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# EFFECT OF CLIMATE THERAPY AND REHABILITATION IN MÁTRA MEDICAL INSTITUTE

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**Abstract:** Our research we organised at the Mátra Medical Institute in Mátraháza and Kékestető among sick of asthma, COPD and hayfever. Our aim was to prove the effect of climate therapy in the Mátra Medical Institute. The subalpine climate to plays a very important role in the cure of the Respiratory diseases, because to improve the life quality of the sick and reduce the medicine uses after the therapy. Our research took part more than 100 respiratory diseased. We analyse the data with SPSS.version 16. We measure average, standard deviation, Chi<sup>2</sup> probe, t-probe. You can see our results in the article.

**Key words:** asthma, pulmonology illnesses, climate therapy, life-quality

## Introduction

The asthma of all ages is a serious public health challenge worldwide. Asthma is the 25<sup>th</sup> reason included in the Disability Adjusted Life Years ranking in 2001, prevalence and quality of life and the impact of health spending under considerable pressure and gives the task of doctors working in primary care as well.

Nearly 300 million people are concerned worldwide, prevalence is observed between 1–18%.

Determining the prevalence of asthma in a wide repertoire of domestic literature (Nagy et al., 1997; Mora, 1998; Gönczi, 1998; Páll et al., 2001; Virágh, 2004).

Hungary, a significant increase in asthma over the last few years. In 2005, 196 thousand were number of asthmatics registered in the network of lung clinic and while it was only 78 thousand based on historical data 10 years ago (Somfay, 2007).

The number of getting asthma rising with 18,000 every year. Outstanding is the rapid increase in the number of children with asthma. Examining each group of ages, cases of the 20–30-year-old all makes up 1/5 of all patients.

County Zala and Fejér and lead the distribution of number of asthmatics, while in Borsod-Abaúj-Zemplén and Pest County are less "infected" counties. This figure is much worse, if we check the asthma, together with changes in the number of patients of hay fever and bronchitis treated since 2000 from 390 to 650 thousand in 2006, an increase in the number (CSO, 2006).

The use of natural curative factors gets special attention to diseases in both domestic and international context, which could cost the drug treatments. The treatment of respiratory diseases, a number of useful medicinal factors: climate, salty air of the cave or the beach.

Mátra hospitals is the only sub-alpine air medical institution in our country where in treatment of the asthmatics, COPD patients and hay fever patients climate impacts were added to the medicinal and the movement-therapy treatments good results have been achieved in improving the quality of the patients' life and their needs of medicine. Mátraháza unit is about 700 m the unit Kékestető is 1000m above sea level. On this is height the house dust mites cannot live and the ragweed occurs extremely rarely. The clean air, dust and pollen free environment are extremely favourable conditions for the health institution. These are also favourable conditions for the use of respiratory diseases, as they are popular practice spots for cure-terraces, Terra cure and the respiratory route.

## Literature review

The affect of climate on healthy and sick people has been dealt for a long time. Genersich Andor, Hungary's chief medical director, opened the first 300-beds lungclinic in 1932 on 15 June. Official name: Hungarian Mátra (Royal), Miklós Horthy hospital. The Director of the Institute defined climatology that it deals with all the effects of the wider meteorological factors in living organisms. Based on his empirical experience he found that tuberculosis gets better and recover quickly with a certain climate. (Genersich, 1932).

Several international researches report the possibilities of high-mountain climate therapy. Mátraháza is known as „The Hungarian Davos”. Skiplaces of Switzerland, like St. Moritz, Davos, Arosa, Saas Fee, Pontresina and Interlaken, function as skiplaces in winter and climate medical holiday home in summer. The first lungclinic was in Davos. The mountain

climate, clean air and plenty of sunshine seemed to ensure all main ingredients that were needed for the treatment of tuberculosis before effective therapy treatments. Davos means attraction for the growing number of people suffering with asthma, other allergic diseases and atopic skin disease. There are currently more than 14,000 patients treated every year who came from Switzerland, Germany, the Netherlands and other countries here. The main aim of the Swiss Allergy and Asthma Research is to start an overall study to made the immune system and its controlling more understandable. (Kurt Blaser; 1989).

According to the researchers conducted high-altitude climate therapy it is a very accepted method, which improves the clinical symptoms of asthma. The climate therapy reduces airway inflammation and regulates the lymphocytes (lymphocytes) activity (Karagiannidis C. et al., 2006), which is also an international research report.

