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COMBINED TREATMENT OF THE INFANTILE BRONCHIAL ASTHMA

It is well known, that a chronic allergic inflammation of bronchus membrane accompanied by their hyperreactivity and revealing itself clinically by repeated asphyxiation attacks lies in the basis of bronchial asthma. Using broncholytic drugs in the exacerbation period lets us relieve patients' state, but stabilizing the status often demands a longer period of time. The fact, that a lot of patients have drug allergy restricting the scope of drugs used, is also very important. Prescribing broncholytics also doesn't influence the most important pathogenetic aspects of the disease and, particularly, the processes of lipid peroxidation (LP) accompanied by accumulating abundant number of free radicals facilitating progressing bronchus membrane injury.

In this connection using physical factors of influencing central and local regulation of bronchopulmonary homeostasis, and particularly SCENAR therapy, is of great interest. SCENAR therapy is directed to the different hierarchical body levels for achieving a more evident clinical result.

The following aspects should be taken into account. There are the accepted standards of treating bronchial asthma. The insuring companies pay for the treatment proceeding from these standards. So, the treatment in state hospitals is restricted with certain limits. On the first stage of treatment, which is represented in this work, the treatment was combined.

The aim of the work is increasing the effectiveness of treatment and, particularly, improving the immediate results in the exacerbation of asthma, activating antioxidant protection, improving the distant prognosis for a disease. The problem put by is solved by carrying out an individually dosed influence of skin coverlets, which are topographically connected with bronchopulmonary system during the exacerbation period (SCENAR-97.4). The frequency was 90 Hz, general influence duration – 30-40 minutes, the course duration – 10-14 days. First 3 paths are influenced, then – adjacent regions (humeroscapular, posterior neck surface). The session is finished with influencing the sternum and jugular vein.

Before, in the process and after the course of treatment the dynamics of body reactions is taken into consideration: realizing a questioning status evaluation, investigating external respiration function determining expiration peak speed (EPS) with Peak Flow Meter, investigating LP parameters and body antioxidant systems. 12 patients with bronchial asthma were treated, taking into account their age and severity of the disease.

Let us give some examples of the concrete treatment including SCENAR therapy:

1. K.D., 13 years old, c.h. № 421, diagnosis: bronchial asthma, atopic form, severe course, exacerbation phase. On admission there was dyspnea, cough, difficult expectoration discharge, EPS decrease up to 200 l/min (N – 350 l/min). SENAR therapy was done simultaneously with broncholytic therapy (*berodual* inhalations) according to the method described above for 40 minutes daily, during 14 days. Immediate treatment results: dyspnea was arrested on the first day, EPS indices were normalized before day 4, state of health and tolerance to physical activity improved, the balance of oxidative and antioxidative systems stabilized (diene conjugate, Shiff's bases, malonic dialdehyde, superoxide dismutase). Distant treatment results: we managed to decrease inhalation corticosteroids' dose up to 250 mcg per day. There were no exacerbations of the disease.

2. G.M., 11 years old, c.h. № 2809, diagnosis: bronchial asthma, atopic form, severe course, hormone-dependent, exacerbation phase. On admission the state was severe, there was asphyxiation, no expectoration discharge, expressed anxiety, uniformly diminished breath sounds in the lungs by auscultation, EPS decrease by 3 times if compared with the norm. SCENAR therapy was carried out according to the above-described method daily (40 minutes each day, during 14 days) together with intravenous introduction of glucose-saline solution, *eufillin, prednizolon, berotek* inhalations. On the second day the patient's state considerably improved, dyspnea decreased, expectoration began to discharge, physical pattern in the lungs improved. EPS began increasing since day 3, there was no necessity for parenteral introduction of drugs, tolerance to physical activity improved.

In 12 days EPS level reached 75% of the normal, which was the best result of the last year, the indices of the body antioxidative system improved. Distant treatment results: we managed to decrease corticosteroids' dose by 30%.

3. K.D., 9 years old, c.h. № 1106, diagnosis: bronchial asthma, atopic form, severe course, exacerbation phase. On admission the state was severe, but the patient did without oxygen. He coughed with non-secreting expectoration, dyspnea, abundant sibilant rales in the lungs, EPS decrease up to 120 l/min (N – 310 l/min). Besides *berodual* inhalations via nebuliser and one-fold *eufillin* injection, the patient underwent SCENAR therapy daily (40 minutes each day, during 10 days). Dyspnea was arrested on the first day. EPS increased up to 90 l/min on the second day, by the 8th day peak exhale rate made 86% of the norm, on the 14th day there was progress in the antioxidative body system. Immediate treatment results: rapid relief of dyspnea, normalization of general status. Follow-up treatment results: inhalation corticosteroids' dose was decreased from 1000 to 500 mcg.

