

Electropuncture diagnostics. Communication II. Main characteristics and features of the most common methods of electropuncture diagnostics

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Electropuncture diagnostics

Publication 2. The main characteristics and features of most commonly used methods of electropuncture diagnostics

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RESUME

Basic information and main diagnostic capabilities of most widely used methods of electropuncture diagnostic are given: electropuncture diagnostic according to R. Voll, method ryodora-ku by J. Nakatani, termopuncture diagnostic by K. Akabane, standard vegetative test by AINechishkin, auricular diagnostic by P. Nogier, bioelectronic functional diagnostic by H. Pflaum and vegetative resonance test by H. Schimmel.

Keywords: electropuncture diagnostic, diagnostic methods, diagnostic equipment.

SUMMARY

The article provides basic information and diagnostic capabilities of the currently most widespread methods of electropunctural diagnostics: electro (aku) puncture diagnostics according to R. Voll, the "Ryodoraku" method according to J. Nakatani, thermopuncture diagnostics according to K. Akabane, standard vegetative test by A.I. ... Nechushkina, auricular diagnostics according to P. Nogier, bioelectronic functional diagnostics according to H. Pflaum and vegetative resonance test according to H. Schimmel.

Key words: electropunctural diagnostics, diagnostic methods, diagnostic equipment.

Electric (aku) puncture diagnostics according to R. Voll

In the Russian Federation, the CIS and most European countries, the most widespread and recognized method of electro (aku) puncture diagnostics, which was developed by the German doctor Reinholdt Voll [1]. The current situation can be explained by the fact that the R. Voll method opens up significantly greater possibilities for the doctor in diagnostics and allows him to choose the treatment that is optimal for a particular patient.

The basis of electro (aku) puncture diagnostics according to the method of R. Voll is the experimentally proven postulate that according to the electrical parameters (EP) of certain, or biologically active points (BAP) of the skin, it is possible to assess the state of not only any functional

systems of the human body, but also an individual organ. The R. Voll method describes more than 1193 skin BAPs used in diagnostics, the search for which is carried out exclusively by anatomical landmarks [2]. Based on the results of the analysis of the indicators obtained in the course of measurements by the EP BAP of the skin, it is possible to formulate a preliminary diagnosis and determine which functional systems or organs are involved in the pathological process.

R. Voll realized his ideas and methods in a diagnostic device, which was originally called "Electropuncter", but was later renamed, for a number of reasons, into "KuF-Universaldiaterapuncter", the scheme and technical characteristics of which were published in 1963. Optimal for measurements is the use of direct electric current at a voltage of about 1.5–2 V and a current strength with closed electrodes (active and passive) up to 12–15  $\mu\text{A}$  [3]. The selected optimal values of the testing current allowed R. Voll to develop a practically acceptable scale for the diagnostic interpretation of the electrical resistance values of skin points obtained in the course of measurements. The normalized scale for all EP BAP values was also the same for all patients and, in addition, all measured values fit into it, which greatly facilitated the diagnostic interpretation of the measurement results. With closed electrodes, the scale of electrical resistance values is linear and corresponds to 100 conventional units according to R. Voll. It is believed that if the value of the EP of points on this scale R. Voll is 50–65 conventional units without the "fall of the arrow", then this is a normal indicator. An increase in these values over 65 indicates hyperfunctional disorders, while a decrease below 50 indicates the presence of degenerative (hypofunctional) changes in the organs. Voll is 50–65 conventional units without "falling arrow", this is a normal indicator. An increase in these values over 65 indicates hyperfunctional disorders, while a decrease below 50 indicates the presence of degenerative (hypofunctional) changes in the organs. Voll is 50–65 conventional units without "falling arrow", this is a normal indicator. An increase in these values over 65 indicates hyperfunctional disorders, while a decrease below 50 indicates the presence of degenerative (hypofunctional) changes in the organs.

In the R. Voll method, to obtain repeatable and reliable indicators, the pressure force of the active (measuring) electrode on the skin is strictly regulated, as well as the angle of its inclination during the recording of readings. In addition, since diagnostics according to the R. Voll method is carried out not by relative, but by absolute values of readings, the design, dimensions of electrodes, material and measurement technology must be strictly observed and be identical.

The discovery in 1954 by R. Voll of the phenomenon of electro (aku) puncture testing of medicines supplemented this method with an even more informative and fundamentally new approach to the individual selection of medicines, determining their optimal dosage and compatibility both with each other and with the patient's body. In the course of joint research by R. Voll and M. Glaser-Türk, it was accidentally noticed that bringing a medicine to the BAP or placing it in the patient's hand significantly changes the measured values of the EP points in one direction or another [4]. At the same time, the reproducibility of this phenomenon was also noted, when, upon repeated measurements of EP BAP without the presence of a drug, the values returned to their initial values. Subsequently, this phenomenon was called drug testing.

