

## SCENAR in hemorrhoid treatment

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Orthodox therapies are aimed at eliminating the cause of the disease, while most non-conventional therapies help to activate the defense mechanisms of our body on the principle of self-regulation.

To see how effective and important complementary non-conventional therapies are in treating hospital patients we have selected people with acute hemorrhoids for the study. Hemorrhoidal disease is one of the most widespread and is estimated to occur in 118-112 grown-ups out of 1000. The share of hemorrhoids in the system of coloproctological diseases is from 34 to 41%. The disease may be caused by sedentary lifestyle, long driving, excessive exercises, constipations, pregnancy, alcohol addiction, family background. There is no common treatment for hemorrhoids, each patient requires individual approach. The treatment also depends on the course of the disease and its stage.

We can divide therapies for hemorrhoids into 3 groups: conservative treatment, minimally invasive methods, and surgery. Conservative treatment is good for acute hemorrhoids, when other therapies are contraindicated, and at first stages of the disease (grade I-II). Usually this type of treatment lasts up to 2 weeks and includes topical therapies (suppositories, ointments, baths), phlebotonic medicines, antiplatelet drugs, direct anticoagulants, analgetics, and spasmolytics - classic orthodox treatment for various pathogenesis links with polypragmasy.

Therefore, we studied the effect of SCENAR on pain intensity, blood picture and biochemical indices in non-invasive therapy of hemorrhoids.

Materials and methods. We have organized unmasked randomized research in North Caucasian Railway Hospital (Bataisk). Using random sampling, we have formed 2 groups of 20 patients with primary acquired acute hemorrhoids associated with the chronic condition. The amount of patients with external and internal hemorrhoids in the groups was roughly similar. On admission patients complained of arching pain, itching, unpleasant sensations in anus (foreign body), blood in stool and straining on bowel movement, edema and hyperemia in the anal canal, low fever. According to the classification of Henry-Swasch patients referred mainly to grade I and II hemorrhoids.

Group I was control group and included 7 women and 13 men, mean age 63.2 years. Conservative treatment included special diet, general and topical analgetics, anti-inflammatory

drugs, ointments and creams, cleansing enema, phlebotonic medicines, topical hemostatics in bleeding.

Group II besides the conservative treatment also received SCENAR stimulation with spaced plate electrodes 12cm<sup>2</sup> each, at a 90 Hz frequency. We have identified 4 treatment zones and stimulated each for 10 minutes:

Zone 1 – under toes (regio plantaris pedis);

Zone 2 – thenar and hypo thenar on the palm (thenar and hypo thenar);

Zone 3 – liver skin projection (stimulation with coaxial electrode);

Zone 4 – lumbar area (stimulation with symmetrically spaced electrodes).

In each zone we set a particular energy of stimulation. Treatment sessions were administered every day for 2 weeks.

#### Results.

Quick/early pain relief is very important for a patient and very significant in disease pathogenesis. Fig. 1 shows significantly greater analgesic effect in patients from Group II already starting at the 3<sup>rd</sup> day of the treatment.

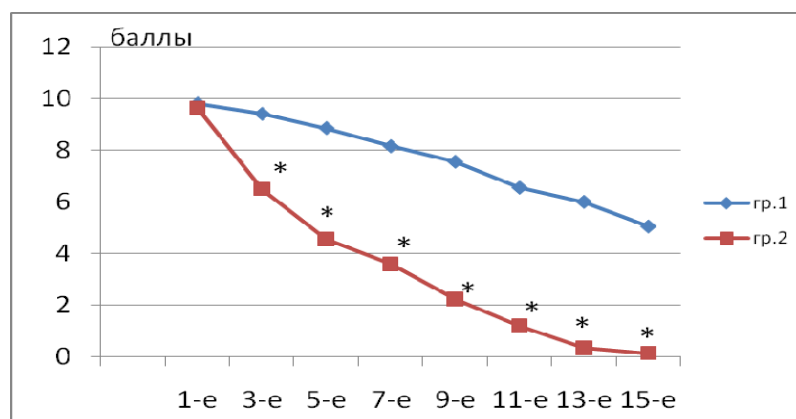


Fig. 1. Pain relief dynamics according to the visual analogue scale of patients with hemorrhoid pains (Group 1 – control, Group 2 - SCENAR). Designations: horizontal axis – follow-up period in days; \* - P<0,05.

That contributes to early activation of the patient, normalization of the defecation, decreased dosage of non-narcotic analgetics and spasmolytics, and all that makes this kind of therapy more effective and safe for patients.

