.[1]

We have recently published the results of short, medium, and long term follow-ups of all ICD and CRT-ICD implantations funded by The Brazilian Unified Healthcare System (SUS) in all of Brazil, between 2001 and 2007, including 3,295 ICD implantations in 85 hospitals and 681 CRT-ICD implantations in 50 hospitals.[2]

In our study, when compared to the ICD implantation group, patients who underwent CRT-ICD implantation had a worse mortality relative to the procedure and also a worse survival in the medium and long run.[2] However, in the study by Silva et al.[1], there apparently was no worse short-term prognosis of patients who underwent CRT-ICD with relation to those who underwent ICD implantation, at least in regards to re-admission.[1] In relation to survival time, it would be interesting to consider stratification by device type, since the presented 6-month survival[1] seemed low in relation to our finding,[2] especially considering most implantations were for pacemakers.[1] The percentage of double-chamber ICD would also be interesting information, considering some studies point to an association with poorer results.[2]

We have observed in the national multi-center study that the type of technique used for CRT-ICD implantation affected short-term mortality, and there was an important decrease in survival, approximately four years after the initial implantation in this group, possibly related to complications associated to the need for intervention.[2] It would be interesting to know the magnitude of re-interventions in the short period of follow-up of the single-center registry and the possible impacts of implantation techniques in the outcomes.

The greater representativeness of Chagas heart disease, in the group with complications in the study by Silva et al.[1], may be related to the type of implanted device. In our study, Chagas heart disease patients did not have a worse prognosis when compared to those with ischemic heart disease,[2] similarly to another study recently published in *Arquivos Brasileiros de Cardiologia*.[3]

Keywords

Cardiac Resynchronization; Therapy Devices; Defibrillators, Implantable; Chagas Cardiomyopathy; Survival Analysis; Brazil.

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Reply

The care with patients with implantable electronic cardiac devices (IECD) demands more and more the attention to the different clinical presentations of these patients. Such differences are becoming more prominent due to two main factors: an increase in the population longevity, which has increased comorbidities, and the increasing frequency of patients with cardiomyopathy and ventricular dysfunction.

We believe that the main message of this publication is to prove, through data derived from real clinical practice, that older patients, just as individuals with severe left ventricular dysfunction, are more prone to clinical events, related or not to cardiac disease, that require readmission to the hospital and that, therefore, must be observed more closely in order to be avoided.

Undoubtedly, ICD and CRT incorporation to the list of artificial cardiac stimulation procedures has brought a considerable contingent of patients with severe heart failure, which did not use to be as frequent when the only implanted devices were pacemakers. It is also not likely that this is the reason for the association mentioned in the commentary. With regards specifically to the relation between Chagas disease and mortality, our study was not designed with this objective nor would it have the sample power for that.

To make any comparison between the results of the presently published study and those of the publication of the comment's authors does not seem possible. While our study is a prospective analysis of primary data collected from a population of patients with all types of implantable devices, treated in one single, highly specialized, center, actively monitored by the researchers, the study by Migowski et al. is a retrospective analysis of secondary data obtained from administrative bases of SUS, from a population with cardio-defibrillators implanted at various centers with a varied level of specialization. Furthermore, the follow-up information is clearly incomplete, especially considering the authors of the study themselves have informed they censored all deaths from causes not related to heart disease or treatment.

We believe an attempt to make this kind of comparison would be like trying to compare the wine from a single producer to water from a container whose samples come from different sources.

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