

SCENAR THERAPY APPLICATIONS

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Using Rista-EPD Complex for Diagnostic Support of SCENAR-Therapy in Gerontological Practice

V.M. Dilman's elevation theory of ageing and age-specific pathology development in higher organisms [1,22] is rightfully considered to be one of the brightest and most profoundly developed gerontological concepts. This theory is based on the postulation that if a steady internal environment is required for an organism to exist, then programmable change of homeostasis level is required for the organism to be able to develop (law of homeostasis change). The author established that the ageing mechanism starts from the continuous elevation of the threshold of hypothalamic sensitivity to the level of hormones in the blood. As a result the concentration of circulating hormones increase, which gradually leads to regulation disorders. Then various pathologies – defined as compensation diseases – develop. These diseases cause ageing, and in the end – death.

This mechanism of ageing is typical for organisms with evolution capability loss, or, as contemporary data says, significantly limited capability of neurogenesis in postnatal life. The following pathologies refer to these naturally developing age-specific diseases: heart diseases, cancerous growth, cerebrovascular pathology, menopause, metabolic immunodepression, atherosclerosis, senile diabetes, obesity, mental depression, autoimmune diseases, hyperadaptosis or metabolic syndrome, etc.

As it follows from the ontogenetic model of disease formation, the development of the diseases can be inhibited by bringing regulation processes to normal, that is by minimizing, as far as possible, the consequences of increasing (due to the age) hormonal anarchy.

The current data known suggests that SCENAR-therapy brings the functional state of the autonomic nervous system (ANS) to normal thus improving the function of the neurohumoral regulation as a whole [2,3,4,5]. This may apparently be considered one of the most important factors of its clinical effectiveness in treating such a wide range of diseases, and this explains many different particular effects of SCENAR-therapy, including faster anagenesis (regeneration of affected tissues) in burn patients, and improved characteristics of lipid peroxidation [6,7,8]. It is generally admitted that the latter two mechanisms are directly relevant to ageing processes.

ANS functional deficiency, more or less, develops in cases of almost all pathology [9,10]. It is also characteristic for age-specific diseases [11,12].

Therefore, the goals and procedures of SCENAR-therapy in prophylaxis of ageing, are first of all determined by the character of the ANS functional deficiency for the time of treatment.

The major manifestations of such ANS functional deficiency are the following: pathologically decreased functional activity, or, vice versa, superfluous influence of the nervous system on the functions of the body with disturbed sympathovagal equilibrium or without it, disturbed sympathovagal equilibrium with normal ANS function as well as disturbed equilibrium of the ANS function with respect to particular autonomic functions.

Examining the functional state of the nervous system as a whole and ANS in particular is a traditional neurological field. That is why it is in the field of neurology that has accumulated a lot of clinical and instrumental methods for estimating various ANS properties. However, most of them are focused on searching and localizing damaged nerve tissues, which is, undoubtedly, important for establishing a nosological diagnosis. However, for SCENAR-therapy it is more important to answer the question – What ANS dysfunctions did this damage cause? – rather than localize the site and

nature of the damage. It should be also kept in mind that the level of such tissue damage and the level of prevailing functional deficiency are by no means always the same.

In this regard, among the methods for assessment of the ANS functional state, heart rate variability (HRV) analysis is of particular interest. Now this method is, in fact, a standard [13,14,15] and most preferred for SCENAR-therapy as compared to other methods. The HRV analysis allows the estimation, first of all, of the functional characteristics of the ANS. However, even this method doesn't solve one of the main procedural problems of SCENAR-therapy: HRV analysis doesn't help to localize the zones to be treated.

Today reflexo-diagnostic methods are widely spread in SCENAR-therapy. They are built upon the Nakatani measurement of skin electro-conductivity in representative biologically active points (BAP) of Classical Chinese meridians, making a Ryodoraku map based on the measurements, diagnosing the state using the Ryodoraku map, and creating prescriptions of the zones to be treated based on this data [16,17,18,19,23].

Originally the Nakatani's method was developed for estimating the energy state of the meridian system in Traditional Chinese Medicine (TCM). This approach was modified for SCENAR-therapy and implemented in the method-based software of the Rista-EPDm and Rista-mini hardware-software complexes. It is presupposed that the functional state of the meridian system shows the 'actual state' of the body, and that for treatment they select the skin zones with certain energy equilibrium disturbances located along classical Chinese meridians [19].