Fig. 2 shows the dynamics of stimulation energy increase. We have detected one common law for all treatment zones – to get the subjective comfortable sensations (when patient consistently feels stimulation as light tingling or vibration and evaluates it as a comfortable sensation) we needed to increase stimulation energy. These data show that patients had hyperalgesia at the beginning of the treatment and increased sensitivity threshold by the end of the treatment. The

sensitivity threshold in different zones of our body is different. The most sensitive zone is palm, then goes bottom of the foot, liver projection, and lumbar.

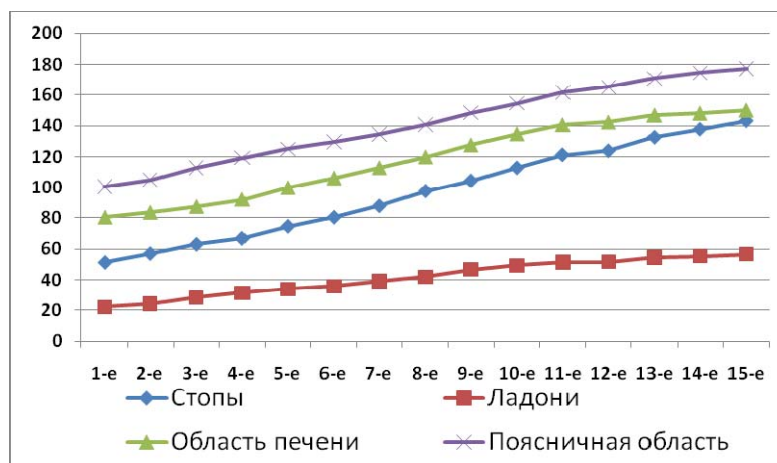


Fig.2. Dynamics of stimulation energy in different treatment zones of patients with hemorrhoids. Designations: horizontal axis – follow-up period in days, vertical axis – stimulation energy, c.u.

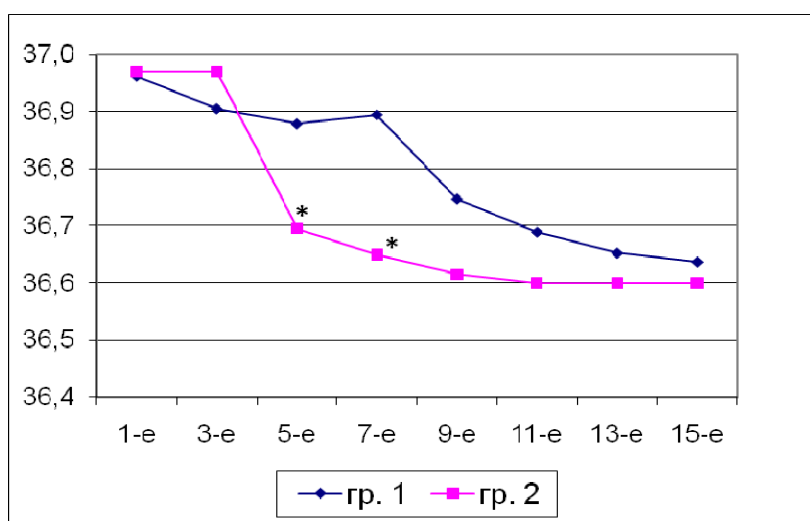


Fig.3. Dynamics of axilla temperature in treating hemorrhoids in Group 1 (control) and Group 2 (SCENAR). Designations: horizontal axis – follow-up period in days, vertical axis – temperature in degrees, C<sup>0</sup>; \* - P<0,05.

A very interesting fact is that during the treatment the patients' body temperature changed. At the beginning of the treatment subthreshold temperature of patients was about 37 C<sup>0</sup>. Though the temperature was almost close to the normal, all patients from Group 2 manifest greater and faster normalization of the temperature level already by the 5<sup>th</sup> day of therapy up to 36.6 C<sup>0</sup>.

When treating patients with hemorrhoids following the above described therapy we have traced a very interesting reaction in clinical blood analysis. It should be noted that during 2 weeks

of treatment anemia of patients reduced. In patients from the Group 2 the amount of hemoglobin and erythrocytes ( $P < 0,05$ ) was higher if compared with the patients from Group 1.

Fig. 4 and 5 show changes in the amount of white blood cells (WBC) and white blood count.

