

Why has the incidence of heart failure decreased by half in Türkiye?—Authors' reply

Ahmet Çelik,^{a,*} İnci Tuğçe Çöllüoğlu,^b Anıl Şahin,^c Dilek Ural,^d Mehmet Birhan Yılmaz,^e and Naim Ataf^f

^aDepartment of Cardiology, Mersin University, Faculty of Medicine, Mersin, Türkiye

^bDepartment of Cardiology, Karabük University, Faculty of Medicine, Karabük, Türkiye

^cDepartment of Cardiology, Sivas Cumhuriyet University, Faculty of Medicine, Sivas, Türkiye

^dDepartment of Cardiology, Koç University, Faculty of Medicine, Istanbul, Türkiye

^eDepartment of Cardiology, Dokuz Eylül University, Faculty of Medicine, Izmir, Türkiye

^fGeneral Directorate of Information Systems, Ministry of Health, Ankara, Türkiye

We appreciate the interest of Koray Tascilar in our recent study on heart failure trends in Türkiye.¹ And welcome the opportunity to address the point raised about potential misclassification of incident heart failure.

The incidence data used for this study were obtained from patients who were newly diagnosed with heart failure, specifically from the year 2017 onwards, which is certainly new data. The incidence analyses did not incorporate data from 2016, which represents the initiation point of nation-wide compulsory recording in Türkiye, and hence consisted of aggregated data from previous years. We think that in the nationwide electronic health-care database, a cohort of patients may have received their initial diagnosis of heart failure for the first time with the use of the ICD-10 codes during the year 2017. It may explain the overestimation of heart failure incidence rates within the data pool for the respective year. Therefore, we think that the incidence rates of heart failure in Türkiye for the years 2020–2022 were more representative of reality compared to those for the years 2017–2019.

On the other hand we agree that the incidence rate is influenced by the duration of the look-back period. As pointed out by Rosenlund et al., the incidence rates become more realistic when applying a 4-year look-back period.² In the literature, although there has not been a certain definition of the optimal look-back period for each chronic disease, like heart failure,² American reports of heart failure incidence rates, mainly based on Medicare claims, have commonly employed a look-back period of 1 year or less.³ In this registry, the look-back period was 1 year; therefore, the first year of the incidence rate may have been overestimated, and incidence rates sharply may have been reduced in the following years. However, consistent with previous studies, the incidence rate decreased by about 1% for each year among men and similarly among women until the beginning of the COVID-19 pandemic in Türkiye.

The study conducted by Kent et al. provided evidence that by limiting the maximum duration of the look-back

period to 1, 2, or 3 years, the incidence rates of coronary artery disease were 6.8%, 4.9%, and 4.2%, respectively.⁴ Moreover, in our study, consistent with the literature, the incidence rate in 2020 and 2021 remained stable when truncated as a 4-year look-back period.² Compared with the incidence rate in 2022, the reason for the lower incidence rates in 2020 and 2021 may be attributed to the COVID-19 pandemic in Türkiye.

We estimated the incidence rate based on the ICD-10 codes for heart failure, not standardized clinical criteria.¹ Even though ICD-10 codes have been shown to be accurate at identifying incident heart failure diagnoses,³ the presence of subdivisions within ICD-10 codes, especially the presence of combined pathologies (like hypertensive heart disease or hypertensive heart disease and chronic kidney disease), may cause wrong estimates of incidence rates.

Contributors

Ahmet Çelik contributed to conceptualisation, supervision and drafting. İnci Tuğçe Çöllüoğlu and Anıl Şahin contributed to writing and data sourcing. Dilek Ural contributed to supervision, conceptualisation and editing. Mehmet Birhan Yılmaz contributed to supervision and editing. Naim Ata contributed to supervision and editing.

Declaration of interests

None.

References

- 1 Çelik A, Ural D, Şahin A, et al. Trends in heart failure between 2016 and 2022 in Türkiye (TRends-HF): a nationwide retrospective cohort study of 85 million individuals across entire population of all ages. *Lancet Reg Health Eur.* 2023;33:100723.
- 2 Rosenlund M, Ekström N, Törnblom M, Wintzell V, Stark JH, Titievsky L. Impact of variable look-back periods on the incidence rates of chronic diseases using real world data. *Pharmacoepidemiol Drug Saf.* 2020;29(9):1086–1092.
- 3 Ødegaard KM, Lirhus SS, Melberg HO, Hallén J, Halvorsen S. A nationwide registry study on heart failure in Norway from 2008 to 2018: variations in lookback period affect incidence estimates. *BMC Cardiovasc Disord.* 2022;22(1):88.
- 4 Kent ST, Safford MM, Zhao H, et al. Optimal use of available claims to identify a Medicare population free of coronary heart disease. *Am J Epidemiol.* 2015;182(9):808–819.

DOIs of original articles: <https://doi.org/10.1016/j.lanepe.2023.100761>, <https://doi.org/10.1016/j.lanepe.2023.100723>

*Corresponding author.

E-mail address: ahmetcelik39@hotmail.com (A. Çelik).

© 2023 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).



The Lancet Regional Health - Europe 2023;35: 100762

Published Online xxx <https://doi.org/10.1016/j.lanepe.2023.100762>