Letter to the Editor

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Heart Rate Variability as a Valuable and Easy Method for the Evaluation of Cardiac Autonomic Function

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Dear Editor,

I read the paper by Fidan-Yaylali et al. [1] entitled "The Association between Central Adiposity and Autonomic Dysfunction in Obesity" with great interest. The authors reported that indices of heart rate recovery, especially those at the late decay phase, as predictors of cardiac autonomic dysfunction are impaired in obese individuals.

Cardiac autonomic dysfunction is described as a dysregulation of cardiovascular autonomic function without any other reason, inducing dysautonomia, and is accepted as an independent prognostic factor for cardiovascular morbidity and mortality [2]. Cardiovascular autonomic reflex tests (CARTs), heart rate variability (HRV), heart rate turbulence, and heart rate recovery can be used for the evaluation of cardiac autonomic dysfunction [1, 3].

The International Toronto Consensus supports the use of spectral analysis using HRV for the assessment of cardiac autonomic function, although CARTs are the gold standard for the assessment of cardiac autonomic function [3]. CARTs demonstrate heart rate alteration during 4 maneuvers: deep breathing, Valsalva, orthostatic maneuvers for evaluation of the parasympathetic activity, and orthostatic hypotension for determination of the sympathetic tonus [3]. HRV analysis, which is a noninvasive technique, focuses on the beat-to-beat oscillation of the interval between successive R points which correspond to the peak of the QRS complex on the surface ECG, and has 2 main parts in practice: time domain analysis, and frequency-domain analysis. The HRV differs from other methods used for evaluation of the cardiac autonomic function because it is easy to perform and provides numerical knowledge about cardiac autonomic function [2]. I think the study by Fidan-Yaylali et al. [1] would be very powerful using HRV in combination with heart rate recovery in obese individuals to demonstrate cardiac autonomic dysfunction.

Recently, Hillebrand et al. [4] reported that body fat is a strong influential factor on HRV indices, probably due to insulin resistance. Hence, based on other studies [2, 4], the relationships between heart rate recovery and body mass index are inconsistent.

References

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Editor's note: The corresponding author of the referred paper declined to respond.

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