

Evaluation of the Effectiveness of Rehabilitation in Rowers-Paraolympians With the Use of Computer Rapid Diagnosis Nakatani on the Complex "Mediscreen"

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ABSTRACT

Background: Effective health monitoring relied on the speed of execution, the reliability of the results, high performance, effectiveness, safety, ease of use, low cost, reliability, the possibility of mass production, technology, and much more. **Methods:** Usage of the Nakatani method on the "Mediscreen" equipment, evaluated the effectiveness of integrated methods of rehabilitation of Paralympic rowers to determine functional complaints as harbingers of organic changes in the body. **Results:** The results of survey conducted with usage of Mediscreen are easily reproducible, absolutely repeatable and stable.

Key words: Effectiveness of rehabilitation, Paralympian's rowers, Express Nakatani, Complex "Mediscreen".

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INTRODUCTION

The priorities and specific objectives were determined in the State program: Healthcare Development for improving public health by 2020. One of objectives was developing and introducing innovative disease detection, prevention and treatment methods, as well as personalized medical technology. Implementation of this objective should have influenced positively on public health. In this regard, there was a growing need to create sensitive, easy to use, non-invasive diagnostic method for monitoring health. It would have helped to develop and identify the most effective methods of prevention and treatment. Also it would have evaluated objectively the effectiveness of treatments and wellness activities, and observed the functional state of the human health dynamically.

Traditional survey methods used in modern medicine, such as magnetic resonance imaging, radiography etc. allow medicinal practitioners to identify already developed pathologies but do not reflect changes at the level of functional impairment and premorbid conditions.¹

The Computer express-diagnostics Nakatani on the complex "Mediscreen" would have implemented successfully the demands listed above within 2-3 minutes with an accuracy of over 75% and allowed us:

- 1) to identify the violations in the functional system of the person and what causes them;
- 2) to recommend clarifying diagnoses and conducting additional clinical studies;
- 3) to specify the dynamics of the human condition;
- 4) to identify the diseases that were in the latent (hidden) form at a very early stage, when the classical clinical studies hadn't given results yet.

Express diagnostics of Mediscreen used the relationship between the conductivity of the skin at certain points and the state of the functional systems of a person, which is confirmed by studies carried out on tens of thousands of patients. The survey results were easily reproducible, absolutely repeatable and stable with the help of Mediscreen.² Mediscreen

was a modern computer-based modification of Nakatani method, which was well known throughout the world.

Goals and objectives of the study

To estimate methods of rower Paralympian's rehabilitation developed at the Department of clinical physiology and non-medicamental methods of therapy of Faculty of Advanced Training of Medical Workers of Medical Institute of Peoples Friendship University of Russia. An integrated method developed at our department was based on the principles of traditional Chinese medicine (TCM).

Functional complaints were a harbinger of the organic changes in the body. Knowledge in TCM would have helped a specialist, guided by modern scientific achievements, to build a coherent system of disease pathogenesis and to synthesize the experience with the application of rehabilitation.^{3,4} In particular, treatment of diseases of the abdominal cavity was often difficult. The body had to compensate for the situation, which creates a functional problem, and in case of inadequacy of compensation, a structural one.⁴

MATERIALS AND METHODS

The study involved 76 rowers of both sexes, aged from 21 to 63 years. We didn't classify the nosologic forms. All athletes had the results of the pre-instrumental and laboratory examination. There were no contraindications to manual therapy of the spine and internal organs, as well as the using of herbal medicine. All athletes had different complaints about internal organs and locomotor system. These athletes who complained formed Group «A». The manual therapy of internal organs was provided in 100% of the cases. The Mediscreen diagnostic method was used before and after treatment and dynamically 1-2 times per week (frequency of provided manual therapy of the spine and internal organs). There were prescribed 10-12 sessions for the treatment course on average. Measures of complex «Mediscreen» is presented in microampere (10^{-6} A, symbol: μ A).

Table 1: Improvement in state of health of Paralympic's rowers («A»group)

Complaints before treatment	Of total patients	Improvement after treatment	Without significant positive changes
Pain and discomfort in locomotor system	84%	58	6
Different functional disorders of digestive system	55%	38	4
Different functional disorders of urogenital system	25%	19	3

Control group «B» contained 20 athletes, who also had complains about internal organs and locomotor system. The control group received only conservative treatment. The measurements have been done with the help of Mediscreen once a week within 2 months.

