

Spectral Analysis of Cardiac Rhythm Variability as a Method for the Investigation of the Neurovegetative Regulation of the Heart

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An algorithm and a computer program have been developed, based on the Fast-Fourier transformation of R-R intervals in the ECG under sinus rhythm. The algorithm eliminates intervals with extrasystoles and disturbances. New data from the literature on physiological mechanisms for the appearance of separate components in the spectrum at rest and under several functional tests are being submitted. Direct proofs are being presented on the influence of the sympathetic part mainly on the low frequency component (LFC), especially on the LFC in vertical position. The vagus nerve is influencing merely the whole high frequency component - in horizontal as well vertical position, as on LFC in both positions of the body. Spectral components are not specific markers of vagus and sympaticus activities, they are an expression of their dynamical balance.

Key words: Variability of cardiac rhythm, Spectral analysis, HRV functional tests