SCENAR therapy efficiency in rehabilitation treatment: approaches and techniques

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Rehabilitation originates from the Latin word habilis – «ability», rehabilis – «restorative abilities».

Rehabilitation represents the set of measures directed at providing the persons with affected functions (as a result of diseases, traumas and congenital defects) with adaptation to new life circumstances in a society where they live.
3 rehabilitation types
(medical, labor, and social)

The first and the leading rehabilitation direction (medical and physical) lies in the patient’s health restoration by means of complex application of various means directed at the maximum restoration of the affected body functions, and in the case if it is impossible – in development of the compensatory and substitutive mechanisms (functions).
Early rehabilitation principle

treatment

rehabilitation

duration
Example of simultaneous therapy…:
«nonspecific pains in back»
Pain relief dynamics in visual analogue scale (% of the initial level) of prehospital patients suffering pains in cervical spine region, * - P<0.05.
Pain and the muscle spasm

- Muscles, ligaments, fascia, joints, vertebra, intervertebral discs

Arachidonic acid cycle
- Prostaglandins
- Prostacyclins
- Thromboxane
- Other proinflammatory agents

Spinal marrow

Reflex muscle spasm

PAIN
The program of patient’s medical rehabilitation includes:

1) Physical rehabilitation methods (electrotreatment, **electrostimulation**, laser therapy, barotherapy, balneotherapy and others),

2) Mechanical rehabilitation methods (mechanotherapy, kinesitherapy),

3) **massage**

4) Traditional treatment methods (acupuncture, phytotherapy, manual therapy and others),

5) Labour therapy,

6) Psychological therapy,

7) Speech therapist training,

8) Treatment gymnastics,

9) Reconstructive surgery,

10) Orthopaedic treatment (protheses, orthoses, complex orthopedic shoes),

11) Sanatorium-and-spa treatment,

12) Technical means of medical rehabilitation (faeces bag, urinal, trainers, devices for food introduction through stoma, parenteral, other technical means),

13) Information and consultation on the medical rehabilitation issues,

14) Other measures, services, technical means.
The principal rehabilitation methods include:

1) *Early onset of rehabilitation measures (RM) performance,*

2) Complexity of application of all the accessible and required RM,

3) Consistency,

4) *Individualized approach in every rehabilitation program,*

5) Active patient’s participation in the rehabilitation program,

6) *Rehabilitation staging,*

7) Continuity and succession in course of all the rehabilitation stages,

8) Social orientation,

9) Application of controlling methods for adequacy of the loads and rehabilitation performance.
Place and Objectives of SCENAR therapy in rehabilitation
What to do and what NOT to do!

Discussion!!!

1. Search for methods applicable in ALL cases!
2. SCENAR therapy represents sanogenetic and non-nosological method
3. Search for universal effects of SCENAR therapy!
OZONE LAYER $O_3$

TROPOSPHERE 21 % $O_2$

„Free radical quantities are the chemical measure of the living substance“
(V. I. Vernadsky)

HYDROSPHERE 96,5 % $H_2O$
Oxygen – 85,8 %

LITHOSPHERE
Oxygen – 47,3 %, or 53,8 % of all the atoms
$SiO_2$, $CaCO_3$, $H_2Al_2Si_2O_8$, $CaO$, $Fe_2O_3$, $Al_2O_3$
Prooxidants

are activated oxygen metabolites, active oxygen species (AOS) and free radicals of any origin

Free radicals

Oxygen radicals

Hypohalogenytes

GS\(^{\cdot}\), R\(^{\cdot}\), NO\(^{\cdot}\), RO\(^{\cdot}\), RO\(^{2-}\), O\(^{2-}\), HO\(^{2-}\), HO\(^{\cdot}\), H\(_2\)O\(_2\), \(1\)O\(_2\), HOCl, HOBr, HOI

Active oxygen species

Activated oxygen metabolites
System balance shift

«prooxidants - antiooxidants»,

with prevalence of prooxidants,
and lack of activity of antioxydant systems
is called oxidative stress
AOS

\(\left(\text{O}_2, \text{O}_2^-/\text{H}_2\text{O}_2, \text{ONOO}^-, \text{O}_3\right)\)

Prooxidant and antioxidant systems (condition of balance)

- Vital activity

- Low level of lipid peroxidation
  - Stress signal
  - Antioxidant defensive system mobilization
  - Survival rate

- Moderate level of lipid peroxidation
  - Stress signal
  - Induction of death programs
  - Apoptosis

- High level of lipid peroxidation
  - Cell structure disturbance/
    Metabolic disorders
  - Membrane lysis
  - Necrosis
AOS are capable of provoking of the lipid and protein peroxidation whose active intermediates may treat into reaction with DNA leading to mutations and apoptosis (Ames, 1989; Easterbauer et al., 1990; Johnson et al., 1999).

