Reviewer's report

Title: Risk of subsequent ventricular arrhythmia is higher in primary prevention patients with implantable cardioverter defibrillator than in secondary prevention patients

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Reviewer: Leif-Hendrik Boldt

Reviewer's report:

You and colleagues report a retrospective analysis on a cohort of 835 patients receiving an ICD with homemonitoring capability. In a post-hoc analysis, they analyzed the rate of appropriate ICD therapies for ventricular arrhythmias and all-cause mortality dividing the whole group in those who received the ICD for secondary prevention and those who received it for primary prevention after these experienced a first appropriate therapy.

There are several relevant methodological limitations of this analysis:

1. In the secondary prevention group, time starts running immediately after implantation, while time for primary prevention patients only starts running after their first episode treated by the ICD.

2. Regarding baseline characteristic, both groups of patients (secondary vs. primary prevention) differ significantly in terms of age, sex, left ventricular ejection fraction, NYHA class as well as medication. The authors account for that by applying propensity score matching. Since only baseline characteristics were available, they had to rely on those, although primary prevention patients experienced their "qualifying" VA event long time after that, and characteristics may have changed in between.

3. Device programming is a crucial part in ICD therapy affecting not only rates of adequate ICD therapies, but also mortality. ICD programming as shortly described by the authors in the methods section does not seem to match current recommendations (especially in primary prevention); MADIT-RIT. Otherwise, the authors should describe programming in more detail.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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I am able to assess the statistics

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Needs some language corrections before being published

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