Yu.L. Mazhara

Study of certain unusual aspects of heart activity of the operator and the patient during corrective programming of information-exchange processes in the organism using the method of Resonance Bio-Correction.

(Preliminary data)

Numerous positive results of the corrective therapy of resonance interaction between structural categories of active biological forms constitute a broad spectrum of possibilities to study this phenomenon. Apart from various clinical tests of patients' resulting state after the end of a bio-correction course, studies were performed using accessible surface measurements that show the dynamics of functional characteristics of the human organism immediately in the moment of contact. In particular, there were effects of parameter changes in the monitored subjects' heart function, which clearly demonstrates the «operator-patient» space-resonance complex. However, it should be taken into account that the received data reflect peripheral reactions of only a limited segment of the organism's general structural form, and integration of the unified diagram of the mechanism of functional dependence will require a significant percentage of extrapolation. In this aspect, of interest may be a study of the EEG of the operator and the patient in the conditions of purposeful program influence by the method of Resonance Bio-Correction (RBC).

The ECG was recorded on «Kardiotehnika 4000» devices for 24-hour Holter monitoring by the company «Inkart» before the RBC session and during correction, for the operator and patients with different pathologies. The ECG was analyzed by conventional methods based on the systemic symmetrical approach (1), as well as methods meeting the requirements of the «Heart rate variability: Standards of measurement, physiological interpretation, and clinical use» prepared by the expert group of the European Society of Cardiology and the the North American Society of Pacing and Electrophysiology (2). In particular, histograms, scattergrams, power spectrum of heart rate variability and its components (VLF, LF, HF, LF/HF) were calculated in absolute values ($m*sec^2$) and normalized units (n.u.), they characterized activeness of the autonomous nervous system (V.V. Pivovarov's software). Heart function was also evaluated using the method of spectral analysis of the piecewise linear function with breaks and an arbitrary placement of measuring references. This approach is a direct method and allows us to obtain information on the basic cardiac rhythm (I.N. Dmitriev's software).
In the case of the operator testing, the test results yielded clear-cut regular figures.

In the beginning of the session, a certain increase in heart rate (BPM) was consistently recorded, and no connection with the patients' absolute BPM value was observed. The effect originated due to the occurrence of higher-frequency components a the spectrum of the predominant characteristic (see Fig. 1 and Fig. 2).

The spectrum of the ECG segment from 100 to 150 sec

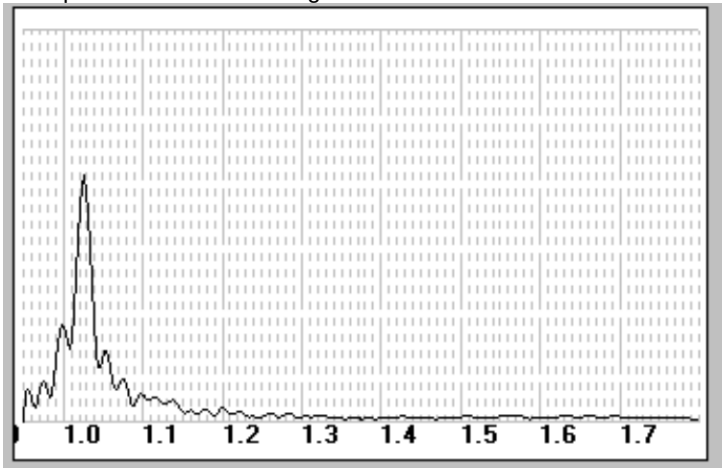


Fig.1 The operator's own frequency spectrum of BPM
immediately at entering the operating mode.