Previous studies (Müller-Kerényi, 2009), performed by the Medical Mátrai treated 50 patients with asthma, allergy and COPD showed that after the first month of the treatment of the examined patients' suffering the 3 types of disease needed significantly less medicine, than a half year later.

## Materials and Methods

September–October 2009 launched a research in the circle of asthma, hay fever patients and COPD patients in a medical background. Pest Anna chief medical officer, internal medicine, pulmonary rehabilitation specialist, and. Peter Kenyeres Dr, chief medical officer, anesthetist took part in it from Mátrai Medical Centre.

With our research we aim to prove that two units of Mátra hospitals in Mátraháza and Kékestető play a significant role in treating patients with respiratory problems, improving quality of life of patients and reduce the needs of medicine.

Ask questions:

- How are asthma and allergy healing and the quality of life coming out after a medical treatment completed with climate therapy in the institution of Mátra and Kékestető hospitals?
- What factors affect patients to choose institutions?
- What is patient satisfaction like?

Hypothesis:

- After hospitalize asthma, allergy and COPD patients their quality of life improved and their needs of medicine reduced. After the hospital treatment the effect of treatment reduces with time.

From 2009 October 2010 until January in the institution, the patients with asthmatic and allergic symptoms filled out questionnaires, which, was internationally standardized, based on St. George life quality (simplified by Professor Somfay) and Asthma Control test. In the questionnaire was used both closed and open questions. The questions have been done alternative answers, which facilitated the completion of the questionnaire. The medical questionnaire

measurements (BMI index, FEV1, FEV1/FVC, 6-minute walk test) was added.

The internationally validated Asthma Control Test (ACT) and the also validated St. George life quality test were used, completed with other issues as well. The part of these issues were questioned about the social-demographic data of patients, smoking habits, continuing physiotherapy, development of the medicine demand after the 6-month interwall treatment of the institution.

Primarily analysed the life quality of asthmatic patients, COPD patients and hay fever patient.

The results of a questionnaire processed by the SPSS 16.0 software. Expected average, standard deviation, median and Mode values were calculated. The examination of coherence the Pearson Chi<sup>2</sup> test was used.

A sample:

In the main study, 113 (male n = 19, female n = 94 persons) respiratory patients were participated who had been treated more in the Mátrai Medical Institute. The questionnaire was filled out by every fifth patient, who were treated asthma, rhinitis or COPD disease from September of 2009 til January of 2010 the department of pulmonology hospitals Mátra.

35.4% of the patients were in Mátraháza, while 74.6% of them were in Kékestető for 3 weeks. The 16.9% were male, 83.1% were female of the survey respondents.

14.2% of the respondents live in the villages, 31% in town, 30.1% in county and 24.8% live in the capital city. Mátra hospital has nationwide authority, which was included in the sample of patients as evidenced by residence because all regions were represented.

The average age of the patients was 61.54 years (SD = 9.489), and therefore the 76.9% of the patients were retired. Among the free time activities of the patients were not found anything, which would be heavy physical stress or high load to them. Typical recreational activity were the followings: reading, watching TV, rebus, needlework, hiking.

72.6% of the patients (82 persons) were asthmatic, 33.6% (38 persons) were hay fever patient and 37.2% (42 persons) had COPD disease were diagnosed and treated. The most commonly occurring respiratory disease was the asthma then the COPD and the lowest the hay fever patients. In the sample 14 people were participated who have asthma and COPD disease together, 35 people had allergic asthma accompanied hay fever and the 4 people main who had COPD disease and hay fever were at a time.

## Results and Discussion

The motivation was questioned of choosing institution. For this question, we have more alternatives and the patients could mark more than one. 91.2% of the respondents (103 people) mainly visited the institute because of the healing, the same, 103 (91.2%) people because of the climatic spafactor. Therefore the most of patients know the climatic, spafactor. Thus, the considerable history, the good reputation,

the developments of the last decade, and the well-introduced brand in the home healthcare market resulted the very high proportion of recurrent patients. Physician's recommendation was a determining factor, which was marked by the 68.1% of the patients (77 persons). 68.1% of the patients (77 persons) marked the previous positive experience, which motivated choosing the institution.

