

Letter by Agirbasli and Aksoy Regarding Article, “Associations of Variability in Blood Pressure, Glucose and Cholesterol Concentrations, and Body Mass Index With Mortality and Cardiovascular Outcomes in the General Population”

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LETTER TO THE EDITOR

Letter by Agirbasli and Aksoy Regarding Article, "Associations of Variability in Blood Pressure, Glucose and Cholesterol Concentrations, and Body Mass Index With Mortality and Cardiovascular Outcomes in the General Population"

To the Editor:

We read the article by Kim et al¹ with great interest. The authors study the variability in glucose and cholesterol concentrations, blood pressure, and body mass index and cardiovascular outcomes in a Korean population.¹ The study reports that high variability of these parameters is an independent predictor of mortality and cardiovascular events.¹ The authors define and score variability on the basis of 4 indexes: coefficient of variation (CV), SD, variability independent of the mean, and average real variability.¹ The authors provide a comprehensive analysis of intraindividual variation. However, we should acknowledge that the variability of the biochemical test results over time can be the result of analytical or biological variations.² The authors do not assess the sources of variation. In assessing variability, each result is associated with its own inherent random variation.² This random variation comprises variation associated with laboratory analysis (preanalytical and analytical) and inherent biological variation (intraindividual). The sources of variability in these parameters can therefore be analytical (CVA) or biological (CVI).³ For a significant change between consecutive test results, the difference is expected to be larger than the change that can reasonably be expected as a result of normal biological and analytical variation. This is not assessed in the study. Reference change value (RCV) has been proposed as a criterion to assess biological variation in serial testing. The formula for RCV is $RCV = k * \sqrt{2} * \sqrt{CVA^2 + CVI^2}$, where k is the number of SDs appropriate to the probability selected (k is 1.96 for 95% probability).⁴ If the change in a test result is greater than the RCV value, it can be concluded that there is an actual change in the biological status.³ However, in the absence of RCV calculation, we will be unable to assess a true change in successive test results.³

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ARTICLE INFORMATION

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Disclosures

None.

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