The spectrum of the ECG segment from 240 to 290 sec

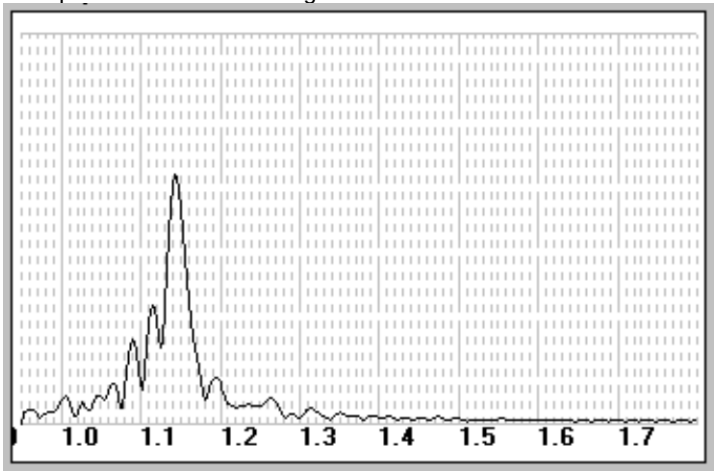


Fig. 2 The operator's own frequency spectrum of BPM
in the beginning of the RBC session.

At the same time, the location of the resulting vector of the electromotive force of the heart in the saggital plane was modified according to the conventional coordinate axis of the given program (Fig. 3 and Fig. 4), which can be described as **an induced balancing of the system space by means of an instantaneous fixation of the counter-structured antiphase of the operator's left hemisphere**, and the resulting effect is not connected with respiratory phases.

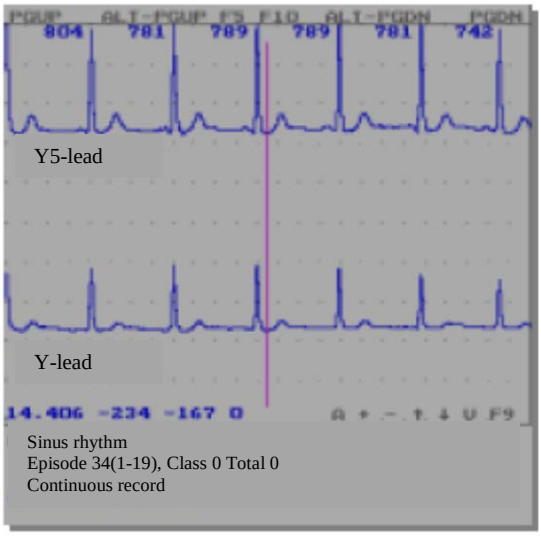


Fig. 3 Amplitude of the operator's ECG waves before the session in the V5 and Y leads, (Y reflects the change of the electromotive force vector of the heart in the sagittal plane).

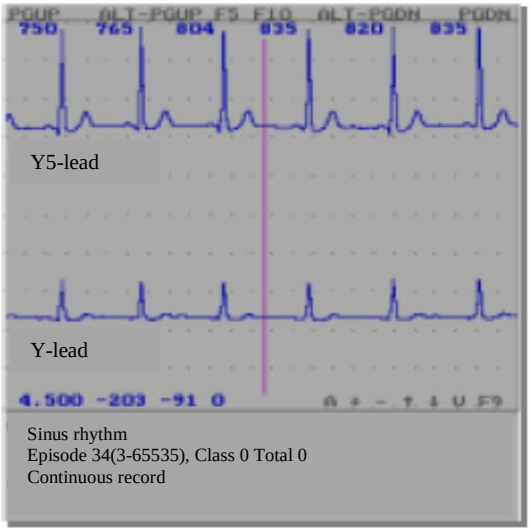


Fig. 4 Decrease of the amplitude of the operator's ECG waves in the Y-lead on the average by 40 percent.

Moreover, the parameters were conclusively recorded that indicated an increase of the degree of extracardiac regulation and an increase of metabolic shifts. There were changes in the operation of the inner circuit of heart regulation and the state of myocardial contractility, which gradually evened out and normalized within 3–5 minutes.

The study of heart rate variability revealed ambiguous changes.

