Response to Letter Regarding Article, “Prevalence and Prognostic Significance of Abnormal P Terminal Force in Lead V1 of the Electrocardiogram in the General Population”

Chhabra et al1 bring into question important remarks regarding our results on the association of P terminal force (PTF) and mortality.2 First, in their letter, they recall that PTF is strongly affected by the placement of lead V1. During the data collection of our study, the electrocardiograms were recorded by specifically trained personnel and a strictly standardized protocol was used making misplacements of the leads unlikely.

They also bring up that chronic lung diseases, especially the ones causing emphysema, influence the depolarization vectors of the atria, thus affecting the PTF.3 They also point out that totally negative P waves were common among emphysematous patients in their study and note that emphysema/chronic lung disease was not accounted in our study, which may have played a confounding role in the relationship between the PTF and mortality. We completely agree with these important points, but we comment that PTF was measured also from totally negative P waves in lead V1 in our study. To review their concerns, we decided to rerun the Cox proportional hazards model assessing the relationship of PTF and mortality among nonsmokers (n=7005) because smoking is the most common cause of chronic lung disease and emphysema in the general population. The univariate model yielded slightly higher hazard ratios as the ones in the whole population; the hazard ratios for mortality being 1.48 (95% confidence interval, 1.29–1.70; P<0.001), 2.15 (95% confidence interval, 1.75–2.66; P<0.001), and 3.23 (95% confidence interval, 2.58–4.06; P<0.001) for PTF groups 0.04 to 0.05 mm·s (n=360), 0.05 to 0.06 mm·s (n=120), and >0.06 mm·s (n=86), respectively. However, the hazard ratio in the multivariate model for subjects presenting PTF >0.06 was slightly smaller (1.52; 95% confidence interval, 1.20–1.91; P<0.001).

Generally, the results remained largely the same, suggesting that subjects in whom PTF was caused by rotation of the heart as a result of lung disease rather than left atrial abnormality had only a minor impact on our results.

Sources of Funding
This work was supported by a special federal grant for Institute of Clinical Medicine, Medical Research Center Oulu, University Hospital and University of Oulu, and the Finnish Foundation for Cardiovascular Research, Helsinki, Finland (Dr Aro).

Disclosures
None.

References

(Circ Arrhythm Electrophysiol. 2015;8:244. DOI: 10.1161/CIRCEP.115.002696.)
© 2015 American Heart Association, Inc.
Circ Arrhythm Electrophysiol is available at http://circep.ahajournals.org
DOI: 10.1161/CIRCEP.115.002696
Response to Letter Regarding Article, "Prevalence and Prognostic Significance of Abnormal P Terminal Force in Lead V1 of the Electrocardiogram in the General Population"

Antti Eranti, Aapo L. Aro, Tuomas Kerola, Olli Anttonen, Harri A. Rissanen, Jani T. Tikkanen, M. Juhani Junttila, Tuomas V. Kenttä, Paul Knekt and Heikki V. Huikuri

Circ Arrhythm Electrophysiol. 2015;8:244
doi: 10.1161/CIRCEP.115.002696

Circulation: Arrhythmia and Electrophysiology is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2015 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/8/1/244

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/