

Electropuncture diagnostics. Communication I. Origin and development
modern methods of electropuncture diagnostics

M.Yu. Gotovsky, L.B. Kosareva

(Center for intelligent medical systems "IMEDIS", Moscow)

Electropuncture diagnostics

Publication 1. Origin and development of electropuncture diagnostic techniques

M.Yu. Gotovskiy, LB Kosareva

Center of intellectual medical systems "IMEDIS" (Moscow, Russia)

SUMMARY

The article critically examines the emergence, development and current state of methods of electropuncture diagnostics in the USSR (RF) and foreign countries. With the assistance of domestic and foreign sources, the analysis of the basic principles of diagnostics by measuring the electrical characteristics of the skin at certain points, points or zones is given.

Key words: electropunctural diagnostics, biologically activepoint, biologically active zone.

RESUME

In this paper, the origin, development and current state of electropuncture diagnostic techniques in the Soviet Union (Russia) and foreign countries are critically consider. Basing on Russian and foreign literature sources the basic principles of the diagnosis by measuring the electrical properties of the skin at certain points or zones are analyzed.

Keywords: electropunctural diagnostics, biological active point.

Basic principles and methods of puncture diagnosticsMethods for recognizing such human conditions as norm (health) and pathology (disease) are the field of medical diagnostics. Diagnostic methods, which are based on the use of various technical means (tools, devices, devices), which became prevalent in the second half of the twentieth century, refer to instrumental diagnostics. The type of instrumental diagnostics, in which certain zones or points of the skin (points) are used, refers to instrumental puncture diagnostics [1]. This type of non-invasive diagnostics is based on ideas about certain points of the skin, which, in the interpretation of various authors, are called "acupuncture points" (TA), "biologically active points" (BAP), "biologically active zones" (BAZ) or "measurement points" (TI) [2].

At all times, human skin has attracted the attention of doctors, especially because the state of the body has the most direct effect on the surface of the body, reflected in certain parameters of the skin [3]. Skin condition as a diagnostic criterion has long been

was used in medicine as a result of the fact that the skin, developing during embryogenesis, as well as internal organs, from the meso- and ectoderm, retained a functional connection with the nervous system, which was formed according to the segmental (metameric) type [4, 5]. As a result, metameric-receptor zones were formed with certain features, namely that not only the impact on certain areas of the skin causes changes in the metameric-segmental type in the corresponding organs or systems, but the skin itself reflects their functional state. A change in the state of skin receptors can also be due to the onset and development of a pathological process. Such well-studied manifestations include an increase in the sensitivity of certain areas of the skin in diseases of the internal organs, which are called the Zakharyin-Ged zone. In 1889 the Russian doctor G.A. Zakharyin, and a little later in 1893, independently of him, the English doctor N. Head, established the presence on the skin of such zones with a certain topographic localization, in which, when pathology of internal organs occurred, reflected pain was noted along with pain or temperature hyperesthesia. Formed modern views on the nature of such zones or points of the skin and their role in the functioning of the body are as follows. It is recognized that the skin is a complex afferent-efferent system, the state of which reflects not only the metabolism, energy and interaction of the body with the external environment, but also the energy status of individual organs or organ systems [6-8]. Such representation is expressed in the form of changes in the functional state of the skin in its certain zones or points,

The development of puncture diagnostics proceeded along the path of searching for the most informative diagnostic methods of registration and selection criteria for these purposes, zones or points of the skin. In traditional Chinese medicine, the most common method of palpation of skin points, aimed at identifying the most painful areas, which, although used for a long time, was very subjective [9].

The emergence and development of electropunctural diagnostics
Electropuncture in its most general form is a diagnostic and therapeutic method, which is based on the determination of the electrical characteristics of zones and / or points of the skin and electrical impact on them in order to obtain a therapeutic effect [1, 10, 11]. Actually, the term "electropuncture" is often used to refer to both electropuncture diagnostics and electropuncture therapy. In European medicine, in most cases, the term "electroacupuncture" is used, although acupuncture needles are not always used to influence acupuncture points with an electropuncture current.