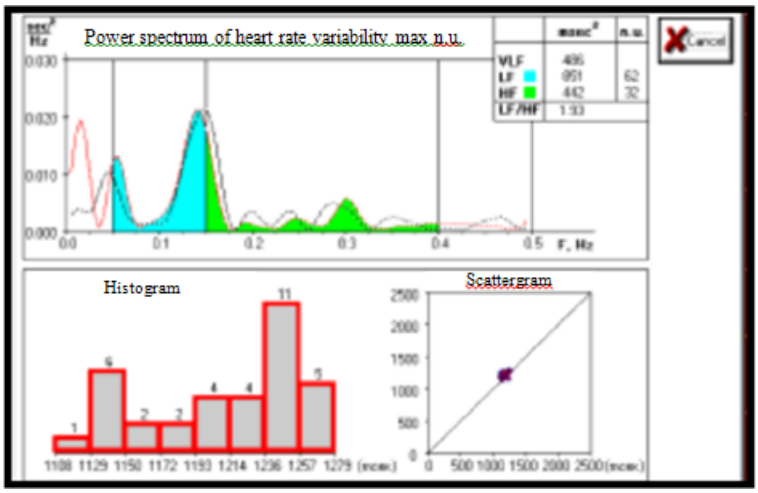


Fig. 5 The figures of the operator's BPM variability.

When working with the same patient at different times, as well as during contact with different patients, the operator showed an instantaneous decrease of the LF component and an increase of the HF values, as well as an increase of the LF component and, accordingly, a decrease of HF.

Other versions were also observed. The LF/HF ratio also manifested ambiguously. Thus it is obvious that the state of the autonomous system, both sympathetic and parasympathetic, in the operator only responded to the degree of severity of the patient's state in the period of interaction.

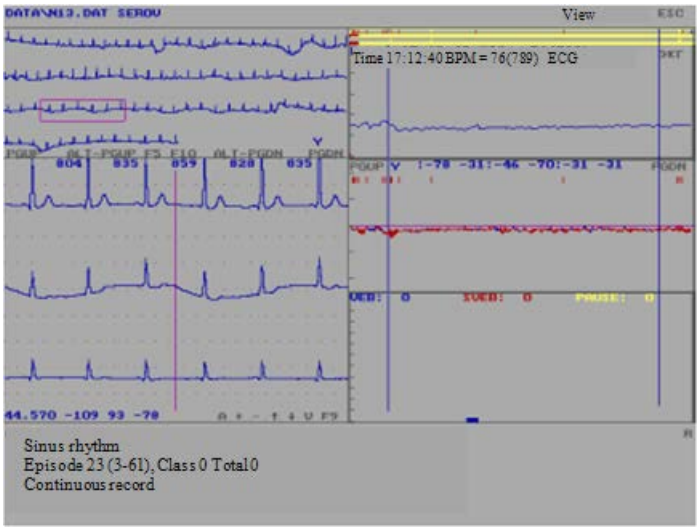
The moment the operator left the transfer with the object under correction, a spike of BPM was recorded due to redistribution of work of the sinoatrial node's own generation.

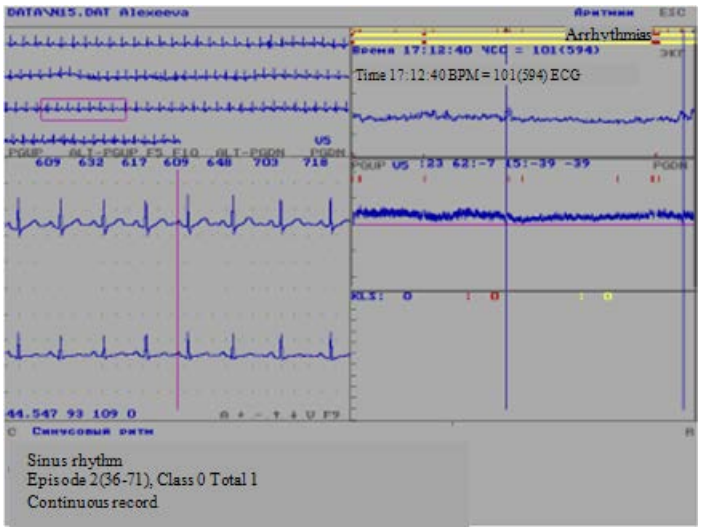
There were no changes in the state of extracardiac and endocardiac regulation of heart function at that moment.

