

ABSTRACT

Childhood obesity is currently considered a serious pediatric problem. The main risk of this metabolic disease lies in the shift of comorbidities associated with obesity to ever younger age categories. This is also related to the increasing overall cardiometabolic risk in these obese individuals. Early detection and treatment of childhood obesity is an essential task of pediatrics. The possibility of non-pharmacological treatment of childhood obesity is spa treatment. It consists of intensive reduction therapy, which includes nutritional, physical and educational interventions.

The aim of the study was to monitor changes in anthropometric and biochemical parameters after monthly treatment in pediatric patients. Furthermore, to identify and specify selected potential markers of cardiometabolic risk that significantly correlate with BMI and could be useful in children and adolescents. The thesis also focused in detail on two adipocyte hormones - leptin and adiponectin, which already correlate with the amount of adipose tissue in the pediatric population. These hormones could become significant predictive parameters of metabolic syndrome, subclinical atherosclerosis and other comorbidities associated with obesity and cardiovascular risk, already in children.

Based on our measurements we can confirm the overall success of the treatment. There were statistically significant changes in all monitored parameters. The monitored markers of CM risk were increased in children and their positive correlation with weight reduction was verified. They can be considered as potential predictive parameters of CV risk in children. Leptin and adiponectin concentrations were elevated/reduced in obese children. Their input values correlated with weight decrease, the best correlation was confirmed for the L/A ratio and the BMI reduction. According to our study, the L/A ratio can be considered as a potential parameter for predicting the success of non-pharmacological treatment of childhood obesity.