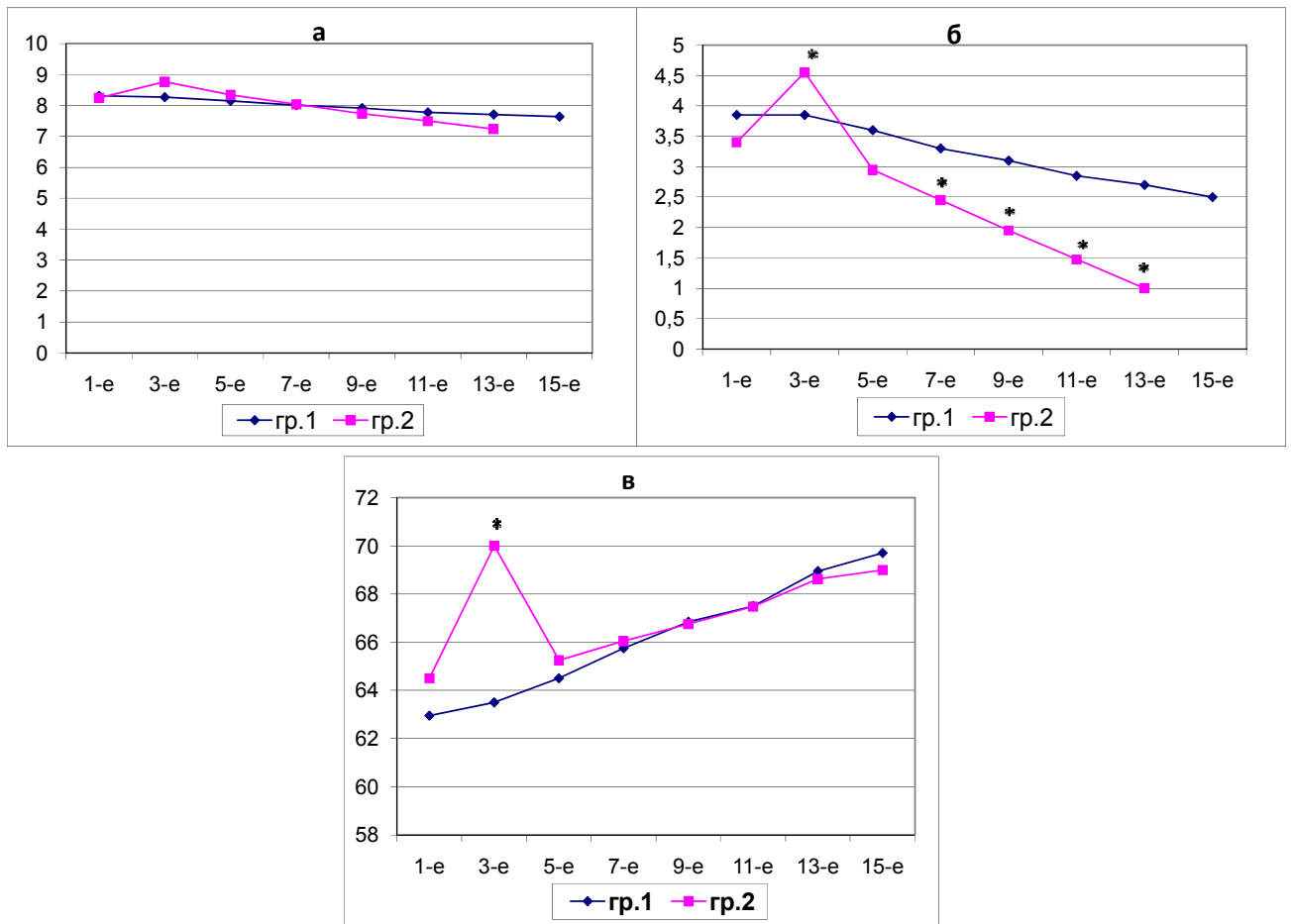


Fig.4. Dynamics of blood parameters in treating hemorrhoids in Group 1 (control) and Group 2 (SCENAR). Designations: a – white cells ( $x \cdot 10^9/l$ ), b – staff cells (%), c – segmentated cells (%); horizontal axis – follow-up period in days, \* -  $P < 0,05$ .

Fig. 4 shows that one general law becomes evident. After two sessions of SCENAR-therapy patients manifest a short-term increase in the amount of white cells and percentage of staff cells, especially segmentated cells. The amount of staff cells decreased greatly by the end of the therapy course, and it is very important for a clinical picture.

