

## Summary

SpiroTiger is a Swiss modern method of therapy and respiratory muscle training by Prof. Boutellier et al. A new special device, that bears the same name, is used in this method. Its work depends on the forced respiration of high pressure carbon dioxide (*isocapnic hyperpnea*). SpiroTiger is the only device that provides constant training against low resistance, while the other devices provide only interval training against high resistance that improves the strength of muscles responsible for breathing. Patients suffering from lung cancer were included in the research. It took place in the Department of Chemotherapy in Brzozów Oncology Center. 104 patients took part in the research. In the study group, 52 patients received SpiroTiger training, whereas the control group including 52 patients performed standard breathing exercises. They performed the same sets of exercises at home. Spirometry, 6MWT, QLQ C30 and LC13 were used to analyze the effectiveness of the therapy.

The aims of the research were:

- The assessment of the therapy's influence on respiratory parameters.
- The evaluation of the given therapy on the 6MWT.
- The analysis of the dependence between breathing parameters and 6MWT.
- The analysis of the influence of the physical function, clinical stage and age on the patients' efficiency in the study group.
- The comparison between the traditional methods and SpiroTiger used among the patients suffering from lung cancer.
- The analysis of the influence of the used methods on the quality of life.

Conclusions:

- The improvement was reported in FVC i FEV<sub>1</sub> in both groups. However, the results were much better in the group that received the respiratory muscle training and it was statistically significant ( $p < 0,05$ ).

- Extended distances in the study group could be seen in 6MWT ( $p < 0,05$ ).
- In both groups, the distance in 6MWT was extended thanks to the improvement in breathing parameters (FVC, FEV<sub>1</sub>).
- Physical function, clinical stage and age did not exert significant effect on the improvement in patients' efficiency in both groups.
- It was demonstrated that SpiroTiger was more effective in comparison with the traditional methods.
- It was reported that the quality of life in both groups improved. It was noticed in the level of patients' fatigue and pain in the study group. Better functioning in both groups was reported.
- Analysing the effectiveness of SpiroTiger, it is advisable to continue the research on the larger group of patients suffering from lung cancer