At the same time, it is well-known that skin electro-conductivity depends on the state of the sympathetic part of the ANS, brainstems and reticular formation. Drugs that stimulate the activity of the sympathetic trunk increase skin electro-conductivity, and those that inhibit the activity – significantly decrease skin electro-conductivity [18]. This indicates that skin electro-conductivity characterizes mainly the state of the sympathetic part of the ANS and only indirectly shows that of the parasympathetic part. Whereas it is not critical for traditional application of the Nakatani's method – estimation of energy state of the Chinese meridian system – for assessment of the ANS functional state, it is insufficient to only know electro-conductivity. Interpreting Ryodoraku maps without using supplementary data that describe the state of the ANS parasympathetic part or at least the relation between the functional activities of the sympathetic and parasympathetic parts, often gives discrepant results.

In particular, in TCM average electro-conductivity over all measurements from 36 c.u. (conventional units) to 50 c.u. on the scale from 0 to 100 c.u. is interpreted as relative energy superfluity and is associated with functional hyperactivity of regulatory systems. However concurrent clinical examination and assessment of the ANS functional state with the HRV analysis show that this conclusion is correct only in case of dominating parasympathetic tone of the ANS. When the sympathetic and parasympathetic parts of the ANS are balanced, or when the sympathetic tone is dominating, these values of average electro-conductivity correspond to normal functional activity of the ANS [20]. There are many other such ambiguities indicating that the same quantities, in particular, of average electro-conductivity correspond to qualitatively different functional states of the ANS. This is the evidence of limited application of the Ryodoraku map for estimating the ANS functional state. At the same time, one should note that normalized Ryodoraku map in accordance with TCM criteria is, undoubtedly, an important objective sign of improved ANS function. Therefore, this approach is a suitable minimum for objective control of the treatment process.

To further develop the diagnostic support of SCENAR-therapy for ANS dysfunctions, we suggest a new method that made it possible to significantly correct the ambiguity of the ANS function assessment based on BAP electro-conductivities due to additional characteristics such as blood pressure (BP) and pulse rate (PR) measured right after the patient was examined by the Nakatani's method (Fig.1)

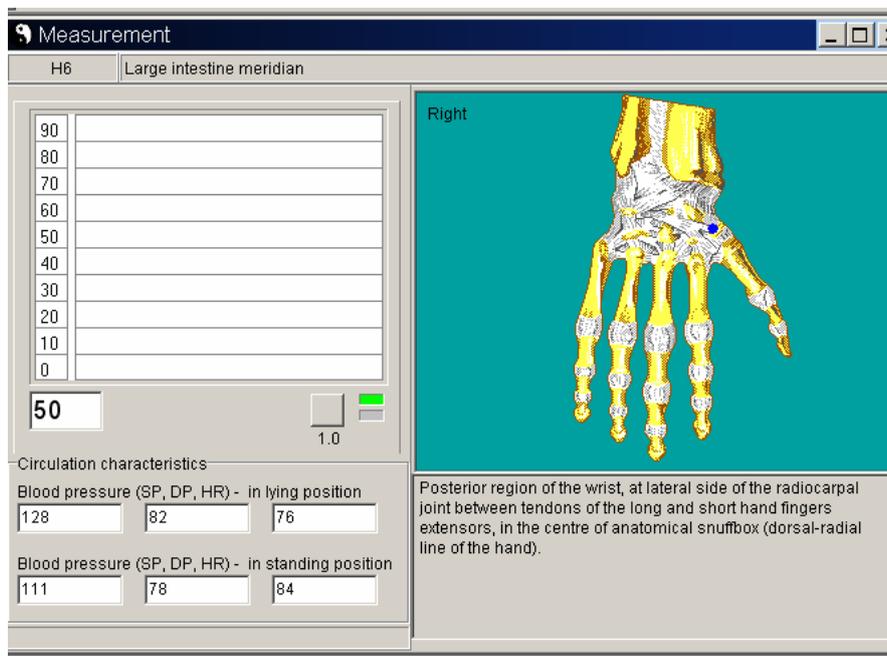


Fig 1.

According to the method suggested, an algorithm for automatic interpretation of the data obtained from the Nakatani examination has been developed. It allows the estimation of the ANS functional state based on the following qualitative characteristics:

- functional activity of the ANS as a whole (normotonia, positive or negative amphotony)
- relation between the functional activities of the sympathetic and parasympathetic parts of the ANS (parasympathicotonia, eutonia, sympathicotonia)
- functional equilibrium of the autonomic functions (normal, disturbed)

Depending on the dominating dysfunction, the unit automatically produces a list of recommended meridians and zone types from a standard prescription.

