To the question of the polarization of electrodes
with electropunctural diagnostics by the method of R. Voll

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R. Voll's method makes it possible to perform not only qualitative, but also quantitative analysis of the state of organs and systems of the body using biologically active points. However, devices from different manufacturers used for measurements according to the R. Voll method in the same patient at the same biologically active points (BAP) give significantly different readings. During the study and testing of the devices, it was found that their technical characteristics differ significantly from each other. For comparison, we studied devices that had a voltage of 1.25–5.00 V at the open terminals and a short-circuit current of 12–16 μA. The device, which Voll originally used, consists of a 3.3 V power supply, an additional 275 KΩ resistor. The short-circuit current of this device was 12.0 μA. Later, an electronic version of the R. Voll "KuF-Diatherapunkter", in which the voltage at the open electrodes reached 12 V, and the short-circuit current was 12.0 μA. This device is described in the literature, its readings are considered to be classic [1].

Currently, in the homeland of R. Voll, two types of devices are produced: one is based on a current of 9.0 μA, for any readings of the device, and the voltage varies within 0-5.0 V. This means a linear measurement with a proportional scale. The second type of devices is based on the principle of the classical method of R. Voll - these are nonlinear measurements with a proportional stretched scale. In this case, the voltage at the open electrodes reaches 5.0 V, and the short-circuit current - 16 μA. There are also many devices produced by various manufacturers, in which the voltage across the open electrodes is 1.25 V, and the short-circuit current is 12.0-12.5 μA. The reason that prompted manufacturers to switch to the "standard" of 1.25,

What devices correspond to the classical method of R. Voll? First of all, we investigated the issue of electrode polarization and its contribution to the measurement on the BAP. In electrochemistry [2], the phenomenon of electrode polarization is described by the equation:

U = Ir - Uk + Ua,

where U is the voltage applied to the electrodes, I is the current flowingthrough the human body between the passive and active electrodes, r - resistancedirect current of a part of the human body between two electrodes, -Uk is the polarization potential of the cathode, +Ua is the polarization potential of the anode.

In turn, the polarization potentials -Uk and +Ua are determined exclusively by the magnitude of the current flowing through the human body between the electrodes. Polarization potentials -Uk and +Ua, when using

electrodes made of the same metal have the same value, but different polarity and are included in the measuring circuit of R. Voll's apparatus, in such a way that their action is mutually compensated.

Skin resistance to direct current, in accordance with the classical scale of R. Voll, varies within the range of 0-380 kOhm, while the current in the circuit changes in the range of 12.0-5.5 μA. This current is lower than that required to substantially dissolve the brass active probe.

Consequently, both of these factors - the polarization of the electrodes and the dissolution of the active electrode - have no practical significance in determining the BAP parameters by R. Voll's method.

When designing devices on R. Voll's method obvious a methodological error is to reduce the voltage at the open electrodes to 1.25 V, since in this case it is impossible to bring the readings of these devices in accordance with the values of the classical R. Voll scale, which, in turn, leads to an incorrect assessment of the state of organs and systems a person according to the measured parameters of biologically active points. To increase the reliability of devices for diagnostics by R. Voll's method, we believe, it is necessary to return to the classical scale, based on the voltage at the open electrodes equal to 3.72 V, and the short-circuit current - 12 μA. The choice of these values is due to the minimization of the measurement error of the BAP parameters in relation to the classical scale of the R. Voll method [3].

Currently, there is a need to standardize the requirements for the production of devices by the method of R. Voll and the method of their application.

Literature

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