Mediscreen was based on the connection between the electric parameters of skin and human health. The skin conductivity on 24 zones located on hands and feet was measured. These zones were with diameter nearly 1 cm and were called Biologically Active Points. Diagnostics was recommended to be made in the morning, on an empty stomach, in a relaxing, sitting position one point form each meridian, which was representative for the condition of the whole meridian was measured.

Measurements were made according the system of Nakatani, describing the points and their sequence.

Nakatani Diagnostics would have shown:

- General energetic level of the organism
- Distribution of the energy in the body - Top/Bottom and Left/ Right relations
- Predominance of Yin and Yang
- Distribution of the energy in the meridians

Diagnosis before rehabilitation, immediately after, and during rehabilitation (frequency of manual therapy of the spine and internal organs was once or twice a week) were conducted with the help of Mediscreen.

Visceral manual technique had been performed in 100% of cases. It had been taken into consideration that the organ dysfunction at the level of the associated vertebra formed functional muscular block, but at the level of the associated vertebral motor segment functional articular block.³

The control group consisted of 36 people who had no active complaints at the time of the survey and they did not get treatment. In this group measurement with the help of Mediscreen was conducted during 2 weeks (with a frequency of once a week) and they received placebo (1 Cup of warm boiled water) once a week.

RESULTS AND DISCUSSION

We took 9 months period for our research analysis. Approximately 84% (58 athletes) of the rowers who presented complaints of the locomotor system, after correction didn't subjectively complained of pain. Approximately 55% (38 athletes) from the «A» group we had noted improvement in the digestive system. Of the 19 athletes (25%) who had complaints from the urogenital system (basically, it dysuric phenomena), 16 noted the positive dynamics of 65% or more, the others had no effect or it wasn't stable. They had been recommended treatment of other specialists. As a result of therapy 83% of the study noted stable improvement in their health and quality of life (Table 1).

The criteria of positive results considered to be those cases when the measurements made by Mediscreen and athlete's state of health (reduction trend of complaints or their total absence) showed improvement. There

were no such positive dynamics and the treatment effect wasn't long in other 17%. Accordingly, they needed additional examination and treatment over a longer period. There were notified that all athletes (including the control group «B») had functional disorders of hypo- and hyperfunction type.

All patients received vegetable collection "Carvipar" consisting of wheat bran, fennel seeds and cumin seeds for improvement of outflow of bile from the biliary tract using 1 teaspoon twice a day 15-30 minutes before meals during 10 days, washed down with warm boiled water.

Before the beginning of treatment, the measured conductivity was found hypo less energetic 25 μ A (physiological corridor is between 25-55 μ A) almost 35% of subjects. The remaining 65% of the study data were determined of the normal range. All patients, including those in the control group, had dysfunction as a side hypothyroidism and hyperthyroidism.

According to the results of the application of visceral therapy and herbal medicine the following trends were identified -45% of athletes showed the decrease of the energy level by 15-35% (the measurement was made in 1,5-2 hours after treatment). Almost all the indicators were in the "physiological corridor", at the same time. The every patient noted deep relaxation during the whole period of treatment.

When re-measuring was performed a week later, the energy level was on the same mark or 6-12 units above, and the picture was more harmonious than initially. At the same time, the state of health also improved. This slow positive trend was observed in 67% of subjects. In 38% of the investigated measurement conducted immediately after the correction showed a sharp rise or decline and the picture was less harmonious, but they subjectively noted positive dynamics. At the next scheduled measurement picture became more harmonious, i.e. most of the functional parameters were defined in "physiological corridor". However, those studied reported about increase of their complaints (exacerbation) within 1-2 days after treatment, followed by improvement in their state of health. In the control group «B» no significant positive changes according to Mediscreen were identified.

CONCLUSION

This study had proved the high effectiveness of combined therapy, developed at the Department of Clinical Physiology and Non-Medicamental Methods of Therapy of Faculty of Advanced Training of Medical Workers of Medical Institute of Peoples Friendship University of Russia, where the crucial importance was visceral manual technique with the addition of herbal medicine. The sensitiveness and highly informativeness of express-diagnostics Nakatani on the complex Mediscreen allowed wide application in clinical practice for the objective assessment of the functional state of an organism. Note that the facts required careful analysis for further development of more efficient and comprehensive method for the prevention and rehabilitation of highly skilled rowers-paraolympian's under the control of the Specialists of Department of clinical laboratory diagnostics.

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