

## Usefulness of the Visceral Adiposity Index in Different Populations

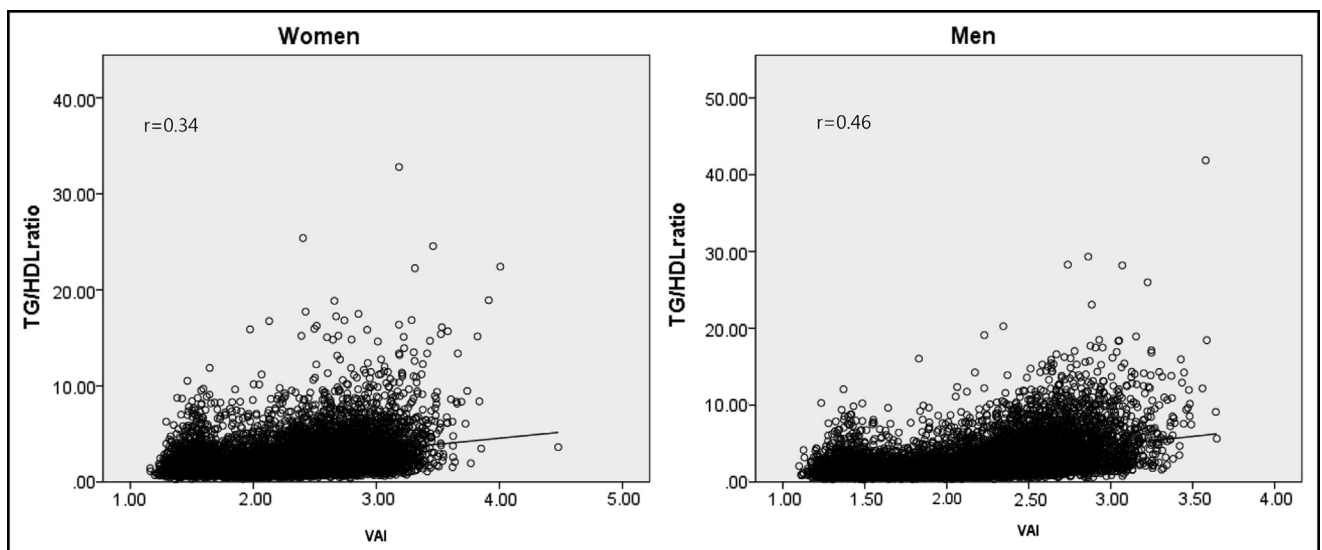
To the Editor:

We were very interested in the study by Salazar et al<sup>1</sup> titled “Identification of Cardiometabolic Risk: Visceral Adiposity Index Versus Triglyceride/HDL Cholesterol Ratio,” which was published in *The American Journal of Medicine*. The authors demonstrated that the triglyceride (TG)/high-density lipoprotein cholesterol (HDL-C) ratio is not inferior to the visceral adiposity index for the identification of cardiovascular events. However, in another brief report by Amato et al,<sup>2</sup> the receiver operating characteristic curve analysis used to predict cardiovascular risk demonstrated significant differences in C statistics between the visceral adiposity index and the TG/HDL-C ratio ( $P < .005$ ), and they concluded that the former is better.

We do not intend to judge the differential ability of the visceral adiposity index and the TG/HDL-C ratio to predict cardiovascular risk; instead, we note that Salazar et al<sup>1</sup> acknowledged that the relationship between the visceral adiposity index and the TG/HDL-C ratio shows a perfect positive correlation ( $r = 0.99$ ). Of note, the ability to

identify a “high-risk” population is highly unanimous ( $\kappa = 0.88$ ). It is speculated that the divergent results might, at least partially, be due to the correlation between the visceral adiposity index and the TG/HDL-C ratio.

As mentioned by the authors, the study population included only middle-aged inhabitants of Europe. This model may be unsuitable for other racial groups. This prompted us to investigate the correlation between the visceral adiposity index and the TG/HDL-C ratio in the National Health and Nutrition Examination Survey III,<sup>3</sup> which consisted of a representative sample of the noninstitutionalized civilian population in the United States (9492 men and 10,125 women). The exclusion criteria for enrolling subjects for the use of the visceral adiposity index were the same as those used by Salazar et al.<sup>1</sup> However, no overt correlation between the visceral adiposity index and the TG/HDL-C ratio was found in the US population. The Pearson’s  $r$  coefficient showed only a mild positive correlation in both genders (0.46 for men and 0.34 for women) (**Figure**). In addition, the Kappa coefficient used to identify a “high-risk” population is fair ( $\kappa = 0.33$ ). A variant correlation between the visceral adiposity index and the TG/HDL-C ratio in different populations does indeed exist. Therefore, it is concerning if we use a population with



**Figure** Scatter plots of the relationship between the visceral adiposity index and the TG/HDL-C ratio. TG/HDL = triglyceride/high-density lipoprotein cholesterol; VAI = visceral adiposity index.

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a high correlation between the visceral adiposity index and the TG/HDL-C ratio to infer the ability of fat distribution (waist and body mass index) parameters.

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