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Extended abstract

Cardiometry as a new fundamental scientific field in cardiology

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Abstract

Our fundamental research in hemodynamics allows us to develop a new mathematical model of blood flow in the cardiovascular system which is in line with actual data in practice. It provides us some new data on the performance of various cardiovascular system segments responsible for the circulation maintenance. Our research has resulted in the development of an innovative technology and a device for accurate non-invasive measuring of hemodynamic parameters which was not possible earlier. The use of the device helps us obtain some new information that is the basis for a radically new ECG and Rheo classification. It is based on the cardiac cycle phase analysis. It is precisely the methodology that is capable of revealing the heart performance mechanism, which could not be explored earlier, and investigating progression of various pathological processes.

Mechanisms of sudden cardiac death and those of energetic resources responsible for maintaining the normal hemodynamics have been detected by our R & D team. The method for non-invasive assessment of cardiac muscle metabolic processes has been developed. The core principles which constitute the basis of cardiometry as a new scientific field have been defined in our research.

Keywords

Cardiometry • ECG • Rheo • Hemodynamics • Mathematical model of blood flow

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