It is rather difficult to determine which of the methods - diagnostic or therapeutic - appeared first. However, both of these methods arose from the combination of one of the most famous areas of traditional Chinese medicine - the classical method of acupuncture treatment (acupuncture) and

technological progress in Western medicine. It should be noted that electroacupuncture in the classical sense is a method of treatment, not a diagnosis, and is a synthesis of electrical stimulation and classical acupuncture. As a result of such a synthesis of diagnostic methods, treatment and interpretation of results, new complex concepts have been formed, which require some explanation for the correctness of further presentation.

Electroacupuncture is based on the principle of exposure to electric current (constant or pulsed) through needles inserted into acupuncture points - corporal or auricular [12]. In a sense, the term transcutaneous electrical stimulation of acupuncture points, both corporal and auricular, is closer to electropuncture therapy [13]. Along with this, there is also transcutaneous electrical nerve stimulation (TENS), which, as the name suggests, is focused exclusively on the effect through the skin on superficially located nerve formations, but not specifically on acupuncture points [14]. At the same time, it is impossible to exclude the possibility of the coincidence of the points selected for TENS exposure and acupuncture points, since many of them are either located close or coincide with nerve structures or trunks.

Electro-acupuncture diagnostics, like other methods of diagnostics and treatment using acupuncture points or skin zones, has its own long and rather complicated history [1, 10, 11, 15, 16]. In Western medicine, both electropuncture itself and this term first appeared in France in 1825, when a book by the French physician Sarlandier was published [11]. The description of the very idea of using electropuncture was made much later, in 1940, and also by the French physician Roger de la Fuÿe (1890–1961), who designed the first device for this purpose [17]. However, the methods described by them were rather close to modern electroacupuncture, since an electric discharge (Sarlandier) or an electric current (de la Fuÿe) was supplied to the needles inserted into the body. De la Fuÿe also called his method "diathermic acupuncture".

In the domestic literature, the first information about acupuncture was a review article, which was written by Professor of the St. Petersburg Medical-Surgical Academy Prokhor Alekseevich Charukovsky (1790-1842) [18]. Against the background of frequent citation of this article in various publications, no attention is paid to the fact that P. Charukovsky, in particular, mentioned that "... one should use acupuncture with galvanism or electricity", i.e. he drew attention to the strengthening of the therapeutic effect of acupuncture in this combination [18, p. 260-261]. Thus, in the modern interpretation, this can be considered as the first mention in the domestic literature of such a therapeutic method as electroacupuncture is currently.

It is obvious that the next and very important step in the development and further implementation of not only electropuncture, but all instrumental methods of searching and identifying acupuncture points and skin zones was made by the French physiologist Jacques-Emile Henri Niboyet (1913-1986). In the mid-1950s. J.E.H. Niboyet, using a specially designed device, discovered that an electrical

the resistance of the skin to direct current in places corresponding to acupuncture points is much less than in neighboring areas [19]. The discovered features of acupuncture points, as shown by subsequent studies by J.E.H. Niboyet, corresponded to the course of the acupuncture channels (meridians), and the electrical characteristics, as it was experimentally established, remained on the corpse until the integrity of the skin was violated [20].

Among the electropunctural diagnostic methods that use corporal points of the skin, the method of electropuncture auriculodiagnostics and auriculotherapy is somewhat out of the way. Electropuncture auricular diagnostics owes its origin to the French neurologist Paul Nogier (1908–1996), who was the first to discover a change in the intensity of the radial artery pulse in humans upon stimulation of skin points on the auricle [21]. Subsequently, this effect was named by P. Nogier auriculocardiac reflex, and later - a vascular autonomous signal, which served as the physiological basis of auriculotherapy and auriculodiagnostics. The vascular autonomic signal discovered by P. Nogier has essentially become a link between the fundamental Eastern and Western medical concepts. It should be admitted that P. Nogier actually became the first, who proved the possibility of both obtaining a therapeutic effect by acting on the points of the auricle, and their use for diagnostic purposes. These methods were based on the hypothesis put forward by P. Nogier, according to which the entire human body is projected onto his auricle. Subsequently, P. Nogier developed the first topography map of auricular points and zones, which were projections of internal organs, upper and lower extremities, spine, etc. onto the auricle. P. Nogier's priority also lies in the fact that he was the first to introduce the terms "auriculotherapy" and "auriculodiagnostics". The principles of auriculodiagnostics and auriculotherapy, formulated by P. Nogier, are now widely used in modern European traditional medicine [22].