| Activities     | The formation of the average and deviation values of the certain functions compared the 1-6 months after the treatment in Mátraháza or Kékestető |                       |                       |                       |                       |                       |
|----------------|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                | 1. month average (sd)  | 2. month average (sd) | 3. month average (sd) | 4. month average (sd) | 5. month average (sd) | 6. month average (sd) |
| Walking        | 0,23 (0,50)  | 0,37 (0,657)          | 0,6 (0,688)           | 0,99 (0,785)          | 1,35 (0,894)          | 1,58 (0,864)          |
| Stair climbing | 0,63 (0,734)   | 0,82 (0,782)          | 1,13 (0,829)          | 1,42 (0,863)          | 1,64 (0,887)          | 1,77 (0,886)          |
| clothing       | 0,20 (0,446)   | 0,23 (0,463)          | 0,35 (0,563)          | 0,50 (0,709)          | 0,67 (0,881)          | 0,76 (0,909)          |
| Washing        | 0,19 (0,454)   | 0,19 (0,460)          | 0,31 (0,552)          | 0,50 (0,683)          | 0,63 (0,804)          | 0,69 (0,727)          |
| Shopping       | 0,41 (0,727)   | 0,50 (0,746)          | 0,76 (0,805)          | 1,12 (0,825)          | 1,41 (0,852)          | 1,50 (0,888)          |
| Housework      | 0,40 (0,688)   | 0,50 (0,698)          | 0,89 (0,828)          | 1,20 (0,836)          | 1,50 (0,836)          | 1,58 (0,863)          |
| Working        | 0,50 (0,733)   | 0,63 (0,734)          | 0,96 (0,828)          | 1,29 (0,831)          | 1,58 (0,843)          | 1,63 (0,858)          |
| Hobby          | 0,14 (0,351)   | 0,16 (0,369)          | 0,32 (0,524)          | 0,54 (0,721)          | 0,71 (0,841)          | 0,76 (0,841)          |

**chart 1.** The disease is confined to the core activities of the extent of hospital treatment after compared 1 – 6 months

In the chart, can be observed that after the hospital treatment in the first month in almost all activities, the average low is between 0 and 1, which means that patients in the hospital treatment after the first month the illness were not or only slightly limited in the everyday activities and work. 6 months later, the averages have increased, which indicates the reduction of the impact of the treatment and their illnesses or symptoms are more limited in the above named activities.

The results of the hospital treatment after the first and sixth months were compared with two-sample t-tests, and walking, climbing stairs, dressing, washing, shopping, housework, working and hobbies showed a very strong significant difference ( $p < 0.001$ ). Thus, demonstrated that after the therapeutic treatment in the Mátra Medical Institute for (medication, physiotherapy and breathing exercises) in the first months the asthmatics, allergy and COPD patients could more easily carry out the test activities, then after the treatment in the sixth month. This fact is important because doing these daily activities without limits ensures the patient's convenience and significantly affected of the quality of life.

After the complex therapy not only the patients life quality was better, but also decreased the medicine demand. The results after the first and the sixth month of hospital

treatment were compared with o two-sample t-tests and significant differences were experienced:

- o After the first month of hospital treatment the demand of Steroid and Medrol of COPD patients was less than after the sixth month. ( $t = -3,767$   $df = 41$ ,  $p = 0,001$ ).
- o After the first month of hospital treatment, the Allergic rhinitis (hay fever) patients took less allergy medicine then after the sixth month it increased significantly ( $t = -3,582$   $df = 37$ ,  $p = 0,001$ ).
- o After the first month of hospital treatment, the Allergic rhinitis in (hay fever) patients used less nasal spray than after the sixth month. ( $t = -3,822$ ,  $df = 37$ ,  $p = 0,000$ ). The results shows a very strong significant difference ( $t = -3,822$ ,  $df = 37$ ,  $p = 0,000$ ).
- o After the first month of hospital treatment, the asthmatic patients used is less inhalative device (Ventolin, Berodual, Berotec) than after the sixth month ( $t = -9,815$ ,  $df = 81$ ,  $p = 0,000$ ).
- o After the first month of hospital treatment the patients used less steroids ( $t = -2,840$ ,  $df = 81$ ,  $p = 0,006$ ) and intravenous injection ( $t = 1,997$ ,  $df = 81$ ,  $p = 0,049$ ) than after the sixth month.

These data partly confirm that the personal hospital treatment, climate therapy of Mátraháza added, significantly improves the life quality, health status of asthmatic patients and reduce the medicine demand. The research results confirm that the investigations being continued with more people under treatment.

## Discussion

Treatment of asthma went through significant improvements in the last few years. Today, the inflammatory nature of asthma proven and accepted fact. Therefore the steroid-contained antiphlogistics play important role in the treatment of asthma. These drugs are very expensive and it sets a significant burden on individuals and society as well, because of the growing number of asthmatics.

The medicine demand can be significantly reduced by hospital treatments, climate and movement therapy, which were justified by the examinations of patients who were treated in the Mátra Medical Institute.

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