Response to Letter from Barra et al Based on “Association of Early Repolarization and Sudden Cardiac Death During an Acute Coronary Event” by Tikkanen et al

We thank Dr Barra and his colleagues for their interest and comments about our study, which presented an association between early repolarization pattern (ERP) and sudden cardiac death during an acute coronary event. We concur with the authors on several topics with minor viewpoint divergences.

First, the authors of the letter point out the differences between the studied groups. This is obviously a regrettable downside of the nature of our observational cross-sectional study. We did recognize this limitation, and therefore performed additional analyses with subjects without documented coronary artery disease or prior coronary event. Within these subjects, the results remained essentially the same. However, as the authors of the letter state, it is true that a reliable comparison would require less preventive treatment in the control group.

In their letter, Barra and colleagues next discuss the possibility of peri-infarction block and remote myocardial scarring underlying the ERP. As we discussed in the referred publication and in another letter to editor, several underlying mechanisms are very likely to be present in early repolarization ECG pattern, especially within older populations as the ones studied. These underlying cardiac conditions unfortunately cannot be ruled out from planar ECG, which is an obvious limitation of observational ECG studies. Overlapping of fragmented QRS and ERP is possible in many cases of terminal QRS notation as the variant of ERP. However, it should be noted that majority of ERPs in this study were slurring of the terminal QRS. In fact, the presence of fragmented QRS was also studied here, but it was not related to the presence of ERP.

As the authors of the letter discuss, our study did not include ERP in anterior precordial leads. This is a natural consequence to several previous studies including our previous publication, which excluded anterior manifestations of early repolarization and from which the primary hypothesis aroused. In that study, inferolateral ERP (ie, J waves) increased fatal arrhythmias at relatively old age, in which age group the most common trigger of sudden cardiac death is an acute coronary event. Thus, we wanted to investigate whether the presence of J waves in inferolateral leads would associate with sudden cardiac death in patients with acute coronary event. This speculation was also presented by others elsewhere. These results also concur with other studies, which have demonstrated a higher risk of ventricular fibrillation at the time of acute myocardial infarction in patients with J waves on premorbid ECG.

Barra and colleagues also point out another interesting issue of the malignancy of J waves in the absence, but not presence, of ST-segment elevation. There are growing data available that it is the J waves with no ST-segment elevation that are associated with arrhythmias and increased mortality rates. A speculation of a very steep nature of our study, which presented an association between early repolarization and increased mortality rates. There are growing data available that it is the J waves with no ST-segment elevation that are associated with arrhythmias and increased mortality rates. We agree with the authors that further studies are required before any aggressive preventive therapy strategies can be considered for asymptomatic subjects with J waves. As an observational and cross-sectional study with its limitations, our study does not apply to current clinical practice, but it does support the possible association of J waves with arrhythmias during ischemic events and supports the need for further investigation.

Disclosures

None.

Jani T. Tikkanen, BM
Juhani M. Junttila, MD
Viktor Wichmann, BM
Meri Rainio, MD
Eeva Hookana, MSc
Olli-Pekka Lappi, BM
Heikki V. Huikuri, MD
Department of Internal Medicine
Institute of Clinical Medicine
University of Oulu
Oulu, Finland

Marja-Leena Kortelainen, MD
Institute of Diagnostics, Department of Forensic Medicine
University of Oulu
Oulu, Finland

Olli Anttonen, MD
Department of Internal Medicine
Päijät-Häme Central Hospital
Lahti, Finland

References


Response to Letter from Barra et al Based on "Association of Early Repolarization and Sudden Cardiac Death During an Acute Coronary Event" by Tikkanen et al

Circ Arrhythm Electrophysiol. 2012;5:e117-e118
doi: 10.1161/CIRCEP.112.978585

Circulation: Arrhythmia and Electrophysiology is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2012 American Heart Association, Inc. All rights reserved.
Print ISSN: 1941-3149. Online ISSN: 1941-3084

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circep.ahajournals.org/content/5/6/e117

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation: Arrhythmia and Electrophysiology can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation: Arrhythmia and Electrophysiology is online at:
http://circep.ahajournals.org//subscriptions/