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SCENAR THERAPY APPLICATIONS

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SCENAR-THERAPY CLINICAL EFFECTIVENESS FOR THE PATIENTS WITH TUBAL-PERITONEAL INFERTILITY

Background. Tubal-peritoneal factor occupies the first place in the structure of ethiopathogenetic reasons of infertility and it counts in about 40-60% of all female infertility cases [1, 2]. Main causes of tubal-peritoneal infertility are from inflammatory diseases (both of the bacterial and viral genesis) and adhesion formation in the postoperative period. Many researchers note that it is rather difficult to restore fertility in this group of patients even by using endosurgical methods of treatment. The registered rate of pregnancy occurring after reconstructive plastic surgery using operative laparoscopy does not exceed 21-28% [3, 4]. We can conclude that in assessing the methods of increasing the effectiveness of tubal infertility treatment and postoperative adhesive processes, progress will be determined not only by perfecting the surgical technique itself (which has reached almost 100% effectiveness in eliminating the blockage in anatomic fallopian tubes), but more than that, by the postoperative rehabilitation therapy success (which is designed to correct the impaired tube function with a restored lumen and prevent the postoperative adhesive process).

Chronic inflammatory diseases of the female pelvic organs cause systematic changes in the female body involving not only inner genitals, but almost all homeostasis links. Psycho-emotional sphere, autonomic body regulation, immunological status, gonadotropic and ovarian hormone metabolism and secretion [5,6] become involved into the pathological process. The treatment methods used appear to be unsuccessful, which is caused by the persisting principle of the predominant influence upon the organ pathology. The state of central regulation mechanisms (psycho-emotional state, autonomic nervous regulation) and a concomitant extragenital pathology character are not always taken into consideration [1,2].

So, we are looking for methods of treating the patients with tubal-peritoneal infertility, which would not only eliminate the mechanic blocking of fallopian tubes, but would also have an optimizing influence upon all homeostasis parameters.

Research objective: To evaluate SCENAR-therapy clinical effectiveness for patients with infertility from tubal-peritoneal genesis.

Methods of statistical analysis of the material: Statistical data was processed using the Statistica 6.0 program. The analysis was done using the Kolmogorov and Smornov's criterion. Actual data is presented as <average + standard deviation> (M+σ). We used Student's t-criterion for dependent groups to determine dependent samples differences reliability taking a regular distribution law. If the analyzed samples' distribution differed from the regular one, we used the Wilcoxon criterion for dependent groups. We took a critical level equal to 0.05 in our research.

Data for study and discussion

A complex examination of 111 women with tubal-peritoneal infertility (aged 29-39, (28.4 + 1.7) on average) was completed. Total infertility duration was from 1 to 15 years (8.3 + 2.1 years on average). It was discovered that 15% of patients had II degree adhesive processes, 51% - III degree, 34% - IV degree respectively. All examined women were divided into 3 groups: the first group (the control group) included women who had just undergone laparoscopy (30 women), the second group included women who had just undergone laparoscopy and SCENAR-therapy (39 women), and the third group included women who had undergone only SCENAR therapy (42 women) (the infertility factor was revealed on the uteroturbography).

The SCENAR 97.4+, 97.5 (or SCENAR-1-NT) and SCENAR-DE devices were used with vaginal probes in the treatment. The SCENAR influence was conducted according to the general rules taking into consideration the patient's clinical picture, combining and interchanging influence modes and methods in IDM and SDM, and also using SCENAR-DE with the vaginal probe. The patients from the second group were treated on the second day after the laparoscopy. The courses included 10 -15 sessions depending on their clinical picture. The patients from the third group underwent treatment in the second phase of the menstrual cycle (10-15 sessions).

Table 1. *Restoration of uterine tube clearance and the ability to conceive rate, after tubal-peritoneal infertility, dependant upon the method of treatment and infertility duration.*

	Laparoscopy (control) N=30	Laparoscopy +SCENAR N=39	SCENAR N=42
Total % of restoration of uterine tube clearance	33% (10)	56% (22)	64% (27)
Infertility up to 3 years	40% (4)	60% (6)	83% (10)
Infertility up to 3-5 years	40% (4)	57% (8)	62% (8)
Infertility more than 5 years	20% (2)	53% (8)	53% (9)
Total % of pregnancies	23% (7)	51% (20)	45% (19)
Infertility up to 3 years	40% (4)	50% (5)	58% (7)
Infertility up to 3-5 years	20% (2)	57% (8)	54% (7)
Infertility more than 5 years	10% (1)	47% (7)	29% (5)

As we can see in Table 1, the patients from the second group (51%) and from the third group (45%) achieved the best results in the restoration of uterine tubes clearance and the ability to conceive.

The mechanism of SCENAR influence upon the main homeostasis parameters were also analyzed.

The general antioxidant activity of blood serum and the intensity of free-radical acidification process using software bio-chemoluminometer BCL-06M was investigated. The SCENAR-therapy resulted in lipid peroxidation (LPO) products suppression, which produced antimitotic and cytotoxic influence upon living cells and tissues. An increase in the anti-oxidative system (AOS) activity, catalase and superoxide dismutase (SOD) enzyme and intoxication decrease (Table 2) was also observed. Given parameters depended on the fertility restoration methods.

