Response to Letter Regarding, “PR Interval Identifies Clinical Response in Patients With Non-Left Bundle Branch Block: A Multicenter Automatic Defibrillator Implantation Trial-Cardiac Resynchronization Therapy Sub-Study” by Kutyifa et al

We thank Jackson et al for their interest in our study and suggesting that the benefit derived from cardiac resynchronization therapy with defibrillator (CRT-D) in non-left bundle branch block (non-LBBB) patients with prolonged PR interval may be because of the presence of masked LBBB. In our study, left ventricular volume indices were similar in both patient subgroups. Electrophysiological mapping, as the correspondents suggest, may be a useful method to identify masked LBBB; however, we did not have such data available in Multicenter Automatic Defibrillator Implantation Trial-Cardiac Resynchronization Therapy.

We had a potential, biologically plausible explanation of why CRT-D may work in non-LBBB patients with a prolonged PR interval in our study. We hypothesized that patients with prolonged PR interval benefit from atrioventricular-resynchronization and concomitant biventricular pacing avoiding right ventricular apical pacing that has been shown deleterious in several prior studies. We do, however, agree with the correspondents that we cannot surely exclude the possibility of a masked LBBB. But even though, a proximal combination of LBBB and right bundle branch block would most likely compromise 1:1 conduction, a distal right bundle branch block added to an LBBB would not necessarily relate to PR prolongation. Considering this, there does not seem to be a compelling link between prolonged PR interval and masked LBBB.

We agree that we did not demonstrate and do not know the exact mechanism of action in our cohort. Not knowing, however, does not take away the significant clinical effect of our finding that—for the first time—we were able to identify a patient subgroup within non-LBBB deriving clinical benefit from implantation of a CRT-D with 73% reduction in heart failure or death and 81% decrease in all-cause mortality, compared with an International Classification of Diseases-only. It seems that this simple ECG parameter, prolonged PR interval is helpful to identify patients with non-LBBB who benefit from implantation of CRT-D whether it is a surrogate marker for masked LBBB, for altered transmitial filling, or for something else.

Noting this limitation, we think that further research is warranted to identify the mechanism and prospectively assess the benefit of CRT-D in patients with mild heart failure, systolic dysfunction, non-LBBB, and a prolonged PR interval and evaluate whether our findings are applicable to other patient cohorts.

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Disclosures

None.

References


*Cds Kutyifa and Stockburger contributed equally to this work.

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