The sequence of the pathologic and chemical reactions development during cerebrum hypoxia, accompanied with its edema.

Application of the SCENAR devices for alleviation of the oxidative stress symptoms in blood and strengthening of the antioxidative defense of the body with different pathological conditions and diseases.

(New medical technology)
The impact of the SCENAR therapy on development of disease and oxidative stress process was studied in injured persons with compression trauma complicated with acute renal insufficiency, being treated in the intensive care and reanimation chambers of the department of gravitational blood surgery, sorbtion therapy and acute hemodialysis of the Municipal emergency hospital of Rostov-on-Don city.
Results of the clinically-laboratory investigation conducted in 77 patients being treated in cardiology departments of Rostov-on-Don for the period from 2000 to 2004 were studied, with the purpose of treatment algorithm optimization of the patients with acute myocardial infarction with ST-segment elevation, including the SCENAR therapy application.
Diagram. Intensity of luminol – H₂O₂ – induced chemiluminescence (ChL) and lipid peroxidation products content in blood plasma before and after different treatment methods of acute myocardial infarction (% in relation to control)

- * - p<0,05; ** - 0,05<p<0,1.
The SCENAR therapy performance study for chronic insomnia treatment was conducted with participation of emergency doctors of the city of Rostov-on-Don and Rostov oblast.

342 doctors were examined, of which 73 suffered from chronic insomnia with somatoform vegetative nervous system dysfunction of neurocirculatory dystonia type.
Multi-aspect treatment of transcutaneous electrostimulation using the SCENAR series devices in complex treatment of the different pathological conditions and diseases has proved it’s efficacy in oxidative stress alleviation and antioxidative defense stimulation.

In line with this, the higher the excessive activation of free-radical oxidation reactions, the lower the oxidation product accumulation.
Material basis of the «integrity» is the DNA structure, in which the integrity algorithm is implemented.

“One from all, all from one".

Heraclitus - V century B. C.
Oxidative stress

Discovery of the ability of endogenous cell metabolism products (AOS) to cause genetic mutations was one of the most prominent discoveries in genetic toxicology over the last 20 years.

Free radicals are capable of attacking the DNA bases and deoxyribose with formation of oxidation bases and chain damages.

(Ward et al. 1987).
“Study of the SCENAR impact on the steroid hormones levels and characteristics of the oxidative DNA damage in healthy volunteers”.
Studied analytes concentration deviation (average values, %) in a day.
Studied analytes concentration deviation (average values, %) in 3 weeks.

- Cortisol
- 8-OHdG
- Testosterone
- Estradiol
- Progesterone

Control
SCENAR

P<0.05
Conclusion No 1.

The study of the results of complex treatment using SCENAR therapy on the oxidative stress development in patients with acute and chronic pathology has revealed the inhibition effects on active oxygen production, suppression of the increased activity of the lipid peroxidation process in blood plasma and erythrocytes, as well as on stabilizing and normalization of the most indicators of the structural erythrocyte membrane condition.
Conclusion No. 2.

SCENAR Medical technology is intended for doctors of all specialties, who in course of their work face oxidative stress in patients:

- surgeons,
- therapists,
- anesthesiologists,
- resuscitation specialists,
- cardiologists,
- pulmonologists,
- endocrinologists,
- neurologists,
- ophthalmologists,

as well as specialists in restorative medicine of health prevention establishments and health resorts.
Multifactorial mechanism of action of SCENAR

- Development of energy metabolism
- Lipid peroxidation and free-radical oxidation inhibition
- Synaptic processes activation
- Improvement in membrane plasticity

- Antihypoxant
- Antioxidant
- Nootrop
- Membrane protector
FORMULA OF HAPPINESS

DO YOU HAVE ANY PROBLEMS?

No

Yes

CAN YOU SOLVE IT?

Yes.

No,

Now I have the SCENAR professional as well