The discovery of the phenomenon of drug testing has significantly expanded the functionality of electro (aku) puncture by using R. Voll

special diagnostic tools - nosodes (from nosos - disease), which made it possible to carry out differential diagnostics and determine the etiology of the disease [5]. Nosodes are sterilized and homeopathically prepared antigens and waste products of bacteria, viruses, vaccines, serums, tissue extracts of affected organs, metabolic products, various toxins of chemical and biological origin, etc.

Determination of the etiology and pathogenesis of the disease during drug testing is based on the choice of the nosode of the pathogenic agent, under the influence of testing which normalizes the EP BAP of a certain organ or tissue system - "target" (the principle of isopathy). Subsequently, by testing various dosages of this nosode, its optimal therapeutic dose is individually selected, the frequency of administration into the patient's body and compatibility with other drugs are determined. At the same time, a dynamic assessment of the nature of changes in the EP BAP under the influence of the treatment being carried out makes it possible to carry out operational control over its effectiveness.

The contribution of R. Voll to the development and formation of the method of electropuncture in comparison with other achievements in this area can be regarded without exaggeration as enormous. Electro (aku) puncture diagnostics according to R. Voll in determining changes in tissues, organs and functional systems of the body is the most reliable and informative. Electro (aku) puncture diagnostics according to R. Voll allows you to more confidently approach the formulation of a nosological diagnosis, but at the same time, it is more complicated than other electropuncture diagnostic methods, it requires more time for examination and more serious training of a doctor, organization of his work location, appropriate equipment.

The R. Voll method is officially approved by the Ministry of Health of the Russian Federation for use on the territory of the Russian Federation [6].

Electropuncture diagnostics "Ryodoraku" according to I. NakataniThe emergence of electropunctural diagnostics "riodaraku" dates back to 1956, when the Japanese doctor J. Nakatani, when examining patients with various somatic pathologies, found a sequence of points on the skin with higher EP values than the surrounding surface [10, 11]. All these points, as shown by his further research, lay on the lines, the location of which coincided with the classical acupuncture meridians. In this regard, the method proposed by J. Nakatani was called "ryodoraku" (ryodoraku, from ryo - good, do - (electro) conductivity, raku - line), or "well-conducting line". J. Nakatani identified one point on each ryodoraku, the results of EP measurements of which correlated to the greatest extent with the state of classical acupuncture meridians, associated with the relevant organs and functional systems of the body. J. Nakatani called these points "representative", or "indicative", and proposed to measure the EP of the skin only in them.

As representative by J. Nakatani, a group of distal points is used, mainly consisting of "accomplices" points, the EP values of which, obtained in the course of measurements, make it possible to judge the state of the acupuncture meridian as a whole. To interpret the EP indicators of each "Ryodoraku" J. Nakatani developed scales and created a standard rather convenient and visual diagnostic R-card, in which each "Ryodoraku" was assigned the letter designation "H" or "F" (from the English Hand - hand and Foot is a leg).

J. Nakatani's measurements use the following ryodoraku: H1 - lung line, H2 - pericardial line, H3 - heart line, H4 - small intestine line, H5 - three heaters line, H6 - colon line, F1 - spleen line, F2 - liver line, F3 - kidney line, F4 - bladder line, F5 - gallbladder line, F6 - stomach line. Thus, a representative point intended for measurement is present on each meridian (left and right), with most of these points located in the area of the wrist and foot.

In the classical version of the J. Nakatani method, the measured values of the EP of representative points are entered into a diagnostic R-map with a nonlinear scale, then the arithmetic mean of all representative points is determined (24 values, 12 each on the left and right) and the so-called "norm corridor" is constructed. In accordance with the ideology of the Ryodoraku method, the meridians in which the EP values of the corresponding representative point are above the "norm corridor" are in a state of "energy surplus". On the contrary, those meridians for which the EP values of the corresponding representative point are located on the R-map below the "norm corridor" are in a state of "energy deficiency".

