

Obesity is multifactorial disease. Genetics factors participate in its origin of 40–70% (Barsh et al., 2000). Incidence of obesity is associated with a number of complications, which affect quality of life and abbreviate its length. It is projected in constantly younger age and its prevalence in the world grows. Even though several hundred genetics markers associated with obesity have been described, we still do not know all causes, which complicates efficiency of treatment.

Subject of this study was research of selected genes and their polymorphisms: *FABP2* (rs1799883) and *PLIN* (rs1052700 and rs894160). The aim was to establish association between genotypes and antropometric and biochemical parameters related to obesity in group of 299 children and adolescents aged 7–18 years. Next goal was to establish whether these polymorphisms affect success of reduction therapy. SNP associations with antropometric and/or biochemical parameters were evaluated for boys and girls separately.

Observed genotype frequencies between sex did not differ and they were in accordance with those explored in other populations. In rs1799883 polymorphism neither association with measured anthropometric and biochemical parameters nor effect on weight loss during reduction therapy have been found. The TT homozygote subjects of polymorphism rs1052700 had significantly higher BMI and other anthropometric parameters at the initial measurement. Was also observed a slight effect on biochemical parameters of glucose metabolism. In girls with TT genotypes were confirmed lower decrease of fat mass after reduction therapy, in boys there was significant decrease of fat free mass. In boys, there was also a greater reduction in insulin levels and HOMA-IR. Effect of polymorphism rs894160 on the parameters at the beginning of the measurement was confirmed only in boys. Conversely, we observed only in girls the signifiant impact of minor A allele of rs894160 on the resistance to reduction therapy.