Table 2. *AOS and LPO Status Before and After SCENAR-Therapy*

Indices	Laparoscopy (control) N=30		Laparoscopy +SCENAR N=39		SCENAR N=42	
	Before the treatment	After the treatment	Before the treatment	After the treatment	Before the treatment	After the treatment
Imax (mV)	1.986±0.013	1.945±0.234	1.942±0.272	1.785±1.194	1.965±0.172	1.878±0.136
AOS (rel.un.)	0.046±0.008	0.05±0.001	0.047±0.009	0.055±0.006	0.045±0.007	0.053±0.007
SOD (act.un./g Hb)	93.92±26.14	94.12±21.07	92.55±41.59	134.9±49.12	85.49±25.1	111.39±29.53
Catalase (act.un./g Hb)	96.31±34.78	101.56±27.32	95.41±24.53	134.32±30.89	95.45±14.68	136.05±28.06
Intoxication (rel.un.)	9.48±1.27	8.93±2.49	9.68±1.25	7.69±2.11	10.31±0.95	7.45±1.87

Note. Reliability of distinctions by t-criterion Стьюдента: between parameters before the treatment, and also between the control group and other groups, of $p < 0,05$.

After finishing the tubal-peritoneal infertility treatment, in the control group, where only laparoscopy was used, there was a 2.1% decrease in LPO activity and an 8.7% increase in blood indices. There was an 8.8% LPO activity decrease and 17% AOS indices increase in the second group (laparoscopy + SCENAR). There was a 4.6% LPO activity decrease and 17.8% AOS indices increase in the group where only SCENAR was used as a treatment.

Complex examination of the patients with tubal-peritoneal infertility included ultra sound investigation of small pelvis organs with small pelvis vessels Doppler velocimetry. Slight blood flow changes in the small pelvis vessels by Doppler velocimetry in the control group was noticed: there was only a 1.4% increase of the resistance index in the uterine arteries and a 9.5% increase in the ovarian arteries; laparoscopy + SCENAR group - 5.3% and 18.4%; the third group – 5.8% and 18.7% correspondingly.

All patients in the different groups underwent autonomic status dynamics investigation (Table 3). 100% of the women had an autonomic dysfunction before the treatment.

Table 3. *Autonomic Status Dynamics of Patients ('Me' (interquartile range), where 'Me' is a median line)*

Autonomic function (point*)	Laparoscopy (control) N=30	Laparoscopy +SCENAR N=39	SCENAR N=42
Before treatment	22 (20-31)	25 (20-28)	24 (22-29)
After treatment	22 (20-31)	7 (6-10)	10 (7-11)

*0-15 points – normal autonomic status, >15 points – dysautonomia.
Note. The differences reliability according to Wilcoxon criterion: between the indices before and after SCENAR-therapy of $p<0.05$.

Autonomic status in the second and the third groups normalized after SCENAR-therapy. The indices in the first group didn't change.

A cardio-intervalography (CIG) method in analyzing the autonomic status was also used. We analyzed CIG parameters and found that SNS tonus prevailed in all patients, and the function of the parasympathetic part decreased. Regulatory systems tension index also deviated from the norm and was considerably higher.

The autonomic tonus of the patients from the second and third groups was re-distributed by the end of the treatment. It occurred mainly due to the decrease of sympathetic ANS influence (hypersympathicotonia change into sympathicotonia or eutonia). There was no such redistribution in the patients from the control group.

The psychological state was analyzed before and after the treatment in all patients. There was marked improvement of all components of the psychological well-being index (anxiety, depression, self-control, health in general, emotional security, vital power). There was a 16% increase in the first group, 48% - in the second and 43% in the third one.

The dynamics of indices that influence the patients' lives considerably (paramenia, dyspareunia, pains in the intermenstrual period, defecation disorders) were also analyzed. The positive dynamics was more considerable in the groups where SCENAR-therapy was used as compared with the control group.

Conclusion. From the data given above, we may conclude that SCENAR therapy produces an optimizing influence upon the patients' autonomic status (decreases the sympathetic ANS part influence and activates a parasympathetic ANS part), their psycho-emotional state, hemodynamic indices in the small pelvis organs, free-radical and general antioxidant activity, which improves homeostatic indices and quality of patient's life as well as fertility restoration results.
SCENAR-therapy allows the improvement of restoration parameters in the uterine tubes and the rate of spontaneous pregnancy. Results of SCENAR-therapy both after laparoscopy operations, and without it, allow us to exclude laparoscopy as a method of fallopian tubes correction, provided that there was an absence of hydrosalpinxes and that infertility period did not exceed 3 years.

Evaluating the SCENAR-therapy clinical effectiveness for patients with tubal-peritoneal infertility it is possible to make a conclusion that it is an adequate method of rehabilitation treatment.

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 in 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.

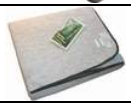
RITM SCENAR devices are CE Mark certified (the highest standard for manufacturing medical devices in the world), ISO 9001, ISO 13845.

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 accesories.

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