

LETTER TO THE EDITOR

Letter by Agirbasli and Aksoy Regarding Article, “Coronary Artery and Cardiac Disease in Patients With Type 2 Myocardial Infarction: A Prospective Cohort Study”

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To the Editor:

We read the article by Bularga et al.¹ with interest. The use of high-sensitivity cardiac troponin (cTn) reference limits in the definition of type 2 myocardial infarction (MI) comes with challenges. Biological variability exists in cTn levels. In general, the biological variability of a biomarker such as cTn establishes the limits of definitions on the basis of the threshold cTn levels.² High-sensitivity troponin levels can be higher than the limit of detection in healthy people, likely because the upper reference limits (URLs) are derived from a healthy general population. The Academy of the American Association for Clinical Chemistry has reported that in addition to sex, age and ethnicity of the reference population can affect the baseline cTn levels.³ The definition of MI is based on the detection of high-sensitivity cTn levels above the 99th percentile of the URL value of a healthy reference population.⁴ Troponin is measurable with high-sensitivity troponin assays in the blood of healthy adults.^{2,3} There is no consensus among manufacturers for the definition of the reference population used to derive high-sensitivity cTn reference limits, although it is known that sex, age, ethnicity, and population differences affect the URLs for high-sensitivity cTn assay.^{2,3} The URL level is substantially higher in elderly patients compared with younger patients.⁵ Men have significantly higher URL levels compared with women.^{2,3} In the present study, there were significant differences in age and sex distribution between the groups with and without coronary artery disease, which can confound the results of the study.¹

In addition, biological variability affects the diagnosis of type 2 MI. Patients with a low baseline cTn level would be at a diagnostic disadvantage despite a more striking leap from baseline cTn level compared with patients with higher baseline cTn level.² It would be meaningful to

know the cTnI homeostatic set point during stable times to establish a diagnosis of type 2 MI, but this is not routine practice.

Limitations of current analytical platforms such as absence of a universal healthy normal reference pool and unavailability of different cutoff levels for different populations can confound the interpretation of the high-sensitivity cTn test in the setting of type 2 MI.

ARTICLE INFORMATION

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Disclosures

None.

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