In the method of J. Nakatani, the measurements of EP "ryodoraku" are carried out at a direct current of 200  $\mu$ A and a voltage of 12 V. In the measurements carried out according to J. Nakatani, it is very important that the obtained EP values do not depend on the electrode pressure on the measured point of the skin. This is achieved through the use of an electrode, which is in contact with the skin through a porous material impregnated with an electrolyte (0.9% sodium chloride solution). From a metrological point of view, it should be noted that when assessing the state of the meridians in the J. Nakatani method, not the absolute values of the EP of representative skin points are used, but their location relative to the "norm corridor" formed on the diagnostic R-map. The problem of processing and interpreting the data obtained as a result of measurements of each "Ryodoraku" over the years it has been successfully solved with the help of computer technology. Diagnostic complexes created on the basis of J. Nakatani's method have undergone a number of significant changes and improvements, taking into account the experience gained as a result of clinical testing.

The undoubted merit of J. Nakatani should be recognized the development of such a method of electropunctural diagnostics, which allows assessing the measurement results of each ryodoraku relative to each other and taking into account individual characteristics. Currently, the ryodoraku method of J. Nakatani is one of the fastest, most technologically advanced and convenient electropuncture diagnostic methods for assessing the patient's condition, in terms of traditional

Chinese medicine. The ryodoraku method is also approved for use in the Russian Federation [12].

Thermopuncture diagnostics by K. Akabane method  
Modern thermopuncture diagnostics, which is a diagnostic system based on measuring the thermal sensitivity of certain points of the skin, originates from the test proposed in 1952 by the Japanese physician Kobei Akabane [7, 8, 9].

The K. Akabane method is based on the patient's subjective assessment of the temperature-pain sensitivity of the skin at the end points of the meridians on the fingers and toes, which makes it possible to assess the functional state of the corresponding organs and systems of the body. This technique of traditional oriental medicine was known in ancient times as the "test with a sacrificial stick." The end of a lighted sandalwood stick was brought up and down to the end points of the 12 classical acupuncture meridians of the hands and feet, located in the corner of the nail bed on the fingers and toes. To avoid the patient's habituation to the thermal stimulus, the frequency of such movements was approximately twice a second, and they were performed before the first painful sensations appeared. Subjective sensation of pain in the form of a strong burning sensation appeared after a while, replacing the initial feeling of warmth, and the very moment of transition was easily noticed by the patient himself. Then the number of movements of the stick from the beginning of heating to the moment of fixation of the first painful sensations, which served as a measure of the quantitative assessment of the state of the meridian, was counted, and the results were recorded in a special table.

In accordance with the principles of the K. Akabane method, it is generally accepted that the thermal sensitivity of symmetrical points on the right and left sides is approximately the same, or these differences should be minimal. Dysfunctions of organs affect the state of the corresponding meridians, which leads to a change in the thermal sensitivity of their end points, and mainly from the side where there is a pathology. As a result, there is an asymmetry in the thermal sensitivity of the symmetrical points of the meridians on the left and right sides of the corresponding meridian, as well as between the meridians as a whole, which, according to K. Akabane, is a violation of the indicator of "energy balance" of organs. Another evidence of pathology is also a significant difference from the average time of the appearance of the first pain sensations at the symmetrical points of the meridians.

The classical method of K. Akabane, despite its apparent simplicity, is quite informative, but requires good preparation and does not provide objective data, and its implementation takes a lot of time. Recently, devices have been developed in which the K. Akabane method is implemented, which significantly increase the objectivity of the test and the manufacturability of processing the results of a diagnostic examination using computer programs [9].

It should be emphasized that although the K. Akabane test is not directly a method of electro-acupuncture diagnostics, it has become an important addition to other instrumental tests, which has contributed to an increase in their objectivity and information content.

Electro-acupuncture standard vegetative test according to A.I. Nechushkin

At the Central Institute of Traumatology and Orthopedics of the USSR Ministry of Health named. N.N. Priorova (CITO) A.I. In 1974, Nechushkin developed a variant of electropunctural diagnostics based on measuring the electrical resistance of the skin with direct current at the points of accomplices on the acupuncture meridians. Subsequently, this method, which is a modification of Y. Nakatani's method, was supplemented by measuring the temperature of the skin at the points of the accomplices and was called the "Standard test for assessing the functional state of the autonomic nervous system" CITO or the SVT-CITO test [13, 14]. The SVT-CITO test was approved for medical use by order of the USSR Ministry of Health No. 10 8/30 dated May 27, 1977.

The basis of the SVT-CITO test is the assumption that the electrical resistance of the skin reflects the functional state of the sympathetic nervous system, and the temperature of the skin reflects the parasympathetic nervous system. results

measurements are entered into a special registration card, which differed from the Y. Nakatani card only in that all values, including the values of the testing voltages and currents, were reduced 10 times, and the temperature scales identical for all meridians were plotted on the card. The SVT-CITO test is quite easy to use, described in many manuals and allows you to get a fairly objective "vegetative portrait" of the patient. However, despite this, the lack of computer processing of the results negates the advantages of the SVT-CITO test, since this is an obstacle to its full use in screening examinations and the prompt processing of the information received.