Electropuncture diagnostics, first in the USSR, then in Russia, gained fame and developed as electropuncture reflexodiagnostics and reflex therapy or reflexotherapy [1, 11, 10, 23, 24]. This term, which was used in our country in a slightly different sense than that used by Henri Jarricot (1903–1989), subsequently began to be used somewhat less frequently [4]. However, in France, reflexology, although in a slightly different sense than in Russia, is now widespread enough [25]. In most cases, electropuncture therapy is based on the principle of a therapeutic effect on the internal organs and functional systems of the body through certain zones or points of the skin with a constant, alternating or pulsed electric current. A distinctive feature and undoubted advantage of this method in comparison with the use of acupuncture needles is its non-invasiveness. There are other methods of treatment in which various physical factors or pharmacological agents are affected. These include mechanical effects (acupressure), heat (thermopuncture), sound or ultrasound (sonopuncture), constant or alternating magnetic field (magnetopuncture), laser

radiation (laser puncture), electromagnetic radiation of the millimeter or extremely high-frequency (EHF) range (EHF-puncture), microelectrophoretic administration of medicinal substances or using ultrasound (pharmacopuncture or phonophoresis), etc. [9, 11, 26-29].

One cannot but touch upon the variety of terms that are, in principle, semantic synonyms, such as electrostimulation reflexotherapy, which is understood as the effect of electric current on acupuncture points and which combines two methods of treatment - both electropuncture and electroacupuncture [30]. By analogy, along with the concept of reflexology, the term "reflexodiagnostics" derived from it is also often used [31].

A significant progress in the field of electropunctural diagnostics was facilitated by the development in Russia and abroad of special electronic diagnostic devices designed to study the electrical parameters of BAZ and BAP of the skin. Numerous studies carried out in the field of electropunctural diagnostics made it possible to establish that the functional state of organs and tissue systems can be displayed in the form of certain changes in the electrical parameters of the associated BAZ and BAP of the skin.

Electro-acupuncture diagnostics is currently a method of obtaining diagnostic information by measuring the electrical properties of the skin in its specific zones or points, which allows one to indirectly judge the state of internal organs, individual functional systems and the body as a whole is most widespread.

The current situation in this area is such that, despite the variety of methods and the large number of equipment that implements them, there are no unified methodological approaches to instrumental puncture diagnostics. In its most general form, instrumental puncture diagnostics include such methods as determination of temperature at points of the skin [32], sensitivity to a thermal stimulus [33], electric potential [34, 35], intrinsic infrared radiation [36], optical properties [37], electrical resistance [38], etc. The most well-known methods of electropunctural diagnostics are currently:

- electro (aku) puncture diagnostics according to R. Voll (Electroacupuncture according to Voll, EAV, EAF);
 - electropunctural diagnostics "Ryodoraku" according to Y. Nakatani;
 - thermopuncture diagnostics according to the method of K. Akabane;
 - electropuncture standard vegetative test according to A.I. Nechushkin;
 - auricular electropuncture diagnostics according to P. Nogier;
 - bioelectric functions diagnosis
- BFD, BFD) by H. Pflaum;
- electropuncture vegetative resonance test (VRT, VRT) according to H. Schimmel.

Recently, many new modifications of these well-known methods have appeared and, naturally, under new names: electrodermal screening (EDS), computerized electrodermal screening

(computerized electrodermal screening, CEDS), computed dermatography, etc. [39, 40].

Due to the lack of comprehensive statistical data on the results of diagnostics and their comparison with other methods, the problem of identifying advantages or disadvantages remains open.

In 2002, the World Health Organization announced a new strategy for the development of traditional medicine aimed at integration into the Western health system. It also contains a recommendation for all doctors to study and apply in their practice the methods of traditional medicine, including electroacupuncture [41].

