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Comparative effectiveness of implantable cardioverter defibrillators for primary prevention in women – Authors' reply

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Mareev and colleagues raise several important issues related to comparing findings from randomized clinical trials (RCTs) to observations from clinical practice cohorts as it relates to our recent manuscript.¹ The effect size associated with ICD therapy in our population was greater than that seen in RCTs, but this is not surprising. Indeed, our findings are consistent with other effect sizes associated with primary prevention ICDs in clinical practice cohorts.² There are reasons why effect sizes in RCTs may differ from those in less selected cohorts. In particular, RCT patients are known to be healthier and receive better overall care than patients in clinical practice, which can contribute to lower event rates and, thus, what might appear as less benefit from interventions. Furthermore, the large cohort and the longer follow-up period in our analysis provide greater power to detect differences. Another potential contributing factor is the selection bias related to offering an ICD to clinical practice patients who are most likely to benefit.

Mortality rates in our cohort were high, but in a previous analysis, when survival of clinical practice patients was compared with propensity score-matched patients from RCTs of primary prevention ICDs, it was not different even in patients > 65 years old.³ In our study referenced by Mareev, we report a relative risk reduction associated with an ICD similar to that observed in SCD-HeFT (HR 0.78 vs 0.77).⁴ However, when absolute risk is increased as in an older, sicker population like ours, absolute risk reductions are expected to be greater despite similar relative risk reductions.

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Disclosures

Ms Hellkamp and Drs Al-Khatib, Hernandez, Peterson, Sanders, Schulte, Yancy, and Zeitler: None relevant. Dr. Fonarow: consulting – Medtronic

As was pointed out by Mareev et al and acknowledged in our manuscript, no statistical methods can adjust for all potential bias in an observational study. However, when questions about the effectiveness of interventions remain in important subgroups such as women, observational data may be informative.

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