

Cardiometry: new options in cardiology

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Abstract

Cardiometry as a new fundamental field of cardiology is described in the paper. The laws of cardiometry are identified herein. Cardiometry is based on an adequate mathematical model of hemodynamics that is described by the Poyedintsev-Voronova equations. The mode of elevated blood fluidity was first described by the mathematics. This allows both to properly interpret the mechanism of the heart performance and to calculate phase-related volumes of blood in each cardiac cycle. The new interpretation of the SA and AV nodes functioning as baroreceptors is provided by the authors.

A new classification for all of the varieties of ECG curve shapes has been proposed [1 - 13]. Clearly identified boundaries in each phase are provided according to the new theory of hemodynamics, and some new symbols for newly defined ECG points has been proposed. Point L which denotes the beginning of the rapid ejection phase has been introduced. The exact location of point j that is the end of the rapid ejection phase has been given by the authors [5, 13-16].

The existing ECG recording methods has been revised, and an original single-lead ECG of the ascending aorta has been developed. A rheogram is recorded in synchronism with obtaining the original single-lead ECG. Phase synchronization of the ECG and Rheo curves supplies us with a new source of data on all phase-related changes in arterial pressure. A new diagnostic device CARDIOCODE has been developed on the basis of the new theoretical basis. CARDIOCODE delivers non-invasively data on 7 phase-related volumes of blood in every cardiac cycle that was absolutely incredible in the past [1 - 11].

Keywords

Cardiometry • ECG • Rheo • Hemodynamics • Baroreceptors

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