Literature

1. Boytsov I.V., Ulashchik V.S. Electro-acupuncture diagnostics and basic directions of its use // Health (Minsk). - 2000. - No. 9. - P. 28-33.
2. Chernavsky D.S., Karp V.P., Rodshtat I.V., Nikitin A.P., Chernavskaya N.M. Recognition. Autodiagnostics. Thinking. Synergetics and the Science of Man / Ed. D.S. Chernavsky. - M.: Radiotekhnika, 2004.
3. Skin (structure, function, general pathology and therapy) / Ed. A.M. Chernukha, E.P. Frolova. - M.: Medicine, 1982.
4. Jarricot H. De certaines relations viscéro-cutanées métagéniques (dermalgies réflexes-viscérales) en acupuncture // Méridiens. - 1971. - V. 15-16, P.87-126.
5. Sudakov Yu.N., Bersenev V.A., Torskaya I.V. Metameric-receptor reflexology. - Kiev: Health, 1986.
6. Nechushkin A.I., Oganessian O.V. On the role of energy skin zones in processes of regulation of the energy balance of the human body // Orthopedist. traumatol. - 1977. - No. 7. - S. 60-64.
7. Zhirmundsky A.V., Kuzmin V.I. The third system of regulation of functions human and animal organisms - a system of active points // Zhurn. total biol. - 1979. - Vol. 40, No. 2. - S. 176-188.
8. Lee MS, Lee YH, Shin BC, Jeong DM, Kim MK, Eo YG, Ko SB Is there any energy transfer during acupuncture? // Am. J. Chin. Med. - 2005. - V.33, N.3. - P.507-512.
9. Tabeeva D.M. Acupuncture guide. - M.: Medicine, 1980.
10. Portnov F.G. Electropuncture diagnostics. - Riga: Zinatne, 1980.
11. Portnov F.G. Electro-acupuncture reflexology. 3rd ed. revised and add. - Riga: "Zinatne", 1988.
12. Ullet GA, Han S., Han JS Electroacupuncture: mechanisms and clinical application // Biol. Psychiatry. - 1998. - V.44, N.2. - P.129-138.
13. Yan T., Hui-Chan CW Transcutaneous electrical stimulation on acupuncture points improves muscle function in subjects after acute stroke: a randomized controlled trial // J. Rehabil. Med. - 2009. - V.41, N.5. - P.312-316.
14. Rakel B., Frantz R. Effectiveness of transcutaneous electrical nerve stimulation on postoperative pain with movement // J. Pain. - 2003. - V.4, N.8. - P.455-464.
15. Tiller WA. On the evolution and future development of electrodermal diagnostic

instruments // Energy Fields in Medicine: A Study of Device Technology Based on Acupuncture Meridians and Chi Energy / Morton M. ed. - Kalamazoo: John Fetzer Foundation, 1989. - P.257-328.

16. Royal FR A review of the history and scientific bases of electrodiagnosis and its relationship to homeopathy and acupuncture // Amer. J. Acup. - 1991. - V. 19, N. 2. - P. 137-152.

17. La Fuÿe R. de. L'Acupuncture chinoise sans mystere. Traite d'acupuncture la synthèse de l'acupuncture et l'homéopathie l'homeosiniatrie diathermique. - TI L'Utilization diagnostique et therapeutique des points cutanes douloureux. - Paris: Le Francois, 1956.

18. Charukovsky P. Acupuncture, Acupuncture // Military medical. zhurn. - 1828. - Part XII, No. 2-3. - P. 251-268.

19. Niboyet JEH Nouvelles constatations sur les propriétés électriques des points chinois // Bull. Soc. d'Acup. - 1958. -- V.30. - P.7-13.

20. Niboyet JEH La moindre résistance a l'électricité des surfaces punctiformes et des trajets cutanés concordants avec les "points" et "meridians", bases de l'acupuncture. - Lyon, France: Imprimerie Louis-Jean, 1963.

21. Nogier P. From Auriculotherapy to Auriculomedicine. - Moulins-les Metz, France: Maisonneuve, 1983.

22. Gori L., Firenzuoli F. Ear acupuncture in european traditional medicine // Evid. Based. Complement. Alternat. Med. - 2007. - V.4, Suppl.1. - P.13-16.