Auricular electropuncture diagnostics according to P. NogierThe method of auricular diagnostics consists in identifying the pathology of organs and functional systems of the body by changing the properties of certain areas of the human auricle skin [15]. Modern auriculodiagnostics and auriculotherapy owe their origin to P. Nogier, who in 1952 reported on the discovery of projection zones of various parts of the body, including internal organs, on the human auricle. The hypothesis proposed by P. Nogier was that the human body is projected onto the auricle in the form of an embryo, the head of which corresponds to the earlobe, the internal organs to the concha, and the limbs to the upper part of the ear, above the antihelix arc. According to the data obtained by P. Nogier, on the skin of the auricle of a healthy person there are no zones and points with low EP, but when various diseases occur, they appear.

treatment - auriculotherapy.

Currently, there are many systems of puncture diagnostics using EPs of various zones and points on the skin of the auricle for this purpose [7, 8, 16, 17]. In favor of the predominant use of the auricle for these purposes, it is evidenced by its location, low concentration of sweat glands, clear anatomical references for searching and identifying points, although auricular electropuncture diagnostics is not unique in some way. Along with this, a certain enthusiasm for electropunctural auriculodiagnostics was the reason to consider this type of diagnostics as one of the most informative. So, for example, the opinion is expressed that "as a result of an in-depth study of the most diagnostically informative zones, it turned out that in the hands of specialists, the iris of the eyes seems to be in the first place, in the second - the auricles, on the third - all the others with varying degrees of significance depending on the recognized pathological process and the skill of the examining doctor "[17, p. 117].

According to F.G. Portnov, the efficiency of electropunctural auriculodiagnostics is quite high, but "... it should be noted that the diagnosis of" hypertension "or" hypotension "according to electrometry data is impossible to make, just like any other clinical diagnosis! In all cases, when we talk about the coincidence of diagnoses, we mean that the clinical diagnosis confirms the presence of increased electrical conductivity at certain points (zones) of the auricle corresponding to a given organ or system. " [8, p. 302].

Recently, the development of new approaches in the form of auricular computed dermatography and auricular computed cartography, most likely, can significantly facilitate the clinical interpretation of the obtained diagnostic information and the choice of treatment tactics [17].

#### Bioelectronic functional diagnostics according to H. Pflaum

In the 1960s, H. Pflaum developed a diagnostic system in which the so-called four-quadrant leads of the "Hand-Hand" and "Leg-Foot" type with the use of plate electrodes were present and which owes its origin to the method of R. Voll [2]. Four-quadrant measurements of the electrical properties of skin zones were used for preliminary or topical diagnostics, the results of which could either be confirmed or refuted by subsequent more accurate diagnostics using the R. Voll method. Subsequently, this direction was significantly developed as a result of the work of H. Pflaum, who, having increased the number of measured skin zones to six, called his method bioelectronic functional diagnostics [18].

Bioelectronic functional diagnostics uses a certain relationship between the state of internal organs and systems and the skin, which is based on the anatomical and physiological principle of the metameric-segmental structure of the human body. Metameric reactions are widely used in neurology to analyze pathological disorders and conduct topical

diagnostics, since each segment carries information about the state of a specific organ or functional system, and also reflects the function of the segmental apparatus of the spinal cord and the autonomic nervous system [18–20]. In bioelectronic functional diagnostics, taking into account the metameric-segmental principle, the electrical characteristics of certain areas of the skin (dermatomes) are measured, which reflect the state (norm or pathology) of the corresponding internal organs or systems (splanchnotomes).

In bioelectronic functional diagnostics, three paired electrodes are used: hand, foot and frontal, which are used in the process of three measuring cycles with 14 measurements on paired leads [21]. As a test signal, pulses of negative and positive polarity are used, following with a certain frequency, which, depending on the method options, ranges from 10 to 30 Hz. The amplitude of the pulses, depending on the age and individual sensitivity of the patient, can vary and is in the range from 0.6 to 2 V at a current of 11 to 50  $\mu$ A. The presence of a pacemaker in a patient is the first and main contraindication for bioelectronic functional diagnostics.

