Nakatani's method in the study of the influence of individual music therapy "Musical-energy key" on the functional state

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Among the diagnostic techniques used in reflexology to assess the activity of the functional systems of the body, the choice of Nakatani diagnostics to study the effect of individual music therapy (MT) "Musical-energetic key" (MEK) on the functional state of the body is not accidental. A musical fragment for MT is created individually for each patient, and the choice of a method is connected, among other things, with a feature that allows individualizing the study and immediately seeing the result of MT exposure.

Diagnostics according to Nakatani or diagnostics according to "Ryodoraku" (from Japanese: ryo - good, do - (electro) conductivity, raku - line) was proposed by the Japanese scientist Y. Nakatani in 1963. The Nakatani method is used in the practice of reflexology physicians, for therapeutic, diagnostic purposes and in research work [3–11], including in research in the field of MT [12].

When choosing a research method for evaluating the effectiveness of MT MEK, the following features of diagnostics according to Nakatani were taken into account [1]:

- determination of the functional state of a person is carried out at the systemic level, where the body is represented by 12 functional systems (meridians);
- the test results always show the activity of the meridians at the time of the examination;
- to determine the activity of any meridian, the electrical conductivity of a representative zone of 1 sq. cm, the projection of which coincides with the projection of the corresponding biologically active point (BAP), and the measurement indicator reflects the state of the corresponding meridian and depends on the functional state of the corresponding organ;
- changes in the indicators of cutaneous electrical conductivity (EC) along the meridians are detected not only in diseases of the corresponding organs, but also reflect their physiological state;
- the indicators of the current strength entered in the "Ryodoraku" card, reflecting
  the state of the corresponding meridians, can be both pathological and
  physiological, while the pathological indicator is higher or lower than the
  physiological one; the physiological corridor is calculated based on the values
  of a specific person; the values that are in the physiological corridor are taken
  as the norm;
- the value of the current strength in the area of the representative zone of the meridian above the upper limit of the physiological corridor of the norm indicates its hyperfunction (excess); the value of the current strength in the area of the representative meridian zone below the lower border of the normal corridor indicates hypofunction (deficiency) of the corresponding meridian;

- according to the results of diagnostics, an individual picture of the patient's vegetative status is visible.

The Nakatani method for assessing the effect of MT MEK was used in the study of the functional status of patients with chronic viral hepatitis (VH) [13] and in the study of the effect of different variants of individual MT MEK on the meridian system of the body [14]. The general objectives of these studies included the identification of the influence of MT on the indicators of EP BAP.

The aim of this work is to assess the information capabilities of the Nakatani method of electropunctural diagnostics in studying the effect of individual MT MEK on the functional status of the body.

## Materials and methods

The first study involved 81 people, including 65 patients with CH of various etiologies aged 18 to 73 years and 16 practically healthy individuals. An individual sound fragment was recorded for each participant. The second study involved 11 apparently healthy volunteers of both sexes, aged 30 to 60 years. In the second study, a sound fragment was recorded in two or three versions (22 sound fragments in total): one melody, a melody accompanied by harmony, and a melody accompanied by harmony and sounds of nature. The impact of the music was carried out for 5 minutes. The studies were carried out before and immediately after MT: the level of average electrical conductivity (SE) and the number of meridians in a state of norm and pathology were recorded; blood pressure (BP) and cardiovascular rate (HR) were measured.

Electropuncture diagnostics according to Nakatani was carried out taking into account the methodological recommendations [2].

Registration of indicators of the meridian system was carried out:

- in the first study on the "ARM-PERESVET" apparatus, registration certificate 29/23041098 / 1567–01, Certificate No. ROSS.RU.IMO 2.B14772 European certificate Reg. No. VO-6-045 CE1252;
- in the second study on the apparatus "Biotest FN", registration certificate No. FSR 2911/12421, certificate No. POCC.RU. IM04.NO8431. Certification body reg. No. ROSS RU.0001.11IM04 LLC "CENTER FOR CERTIFICATION OF MEDICAL DEVICES VNIIMP".

For statistical processing of the results, the Student's test, Fisher's exact test, chi-square were used using Microsoft Excel (version 7.0 for Windows 2000), using the statistical software BIOSTAT and STATISTICA 5.11, and the SPSS statistical software package version 17.0.

## results

According to the results of the first and second studies, after exposure to individual MT MEK, the energy-informational balance of the body changes. The SE level individually decreases or increases within the range of 40 to 80  $\mu$ A, which is the corridor of the physiological norm. There is a tendency towards a decrease in SE in comparison with the initial data. After MT

the number of meridians in the physiological norm corridor significantly (p <0.05) increases, the number of meridians in a state of imbalance significantly (p <0.05) decreases in the first and second studies, in the first study both in patients with HH and in healthy individuals ...

After exposure to musical fragment frequency of occurrence the meridians in the norm corridor increases, and the meridians in a state of imbalance decrease in sick people more than in healthy people, the body's response to the effect of MT MEK is more active in patients with acute and severe forms of HV disease. In the course of the research, the influence of MT IEC on various meridians was revealed. In the group of healthy individuals, the meridians of the lungs, heart, small and large intestines, and pancreas were more often normalized (P, C, IG, GI, VB). In patients with GV, the meridians were more often normalized: lungs, blood circulation, heart, triple heater, small and large intestine, gallbladder, liver, pancreas, stomach (P, MC, C, TR, IG, GI, RP, F, VB, E). According to the results of the second study, in the variant - a melody accompanied by harmony, after MT the number of meridians in a state of norm increases significantly more (p <0.05), than in the 1st and 3rd options. Comparison of results indicators between different MT variants is not reliable. Individually, each subject showed tendencies of normalization of lateral symmetry indices of EP BAP and improvement of blood pressure and heart rate indices both in the first and in the second studies.

## conclusions

Summarizing the results of the influence of MT MEK on the indicators of EP BAP, we can say: both in the first and in the second studies, the high information content of the Nakatani method was shown, the ability to identify and evaluate the relationship between the electrical conductivity of the meridians and the impact of MT.

Since the studies did not imply a diagnosis, but only the identification of functional changes after exposure to MT, the electropuncture conclusions obtained using the Nakatani method did not require confirmation by clinical diagnostic methods.

This research method made it possible to assess the energy-informational balance of the body before and immediately after MT. The use of the Ryodoraku card made it possible to visually see the results of individual changes in the functional status, to assess the physiological corridor in each subject based on the values of individual indicators before and after listening to a musical fragment.

As a result of using the Nakatani method, the regularities of the influence of MT MEK on various meridians of both sick and healthy persons were revealed, the features of the influence of different variants of a musical fragment were investigated. Data were obtained on a tendency towards a decrease in SE, which indicates the reaction of inhibition of the sympathetic nervous system after MT MEK and the inclusion of the homeostatic function of the parasympathetic nervous system, which is of a restorative nature. An increase in the number of meridians in the corridor of the physiological norm and a decrease in the number of meridians in a state of imbalance indicates

harmonizing influence of MT MEK on the energy-informational balance and is an indicator of improving the functional state of the body.

Thus, in the study of the influence of individual MT MEK on the functional status of the body, the effectiveness of the information capabilities of the Nakatani method and the effectiveness of its use are shown.

## Literature

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