23. Durinyan R.A. Methodological and physiological analysis of the problem points, meridians and energy in reflexology // Theory and practice of reflexology. Biomedical and physical technical aspects. - Saratov: Publishing house Sarat. Unta, 1981. - S. 3-11.

24. Vasilenko AM Elements of the modern theory of reflexology // Reflexology. - 2002. - No. 3. - P. 28-37.

25. Pradal-Prat D. Bases neurophysiologiques des réflexothérapies // Kinésithér. Rev. - 2009. - V.91, N.91 - P.36-41.

26. Whittaker P. Laser acupuncture: past, present, and future // Lasers Med. Sci. - 2004. - V.19, N.2. - P.69-80.

27. Colbert AP, Cleaver J., Brown KA, Harling N., Hwang Y., Schiffke HC, Brons J., Qin Y. Magnets applied to acupuncture points as therapy - a literature review // Acupunct. Med. - 2008. - V.26, N.3. - P. 160-170.

28. Teppone M. Multizonal EHF-therapy or EHF-puncture. - M. : Koloyaro, 1997.

29. Schick E. Phonophorese - Akupunktur mit Tonwellen // Erfahrungsheilkunde. - 1984. - Bd. 33, H.9. - S.567-569.

30. Yakupov R.A. Electrostimulation reflexology // Alternative medicine. - 2005. - No. 4 - P. 9-12.

31. Veliev E.I., Laurent O.B., Korenevsky N.A., Krupchatnikov R.A. Models interaction of internal organs with superficial projection zones and their use in reflexodiagnosics and reflexotherapy // Biomedical Radioelectronics. - 2009. - No. 2. - P. 25-32.

32. Nechushkin A.I., Gaidamakina A.M. Temperature research and electrical conductivity of the skin // Medical business. - 1981. - No. 12. - WITH. 98-99.
33. Bugaev O.G., Derzhavin S.T. Methods for measuring pain threshold sensitivity of acupuncture points to a thermal stimulus (classification of measurement methods) // Reflexotherapy. - 2005. - No. 3. - S. 24-27.
34. Podshibiyakin A.K. About changes in electrical potentials during internal organs and associated active points // Physiol. zhurn. THE USSR. - 1955. - Vol. 41, No. 3. - S. 357-362.
35. Eickhorn R., Schimmel HW Electrophysiological diagnosis at terminal points of acupuncture meridians // Biomedical Therapy. - 1999. - V.17, N.3. - P.11-113.
36. Vogralik V.G., Vogralik M.V., Golovanova M.V., Klemenov V.I. Prospects for the study of infrared radiation of biologically active points in the diagnosis of internal diseases // Sovrem. probl. reflex diagnostics. - Rostov-on-Don, 1984. - S. 58-60.
37. Jovanica BR, Nikolovski D., Radenkovic B., Despotovic M. Optical properties of acupunctural points as diagnostic method // Acta Phys. Polon. A. - 2009. - V.116, N.4. - P.693-696.
38. Neborskiy A.T., Neborskiy S.A. Electrocutaneous conductivity in the assessment functional state of the human body (experimental and theoretical substantiation). - M.: Medicine, 2007.
39. Tsuei JJ The past, present and future of the electrodermal screening system (EDSS) // J. Advance. Med. - 199. -V.8, N.4. - P.217-232.
40. Ponomarev Yu.V., Chernyakhovskaya M.Yu. Clinical aspects of auricular computer dermatography and cartography. - Vladivostok: IAPU FEB RAS, 2000.
41. WHO Traditional Medicine Strategy 2002-2005. - World Health Organization, Geneva, 2002.

Author's address

Ph.D. Gotovsky M.Yu.

General Director of LLC "CIMS" IMEDIS "(Moscow)

info@imedis.ru

Gotovsky, M.Yu. Electropuncture diagnostics. Communication I. The emergence and development of modern methods of electropunctural diagnostics / M.Yu. Gotovsky, L.B. Kosareva // Traditional Medicine. - 2012. - No. 4 (31). - pp. 14-19.

[To favorites](#)