A diagnostic conclusion displayed in Fig. 2.

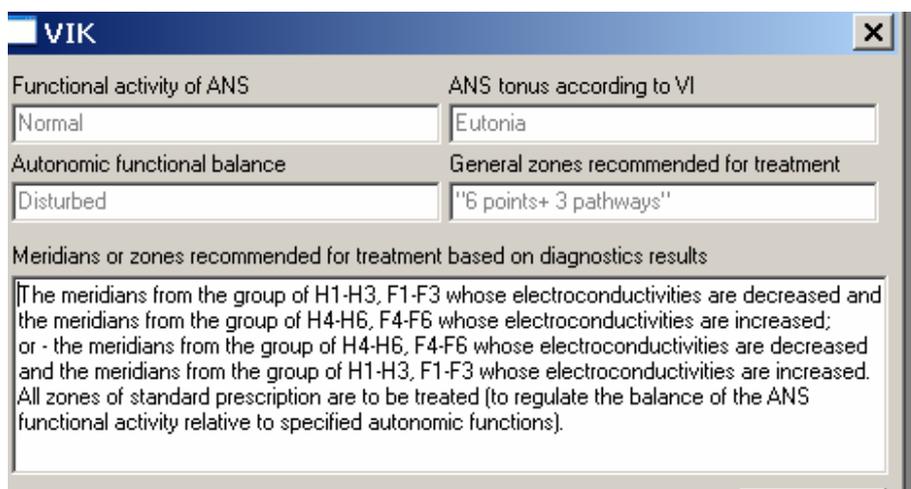


Fig. 2

The main point of the algorithm is that the ANS tone is taken into account when estimating the functional activity using the average electro-conductivity. The tone is objectively automatically assessed using the vegetative Kerdo index (relation between pulse rate and diastolic blood pressure) [24]. This allows not only the exclusion of ambiguity when estimating the functional activity but also to identify a leading defect among the ANS dysfunctions – positive or negative amphotony – at the pre-clinical stage. This is especially important for treatment procedure selection which is obviously proven by standard clinical practice. In particular, it is generally known what difficulties one has to encounter when treating any disease with general ANS hypoactivity – negative amphotony, which

most often manifests itself as an asthenic syndrome. First, the patient should be 'brought out' from asthenia, and only after that the treatment of the basic disease may be effective. Similarly, it is known that the poor efficiency of a specific therapy of almost any disease in case of general ANS hyperactivity – positive amphotony, is its extreme manifestation of fever.

Based on the recommendations, a standard zone prescription is generated. An example of such prescription is shown in Fig.3.

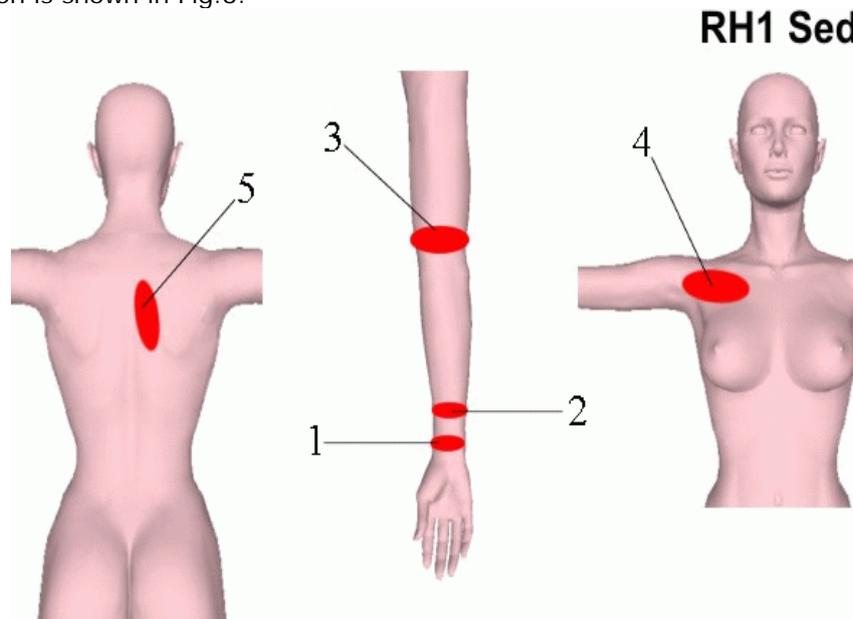


Fig.3

Treating recommended zones among those from a standard prescription with SCENAR may eliminate identified ANS dysfunctions.

