Cardiovascular and Cardiorespiratory Interactions – From Physiological Mechanisms to Clinical Applications
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Applications of Impedance Cardiography (ICG) Signals in Analysis of Cardiovascular System Diagnosis and Description

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The analysis of cardiovascular system response to various physiological stimuli as for example active orthostatic maneuver, head-up tilt test, handgrip or dynamic exercise may provide some supplementary diagnostic data on autonomic control activity and might help to predict the occurrence of some critical events, e.g. orthostatic syncope. Heart rhythm/rate variability (HRV) has been intensively studied in supine and other body positions in humans. However, only limited study results were published describing rhythms, fluctuations and generally dynamics of hemodynamic parameters, especially monitored during transient phase of physiological tests. Usually, the data are collected from small groups of subjects eg. healthy or with atrial fibrillation.

We plan to present several applications of Impedance Cardiography (ICG) analysis and directions for future research, while highlighting some limitations and precautions of the method.