

## EFFECTS OF PULMONARY PHYSIOTHERAPY IN PATIENTS WITH BRONCHIAL ASTHMA

A. Żebrowska<sup>1</sup>, G. Osiadło<sup>2,3</sup>, M. Plewa<sup>2</sup>, Z. Nowak<sup>2</sup>

<sup>1</sup>Department of Physiology and Medical Science and

<sup>2</sup>Department of Bases of Clinical Physiotherapy, The Jerzy Kukuczka Academy of Physical Education in Katowice, Poland;

<sup>3</sup>Regional Ambulatory Allergy Clinic in Katowice, Poland

**AIM:** To verify the effectiveness of breathing exercises, especially the effects of 3-month physiotherapy program, we analyzed the results of spirometric indices in patients with mild and moderate bronchial asthma. **MATERIAL & METHOD:** The study group consisted of 28 bronchial asthma patients (mean age of 43 years) of Regional Ambulatory Allergy Clinic in Katowice. The physiotherapy program consisted of 45-minute exercise session, performed twice a week for the duration of 3 months under supervision of physiotherapist and of home exercise program. The program consisted of breathing exercises of moderate intensity, expiration techniques such as pursed lip breathing and diaphragmatic breathing exercises in various body positions and during walking. Both before and after the 45-minute session, and at the beginning and at the end of 3-month physiotherapy program, we measured flow-volume-loop (FEV<sub>1</sub>, FVC, PEF, MEF<sub>50</sub>) with the use of LUNG TEST - 1000 spirometer. Additionally at the same time patients measured their personal best PEF (PEF<sub>2</sub>) with the use of peak flow meters. **RESULTS:** Insignificant drop of spirometric indices was noted after 45-minute exercise session both at the beginning and at the end of 3-month physiotherapy program ( $p > 0.05$ ). The drop of PEF<sub>2</sub> value after 45-exercise session was significant before the program (355.6 vs 335.2 [l/min];  $p < 0.001$ ), yet not considerable after its completion (399.3 vs 392.6 [l/min];  $p > 0.05$ ). Spirometric indices FEV<sub>1</sub>, FVC, PEF, MEF<sub>50</sub> did not change significantly after the 3-month program of regular breathing exercises, yet again the change (increase) of PEF<sub>2</sub> value reached the level of statistical significance when we compared the values obtained both before (355.6 vs 399.3 [l/min];  $p < 0.001$ ) and after the 45-minute exercise session (335.2 vs 392.6 [l/min];  $p < 0.001$ ). **CONCLUSIONS:** The observed decreasing tendency of spirometric indices just after the completion of 45-minute exercise session most likely results from the after-exercise fatigue in respiratory muscles. The period of 3-month physiotherapy program did not bring any satisfactory results, but on the other hand, we did not observe any exacerbation of the disease among the patients, what positively verifies the need for pulmonary rehabilitation and its continuation in the course of bronchial asthma treatment. It should be emphasized that pharmacological treatment comprises the essential element of medical care for bronchial asthma patients and that pulmonary physiotherapy only helps to alleviate its symptoms and side-effects. It may be assumed that effects of physiotherapy treatment are affected by patient's attitude and the severity of the disease (daily changes and seasonal exacerbation).