Unlike the R. Voll method, in bioelectronic functional diagnostics, not the absolute values obtained during the measurements are used, but the dynamics of their changes after the presented load, which is a sequence of rectangular bipolar (meander) pulses. Immediately after the end of the load, the measurement cycle is repeated for all leads, then the load cycle is repeated again, after which the third measurement cycle is performed again, completing the diagnostic process. As a result of measurements for all cycles, an integral diagnostic assessment of the patient's condition is presented, namely: type of nonspecific reactivity, tone of the autonomic nervous system, type of regulation, tissue oxygen consumption, state of immune reactivity, autonomic irritation syndrome (localization zone), systems with impaired function, special diagnostic criteria. In terms of differential diagnostics, the results of measurements of the electrical properties of skin zones during bioelectronic functional diagnostics can also be performed using computer processing as analysis of potential target organs, analysis of segmental innervation, analysis of cutaneous innervation, vertebrogenic diagnostics, odontogenic diagnostics, the state of the sympathetic part of the autonomic nervous system [22 ].

The total time for carrying out bioelectronic functional diagnostics is 4 minutes, which is significantly less than the time for performing the test according to J. Nakatani and much less than the examination according to the method of R. Voll. The whole process of bioelectronic functional diagnostics is completely computerized and takes place in several cycles without direct human participation, which, from the point of view of objectivity, distinguishes it favorably from other methods of electropunctural diagnostics. Recently, various authors' modifications of the method of bioelectronic functional diagnostics of H. Pflaum have appeared in the form of "segmental neurofunctional diagnostics of the status of body systems", based, in essence, on the same segmental principle of assessment



vegetative reactions of the patient [22].

Electro-acupuncture vegetative resonance test (VRT or VEGA-test) according to  
H. Schimmel

In 1978, the German physician H. Schimmel developed and proposed an electropuncture diagnostic test, which was originally called the "autonomous reflex test" or "autonomic reflex test" [23]. Subsequently, this test was also referred to as "VEGA-test", after the name of the company "VEGA", which manufactured and introduced into clinical practice the first apparatus for the implementation of this diagnostic method.

[24]. In the Russian Federation and the CIS countries, this test is known as electropuncture vegetative resonance test (ART) [25]. This method is based on electro (aka) puncture diagnostics according to R. Voll, in particular, the phenomenon of drug testing, but unlike it, in his method, H. Schimmel used only one point of the skin for EP measurements.

The principle of diagnostics using the ART method is to register changes in the EP of one reproducible point of the skin when a test preparation is introduced into the measuring circuit [26].

Prior to ART, preparations are made for measurements in the form of a functional load, which is aimed at revealing latent violations in the regulatory functions of certain organs or functional systems in the patient. The load is carried out in one of three ways: the impact of an alternating electric current with a frequency of 13 Hz on the end points of the meridian of the lymphatic system on the right and on the left, or on the skin zones along seven leads, or by the tonic method using acupuncture needles on the points of the anterior and posterior median meridians.

The use of one reproducible skin point for testing requires a special measurement technique - the "pumping" method, which is as follows. During testing, after reaching the maximum value of the measured parameters on the measuring scale, the pressure of the active electrode is reduced without detaching it from the point of the skin, which is accompanied by a decrease in the indicators on the scale of the device. Then the pressure of the active electrode on the same point of the skin is gradually increased again, which, in fact, determines the "pumping" process itself. In the event that after such "inflation" the initial value on the measuring scale is again reached, this point of the skin is considered reproducible. Otherwise, when the initial value after "inflation" is not reached, this point is considered non-reproducible and cannot be used in further measurements using the ART method. The entire inflation process should not exceed three seconds, and the inflation itself should be smooth and not accompanied by jerks and abrupt changes in pressure on the skin point. Otherwise, if too strong or prolonged pressure is applied to the skin point, then it may become unsuitable for further measurements.

After finding a reproducible point on the skin, a test preparation (for example, Epiphysis D26) is placed in the measuring circuit of the apparatus, which marks

the presence or absence of certain disorders in the patient in various organs or systems. Then a second measurement is carried out using the "inflation" technique. In the event that the value of the indicators on the measuring scale was less than the initial value (for example, 80 conventional units), then the test is considered positive, and if there is a return to the initial level - negative.

The test preparations used in the ART method are divided into several groups according to their purpose: a) to increase the sensitivity of diagnostics, for example, Epiphysis D26, b) indicators of a specific disease - nosodes, and c) test preparations that allow determining the localization of a particular pathology, its form and select drugs that can be used in the treatment of a specific disease.

Electropuncture ART is officially approved by the Ministry of Health of the Russian Federation for medical use for use on the territory of the Russian Federation [26].

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