Abstract

Child growth is a multifactorial process combining the influence of the polygenic form of inheritance and the influence of the environment in which the child grows up. The socio-economic level of the state and family is a determining factor in the rate of use of genetic growth potential. During the 20th century, the living conditions improved and the average population height increased, so-called secular changes. Negative trends in the lifestyle of today's society tend to grow rather restrictively. The sedentary lifestyle, along with the prevalence of overweight and obesity in current children, changes their growth profile, especially during puberty, and turns the secular trend of the height in the opposite direction. Growth is also a sensitive indicator of the health condition of a child. Serious diseases of the chronic and systemic character inhibit growth. Growth retardation also develops in some endocrinopathies, particularly in growth hormone deficiency and thyroid hormone deficiency. The auxological picture of these diseases is very similar. Differential marker is the only difference in the severity of delay ossification of carpal bones and long bones when assessing bone age from the X-ray of the hand and the distal forearm. The diagnostic logistic regression model, based on the definition of this difference, was applied to a sample of patients with growth restriction. The results of the diagnostic ability of the model were characterized by a relatively low selectivity of capture of hypothyroidism but a high diagnostic specificity.

Keywords: growth, secular trend, growth disorders, bone age, diagnostic model