4. N.D., 13 years old, c.h. № 969, diagnosis: bronchial asthma, atopic form, medium-severe course, exacerbation phase. On admission the patient complained of dyspnea, restraint in the chest, inefficient cough. EPS was 68% of the norm. Besides berotek inhalations via nebuliser and expectorants, the patient underwent SCENAR therapy (30 minutes each day, during 10 days). Dyspnea was arrested on the first day, since the second day expectoration secreted better, physical weight was born more tolerably. On the third day EPS reached 100% level (390 l/min). There was no need in parenteral introduction of drugs. Indices of the antioxidative system considerably improved on the 10th day. Immediate treatment results: rapid status stabilization, arresting dyspnea. Follow-up treatment results: no disease exacerbations during 6 months.

Let us give some examples of treatment in the control group without using SCENAR therapy.

1. Ch.D., 12 years old, c.h. № 1013, diagnosis: bronchial asthma, atopic form, medium-severe course, exacerbation phase. On admission the patient complained of inefficient cough and dyspnea. EPS was 67% of the norm. Dyspnea was arrested on the third day against a background of broncholytic therapy, but on the 8th day of the patient's stay in the in-patient department there was an asphyxiation attack. There was a full expectoration only since the 4th day. We did not manage to achieve a considerable EPS increase during 14 days. There were no considerable changes in the indices of antioxidative body system.

2. P.D., 9 years old, c.h. № 665, diagnosis: bronchial asthma, atopic form, medium-severe course, exacerbation phase. Dyspnea was arrested on the third day against a background of broncholytic therapy, but there was iterated disease exacerbation after abolishing the therapy. On admission EPS was 56% of the norm, and we had managed to increase it up to 76% only by the 9th day of the therapy. There was poor physical load tolerance.

3. K.Y., 10 years old, c.h. № 1255, diagnosis: bronchial asthma, atopic form, medium-severe course, exacerbation phase. The state stabilized on the 4th day against a background of broncholytic therapy, but we did not manage to achieve a considerable EPS increase during the time of a child's stay in the in-patient department. The indices of oxidative and antioxidative body systems did not change considerably during 14 days.

Some treatment results are given in the Table 1.

Let us also point out economic effectiveness of the combined treatment of bronchial asthma: minor amount of drugs and, mainly for parenteral injection; decreasing the dose of drugs taken in the remission period and mainly glucocorticosteroids.

The suggested approach may be used in the specialized allergic departments as well as in hospitals of general profile. Compact and reliable SCENAR device gives an opportunity to work with big groups of patients.

Table 1.

Treatment results	*Control*	*SCENAR*
Arresting exacerbation	78%	94% *
The necessity of additional measures for arresting exacerbations	22%	6% *
Disappearance of respiratory failure on the first day	54%	78% *
Normalizing peak exhale rate during 3 days	66%	84% *
Normalizing peak exhale rate by the end of treatment	84%	94% *

Plasma's catalase, nmole H_20_2/ml	24,11±1,32	26,97±1,11
Erythrocytes' catalase, nmole H_20_2/mgHb	20,35±1,04	24,60±1,13 *
Schiff bases (plasma), rel.un.	1,52±0,14	1,85±0,13
Diene conjugates (plasma), nmole/ml	9,88±0,81	11,91±0,53 *
Decreasing the dose of oral and inhalation corticosteroids	6%	54% *
Rare disesase exacerbations	6%	54% *

Note: * - *difference validity by $P < 0,05$.*

CONCLUSION

1. Additional SCENAR therapy in the conditions of in-patient department lets us improve immediate treatment results considerably. Rapid dyspnea arresting, early expectoration and rapid increase of peak exhale rate testify to this fact.

2. The necessity of parenteral drug injections decreases, and it has evident advantages, while psychic traumatic load upon a child decreases.

3. If compared to the control group, there is a rapid improvement of patients' general status, increase of their physical activity and consequently the quality of life.

4. Follow-up treatment results improve (the frequency of disease exacerbations lowers, the dose of inhalation and oral glucocorticosteroids taken in the interictal period of the disease).

5. Antioxidative body system is activated, and it prevents the disease from progressing pathogenetically.