

*Niewiński H., Kania A.*

**ANALYSIS OF BODY COMPOSITION AND PHYSICAL ACTIVITY OF PATIENTS  
DURING HOSPITALIZATION IN DEPARTMENT OF PEDIATRIC  
ONCOLOGY AND HEMATOLOGY**

*Scientific supervisor: MD, PhD Sawicka – Żukowska M.  
Department of Pediatric Oncology and Hematology  
Medical University of Białystok, Białystok*

**Relevance.** Oncological diseases are connected with diminished physical activity in patients. Prolonged hospitalization, immobilization, disease itself, metabolic disorders, depression and many others are the reasons for lower activity rate in oncological patients. This condition is not only observed in adult patients, but also in children. Consequences of low physical activity during treatment are persistent and influence the quality of life of cancer survivors.

**Target:** the aim of the study was to evaluate physical activity and body composition of children hospitalized in Department of Pediatric Oncology and Hematology.

**Materials and methods.** We analyzed physical activity (PA) by 3-day observation of walked steps in 61 patients (33 boys) during antineoplastic treatment. Control group was composed of 73 children (40 boys) hospitalized in the department for other reasons rather than oncological, which didn't influence physical activity. We used pedometer to count steps, distance and time of activity. In every patient we analyzed body mass index (BMI, kg/m<sup>2</sup>), percent of body fat (PBF,%) and skeletal muscle mass (SMM, kg) – we used bioelectrical impedance analysis.

**Results and its discussion.** Children during oncological treatment demonstrate lower level of PA compared to the control group in every day of observation ( $p < 0.05$ ). In examined group median of number of steps was 1023 in day 1, 1287 in day 2 and 1888 in day 3. In controls – 4303, 4733, 4556 respectively. Distance in km and time of activity every day of observation was statistically higher in controls than in oncological patients (day 1: 2.29 vs 0.6 km, 31 vs 11 min; day 2: 2.88 vs 0.65 km, 33 vs 15 min; day 3: 2.77 vs 0.92 km, 32 vs 13 min;  $p < 0.01$ ). BMI and PBF were statistically higher in patients during antineoplastic treatment (41% vs 16.4%, 66% vs 30% was above the norm;  $p < 0.01$ ). 41% vs 35.6% in control group has SMM below the norm ( $p = 0.09$ ).

**Findings.** Low level of physical activity in children during antineoplastic treatment is very concerning. Interventional programs based on physical activity adjusted to the disease, treatment, and age should be introduced to pediatric oncology as a part of the therapy.