



Letter to the Editor

Arterial Stiffness Measurement in Metabolic Syndrome Patients

We read with great interest the article by Cozma et al. [1] in which the authors showed that arterial stiffness is influenced by polymorphisms observed in endothelial nitric oxide synthase gene. This polymorphism has been associated with arterial stiffness and hypertension [2]. However, Cozma et al. [1] used pulse wave velocity as an index for the arterial stiffness. Using this index in the cardiometabolic syndrome can be questionable and the results of this study can be influenced by that.

Pulse wave velocity has been used as a measure of arterial stiffness for many years and it has been mentioned as a reliable index for arterial stiffness [3]. But the fact that this index is dependent on the blood pressure changes in the individuals make it an unsuitable index in the hypertensive patients [4]. New indices for arterial stiffness had been developed in recent years that are less dependent on the blood pressure. Parameter β , Cardio-Ankle Vascular Index (CAVI) and the mathematical correction of CAVI (CAVI₀) can be named as more reliable indices [5,6]. CAVI and CAVI₀ can be measured by the values of PWV and blood pressure by the following formula:

$$(1) \text{CAVI} = a \left\{ \left(\frac{2\rho}{\Delta P} \right) \times \ln \left(\frac{P_s}{P_d} \right) \text{PWV}^2 \right\} + b,$$

$$(2) \text{CAVI}_0 = 2\rho \times \left(\frac{\text{PWV}^2}{P_d} \right) - \ln \left(\frac{P_d}{P_0} \right)$$

[PWV, pulse wave velocity of the arterial tree from the origin of the aorta to the ankle; P_s , systolic blood pressure; P_d , diastolic blood pressure; ρ , blood density; ΔP , $P_s - P_d$, a , b ; coefficients, P_0 = reference pressure (100 mmHg)].

Using these indices in metabolic patients who have high rate of hypertension can give a better picture of arterial stiffness, regardless of their blood pressure values.

CONFLICTS OF INTEREST

The author declares no conflicts of interest.

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