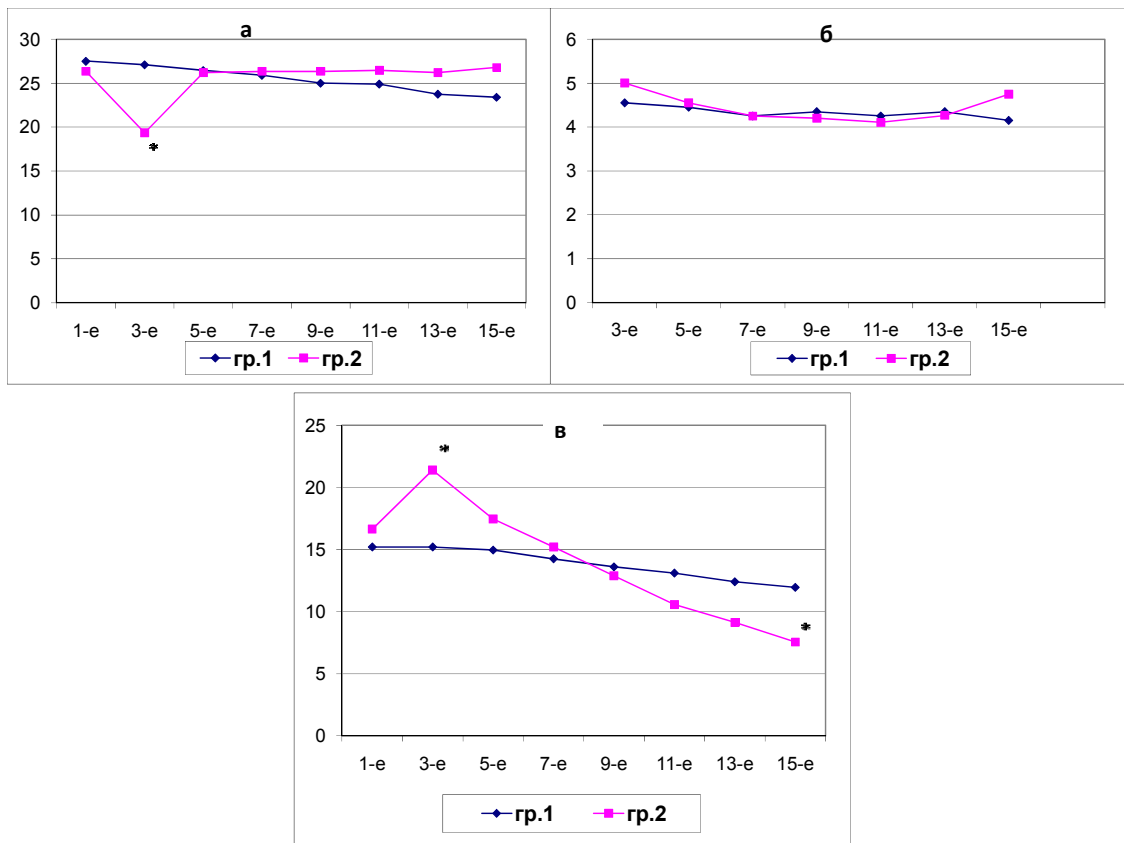


Fig.5. Dynamics of blood parameters in treating hemorrhoids in Group 1 (control) and Group 2 (SCENAR). Designations: a – lymph cells ( $x \cdot 10^9/l$ ), b – monocytes (%), c – erythrocyte sedimentation rate (mm/h); \* -  $P < 0,05$ .

At the same time parallel to the neutrophils significantly decreases the amount of lymph cells. By the end of the treatment the amount of lymph cells is higher if compared with the control group. The level of monocytes in both groups didn't differ significantly. It should be noted that the initial increased rate of erythrocyte sedimentation subsequently normalized in patients from SCENAR-group. That signs biochemical changes in the blood plasma. The level of eosinophils in Group 2 was lower than in Group 1; the level of basophils didn't differ in groups.

Such kind of reaction, accompanied by neutrophilia and lymphopenia, is typical for blood in the stress response described already by H.Selye. Two SCENAR-sessions, though the stimulation level was comfortable for a patient, through nerve pathways trigger hormonal mechanisms that are similar to mechanisms in stress. Nerve impulses from cortex, reticular formation, limbic system, hippocampus and amygdala cause complex neurohumoral activity in hypothalamus that stimulates synthesis of R-factors. Further on that contributes to the changes that we observed in the study.

So, transcutaneous neurostimulation once again shows the importance of ANS in regulation of blood formation. It could also have indirect influence on synthesis of hematopoietic cells in liver and spleen.

Analysis of biochemical parameters showed that the amount of total protein, blood sugar, amylase, creatinine, urea, alkaline phosphatase, prothrombin ratio in groups didn't differ during the treatment and after.

To demonstrate the contribution of SCENAR-therapy into the total expenses for drugs we analyzed patient charts in both groups and calculated the money spent for the drugs during the 2-week treatment course. In Group 1 the expenses were 1015.6 rubles (25 Euro) per patient, while in Group 2 they were 852.7 rubles (20 Euro) per patient.

We can analyze the contribution of complementary therapy into the treatment. Adding neuroadaptive stimulation using SCENAR into the conservative treatment of acute exacerbation of chronic hemorrhoids greatly improves and accelerates the pain relief effect. Therefore, patients manifest early activation and normalization of defecation, reduced pharmacological load and not so intensive side effects. Expenses for drugs reduce. Already two SCENAR-sessions in comfortable stimulation level cause changes in the blood parameters similar to that in the stress, and by the end of the treatment all the parameters are marked to have normalized faster.