During 2006, this method was preliminarily trialed in a private medical institution - Restorative Medicine Center, Moscow.

The patients were treated with SCENAR-1-NT (version 02). Irrespective of disease, they used recommendations and zones that the Rista-EPD complex generated based on the results obtained from the ANS functional state assessment.

A treatment course for 1 patient included from 5 to 7 sessions. One session lasted from 15 to 25 min. The time of session was equally distributed between the zones prescribed – from 1 to 2-3 min for one zone. The zones were treated in the stable mode, at a frequency of 59.3Hz, the stimulation energy strength was maximum at a tolerable comfortable level.

246 patients were treated in all. Most of them were in their mature years (45-59 years old, 34%) and aged people (60-65 years old, 66%).

Originally these ANS dysfunctions were identified in every patient. All patients could be classified in two conventional groups according to the complaint: 1) patients whose leading complaint was pain with various locomotor diseases, 2) patients with various autonomic disorders. Regardless of the symptoms, the treatment was aimed only at bringing the ANS function to normal.

The criterion of successful completion of treatment was the disappearance or a much reduced level in the intensity of the symptoms with the ANS function improved (based on the data of objective examination with the Rista-EPD complex) within 5-7 sessions.

If after the 7th session the patient subjectively did not notice any significant improvement in his/her state, then irrespective of objective changes in the ANS function, another method of treatment was prescribed. The new method was, first of all, aimed at symptom suppression, so the treatment according to this method was considered to be unsuccessful.

When the patient subjectively noticed improvement in his/her state, while from the results of objective examination according to this method the ANS state had not improved, then the treatment was considered to be unsuccessful either regardless of the fact the patient was generally satisfied with the effect.

The patients were examined at the beginning of the treatment, and in all cases some ANS dysfunctions were identified. The intermediate examination during the treatment was carried out either after the 3rd session, or when after the 2nd session there were no appropriate changes in the complaints. Most often, in the latter case the initial prescription was changed. After the treatment was completed (on the 5th-7th session) an examination check was completed.

The treatment goal was achieved in 209 (84,5%) patients (the symptoms were significantly alleviated or disappeared, and from objective data the ANS function improved). In 23 (9%) patients, although they felt better, the ANS function did not improve objectively. In 14 (5,5%) patients, after the 7th session was completed, the symptoms did not improve significantly as compared with the initial level, and the patients were prescribed another treatment.

This data proved that choosing a procedure of SCENAR-therapy for ANS dysfunctions in aged people according to the suggested method is very likely to result in alleviated or completely removed symptoms of locomotor diseases and age-specific autonomic disorders. However the most important thing here is that this effect is achieved due to recovery of regulatory functions which is one of the main objectives in premature ageing prophylaxis [22].

SCENAR TECHNOLOGY OVERVIEW

The name SCENAR derives from: **Self-Controlled Energo-Neuro-Adaptive Regulation.**

The SCENAR is an electronic-therapy device invented by a team of Russian Scientists (Alexander Karasev and Prof. Revenko) and developed further by RITM OKB ZAO in the 1980's for use in space, where cosmonauts would have a means of treating themselves in orbit, without the need to take drugs.

RITM OKB ZAO is the only manufacturer of the original SCENAR technology.

RITM OKB ZAO now has set up a branch in Australia - RITM Australia to provide local support for their products - SCENAR devices for Professionals and Home user and Healing Blankets.

RITM SCENAR devices are CE Mark certified (the highest standard for manufacturing medical devices in the world), ISO 9001, ISO 13845.

RITM SCENAR devices are also included in the Australian Register for Therapeutic Goods Administration under TGA # 140659.

At present the SCENAR medical devices have been recognized in 60 countries all over the world: the United Kingdom, Australia, New Zealand, the Netherlands, Austria, Germany, Italy, Israel, Hungary, Czech Republic, Turkey, South Korea, the US, etc.

Over 6,000 doctors are now using the Scenar as an integral part of their medical practice.

The product range includes professional devices and devices for home users and sportsman, Healing Blankets and accessories.

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|  | Professional series SCENAR devices – for medical practitioners and therapists |
|  | Home SCENAR device series – sportsmen and personal home use |
|  | OLM Healing Blankets and their modifications |