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Efficacy of halotherapy in asthma patients

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Introduction The experts of WHO forecast the subsequent increase of allergy and asthma worldwide. Mainly it has been related to deteriorative ecologic situation. To stop this

tendency aerosol methods with physical factors are preferable because of physiological action without system side effects.

Dry salt inhalation therapy has a long history in Europe since 19th century. Nowadays there are a number of resorts exploiting salt caves for patients with pulmonary diseases. Halotherapy (HT) is the result of adapting natural salt aerosol from salt caves to flexible usage in other locations. Curative effect of HT is caused by an air medium saturated with dry sodium chloride aerosol (DSCA) with predominance amount of particles of 1 to 5 μm in size and of a certain density range. HT is carried out in the premises equipped with medical facilities - dry salt aerosol generators (halogenerators) and control devices.

Over 15 years, numerous expert groups have worked on standardization of halochambers based on an exact understanding of conditions in salt caves. In addition to availability the ability to deliver a specified varied dose of DSCA represents a major advantage of HT over the treatment in natural salt caves. HT was sanctioned by the Ministry of Public Health in Russia and Lithuania.

Material and methods The randomized placebo study lasted for 12 months. Controlled HT was evaluated in 115 patients (pts) with asthma (37 males, 78 females, mean age 41.2 ± 2.2 years). 60 % of pts received a base medication without a full effect. DSCA with the dominating amount of 1 to 5 μm particles was produced by halogenerator ASA-01.3 (Aeromed Ltd.). Treatment was performed in a special room with salt coated walls. The pts breathed quietly while reclining in the chairs. The DSCA course comprised 15-20 daily one hour procedures. The duration of each course and density of aerosol medium (from 1 to 5 mg/m^3) depend on clinical features of asthma and functional parameters. The control matched group of 95 pts (30 males, 65 females, mean age 39.4 ± 1.5 years) received placebo. Placebo course consisted of 15 procedures of musical psycho-suggestive program in the same room with salt coated walls but DSCA was not produced by halogenerator.

Results During HT most pts showed positive dynamics of symptoms indicative of a better drain function of their airways : sputum secretion alleviated, it became less viscous and more mucousal, coughing relieved, and the auscultative picture of the lungs altered. By the end of the course of HT, the number of asthma attacks decreased significantly as compared to the initial ones (94 and 56 %, $p < 0.01$). The number of severe asthma attacks controlled by combined medication also decreased (24 % and 3 %, $p < 0.01$). After HT inhaled corticosteroids were discontinued in 5 % of pts. In 40 % of pts it was possible to reduce the dose. Those were the cases when inhaled corticosteroids were prescribed as anti-inflammatory agents. Dynamics of beta-agonists usage was positive as well. Reduction or cancellation in medication usage was an indicator of HT clinical benefit. None of the pts complained of bad condition during HT procedures. The pts showed significant increase of FVC, FEV1, PEF, FEF50 and decrease of Raw by the end of the treatment. HT resulted in improvement of clinical state in 85 % of mild and moderate asthma cases, 75 % of severe asthma cases. The pts were examined 6 and 12 months after the HT course. The average duration of remission was 7.6 ± 0.9 months.

The inclusion of HT into the rehabilitation course of asthma pts allowed achieving therapeutic effect in 82–95 % of cases along with the most optimal use of pharmacotherapy. It has shown that the application of the HT assured 1,5-2 times reduction of morbidity level in long term observation. The changes of the majority of the clinical and functional parameters in the control group were less statistically as compared to the HT group's ones.

Conclusion The application of HT on the background of the basic medicinal therapy in pts with asthma renders to positive influence on the clinical and lung functional parameters. The results of HT application demonstrate its efficacy.

We look at positioning of dry sodium chloride aerosol with controlled HT as a component of rehabilitation programs for asthma pts.

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