



Does it make sense evaluating cardiac resynchronization therapy in the elderly regardless of the type of the device?

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We read the research article entitled *Is cardiac resynchronization therapy feasible, safe and beneficial in the very elderly?* with great interest.^[1] The authors emphasized that despite the average age of heart failure was 77 years in the general population of UK,^[2] patients receiving cardiac resynchronization therapy [with pacemaker alone (CRT-P) or with additional defibrillator capabilities (CRT-D)] were on younger ages at 72 and 67 years respectively.^[3] In the lights of this data, we agree with the authors that CRT seems to be underutilized in the elderly patients with heart failure. Given the well-proven benefits of CRT, it is wise to conduct such a study in order to evaluate the safety and benefits of CRT in the elderly, among the concerns of co-morbidities and potential complications.

In this study, patients were grouped according to the age at implantation; < 80 years and ≥ 80 years. Comparisons were performed between these two groups regarding the baseline demographics, complication rates, improvement in symptoms and all cause mortality at one year. Complication rates were found to be similar in both groups except for pneumothorax which was observed significantly higher in the group aged ≥ 80 years. Improvement in symptoms, described as ≥ 1 reduction in New York Heart Association (NYHA) class at follow up appointment, were not differed between groups. And, all cause mortality at one year was significantly higher in the group aged ≥ 80 years, unsurprisingly.

Based on the above findings, CRT was suggested to be feasible and safe in the elderly and to be considered if indicated irrespective of age. However, a concealed data exists in this study waiting for to be subgrouped and reanalyzed in order to get more accurate results. That's the type of the CRT. Although it was mentioned in the baseline demographics that CRT-D was found to be implanted mostly in the group aged < 80 years and CRT-P was found to be

implanted mostly in the group aged ≥ 80 years, these data were not taken into account by the authors while making comparisons of the age-related groups.

Regarding the complications and outcomes, CRT-D and CRT-P may differ in many aspects. In COMPANION trial,^[4] although it was not designed to compare CRT-D with CRT-P, CRT-D was found to be associated with a significant decrease in total mortality in one year, compared with optimal medical therapy ($P = 0.003$). Whereas, relative risk reduction in the CRT-P group was only marginally significant ($P = 0.059$). Time to sudden death was only prolonged by CRT-D, but no significant difference was found between the CRT-D and CRT-P groups. Despite the insufficient evidence, owing to the potential small survival benefit of CRT-D over CRT-P, current European Society of Cardiology Guidelines are in favour of a superiority of CRT-D in terms of mortality and sudden death.^[5]

Implantable cardioverter defibrillator (ICD) related complications, particularly lead failure and inappropriate shocks may be seen in the patients receiving CRT-D and thereby overall device-related complication rates are suggested to be higher in the CRT-D patients compared with CRT-P patients.^[5] In the study of Schuchert, *et al.*^[6] incidence of loss of capture, infectious complications and 1-year clinical outcomes were examined in the first year after implantation of CRT-D and CRT-P. The incidences of loss of capture at any leads were found to be nearly three-fold greater among CRT-D patients than among CRT-P patients. Device-related infections and clinical outcomes were similar in both groups.

In conclusion, owing to the crucial data on this issue and regarding the above mentioned potential differences of the CRT types, it would be better to compare CRT-D and CRT-P subgroups of the patients aged < and ≥ 80 years in order to obtain more accurate results.

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Authors' reply

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We thank the authors of this letter for their thoughtful comments. We agree that it seems likely that CRT is underutilized in the elderly. We do not believe however that our study can establish whether CRT-D (CRT with defibrillator) provides additional benefit over CRT-P (CRT with pace-

maker alone) in the elderly. Such a study is, in our opinion, fully warranted but needs to be addressed in prospective and randomized fashion. Our study, as we acknowledge, is not randomized and is retrospective and thereby subject to potential bias.