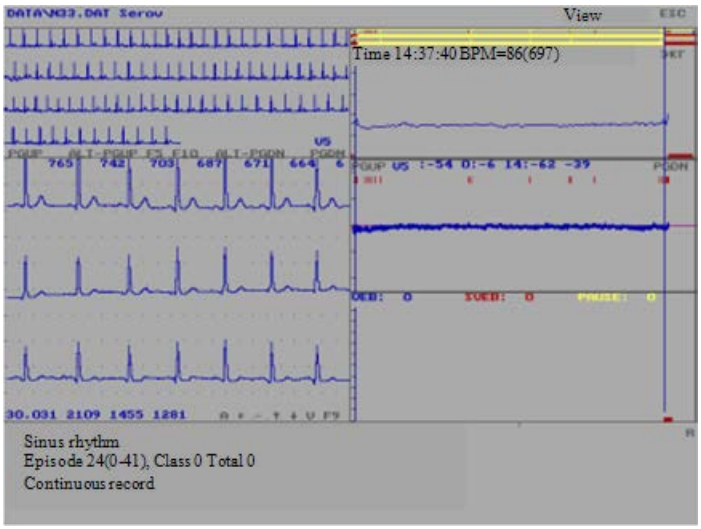
In the beginning of the session, the patients also demonstrated a BPM spike (unreliable increase, $p>0.05$) due to redistribution of individual frequency parameters of generators, and it happened synchronously with the BPM spike in the operator (the correlation coefficient is 88.4%). Such BPM spikes were also observed in the control patient in the moment when the corrective influence switched to him or her (visual and auditory canals of interaction were excluded). No change in the location of the resulting vector of the electromotive force of the patient's heart in the sagittal plane was recorded, but there appeared an increase of the extracardiac regulation of heart function and a strain on the regulatory mechanisms of vegetative nature with metabolic shifts.

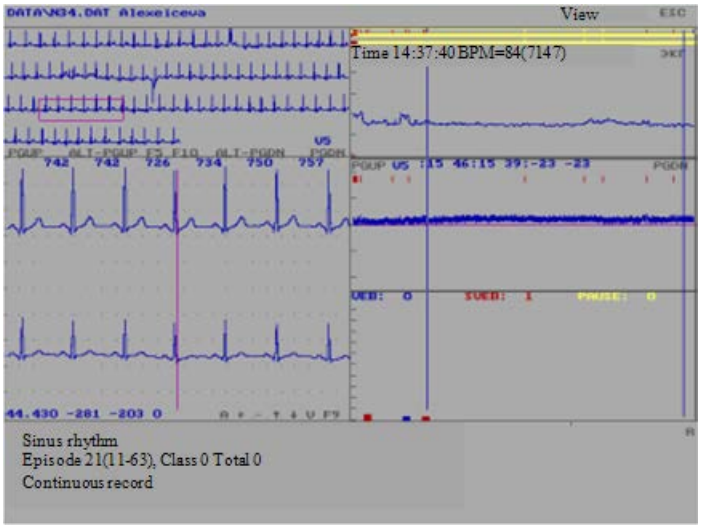
Thus, it was experimentally established that there existed a rigorous transmission between the operator and the patient, with both their heart function altered, and with unidirectionally repeated effects in the operator and various versatile reactions in the patient.

To illustrate, several original ECG records are given that provide a possibility for independent analysis of the described phenomenon. In the figures in the right-hand area of the screen, the beginning and end of operation are marked by vertical lines.









Bibliography.

1. N.V. Dmitrieva//Proceedings of the Academy of Sciences of the USSR. Ser. Biol.-1989.-No. 4.-p.49.
2. European Heart Journal.-1996, vol. 17, P. 354-381.