

## Abstract

**Introduction:** In most countries in the world, breast cancer is the most frequent type of cancer diagnosed for women. A key factor that positively influences the prognosis of patients is physical activity, ideally supported by nutritional intervention. Adequate physical activity has a beneficial effect on increasing overall fitness and prolonging life of patients in the metastasis stage, especially in the subgroup of HER2+ patients. Furthermore, physical activity also improves the mental condition of patients.

**Aim:** The aim of this research is to describe the effect of nutritional and physical exercise intervention for generalized breast cancer patients. The effectiveness of the interventions evaluated was based on the data from body composition measurements and the physical fitness test that was performed for the patients.

**Methodology:** Data for this research was collected as a part of the ONKO-FIT program, which was created in co-operation with the Oncology Clinic of the General Teaching Hospital in Prague and the 1st Faculty of Medicine. The duration of this program was set for 3 months. The program was executed by 24 patients. Data was completely collected and evaluated for 13 of those patients. The patient's age range was from 39 to 57 years, with an average of  $47 \pm 6$  years and the time since diagnosis was  $7 \pm 6$  years. The patients were provided with personal consultations with a doctor, a physiotherapist, and a nutritional therapist. As part of the program, patients were offered group exercises and Nordic Walking. These activities were aimed to increase the physical fitness of the patients.

**Results:** Over a period of 3 months, there was a change in the body composition of patients and their physical fitness level increased. The entire group of patients showed a statistically significant decrease in weight, fat tissue and they also increased their physical fitness level, which was measured by using the six-minute walking test. The results were statistically significant at the 5% significance level. For weight, there was a decrease from the value of  $79.7 \pm 20.7$  kg to  $77.1 \pm 20.1$  kg and for adipose tissue, a decrease from the value of  $30.8 \pm 15.4$  kg to  $29.0 \pm 15.6$  kg. In walking tests, the entire group of patients improved from the distance of  $534.2 \pm 64.8$  m to  $561.2 \pm 36.2$  m, and in patients with a BMI (Body Mass Index) over  $27 \text{ kg/m}^2$  there was a more significant improvement from the  $514.2 \pm 45.2$  m to  $556.8 \pm 32.5$  m.

**Conclusion:** The results of this research support the theory about the benefits of physical activity and nutritional intervention in generalized breast cancer patients.