MODERN MEDICINE AND PRACTICE
https://inovatus.es/index.php/ejmmp
EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE
Vol. 3 No. 11 (Nov - 2023) EJMMP ISSN: 2795-921X

ANTHROPOMETRIC INDICATORS IN CHILDREN OF THE FIRST AND SECOND PERIOD OF CHILDHOOD WITH CEREBRAL PALSY

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Introduction. Disorders of growth and nutrition are common health problems in children with cerebral palsy (CP).(1) Alterations in overall growth, such as obesity and malnutrition, still represent challenges when caring for children with CP, both for pediatricians and specialized teams. These nutritional deficiencies can add losses to motor and cognitive development, socialization, psychological function, use of health services and need for hospitalizations, and overall health in individuals who already have problems in all these areas.(2) The investigation of these growth disorders depends on advances in the available nutritional assessment methods to meet the challenges inherent in anthropometry in children with CP.(3) In general, health teams use reference measures for populations with no neurological deficits, which are not suitable for children with CP.

Studies to define methods and specific references more appropriate to assess growth in individuals with CP have been performed in recent years, and the improvement in the knowledge and practice of nutrition rehabilitation measures have led to increased survival in CP.(4) Specific and descriptive growth charts and other ways of measuring body composition provide information that can help teams through early identification of nutritional and metabolic problems of growth so that effective intervention can be provided.(5,6) However, most of these studies were conducted in developed countries; studies evaluating nutritional status in CP in developing countries are scarce.

Thus, adequate anthropometry is very important to provide adequate and individualized nutritional counseling, as well as to provide better quality of life for children and adolescents with CP and their families. Based on these aspects, this study was designed to describe the nutritional assessment of children with CP, verifying the agreement of specific growth curves for CP with general curves, as well as assessing the presence of digestive manifestations associated with nutritional problems.

Purpose of the study. To study the anthropometric indicators of healthy children of the first and second period of childhood and compare them with the data of children with cerebral palsy.

Material and research methods. The research material was children with cerebral palsy who were treated at the Republican Children's Psychoneurological Dispensary and at the Bukhara Regional Psychoneurological Hospital (415 children, of which 217 boys and 198 girls). The control group consisted of practically healthy children in kindergartens and school students in Bukhara (720 children, of which 390 were boys and 330 were girls). A total of 1135 children aged 3 to 12 years were examined. Studies of children with cerebral palsy were conducted in hospital emergency departments. Studies of kindergarten pupils and school students were carried out in the first-aid posts of these institutions.

Results and its discussion. The study found that the growth of healthy males, from 3 to 12 years old, increases 1.57 times. The highest growth rate is observed at 5 (7.9%) and 7 years (7.83%), and the lowest at 11 (2.3%) and 12 years (3.2%). The height of females from 3 to 12 years increases 1.65 times. The

highest growth rate is observed at 4 (9.4%) and 5 years (9.3%), and the lowest in females - at 11 (3.6%) and 12 years (2.1%). The crossover of growth parameters between these two groups occurs at 5, 6,7,9 and 10 years.

The body weight of boys, starting from 3 to 12 years, increases by 2.75 times. The highest growth rate is observed in 6 (23.2%) and 8 years (19.5%), and the lowest - in 4 (5.3%) and 11 years (6.3%). The body weight of healthy girls from 3 to 12 years increases by 2.8 times. The highest growth rate is observed in 6 (18.1%) and 8 years (15.3%), and the lowest - in 4 (7.6%) and 11 years (1.6%). The crossover of body weight parameters between the sexes occurs at 4, 8, 9 and 11 years.

From 3 to 12 years, the zygomatic diameter of the face in males increases by only 1.14 times, and in females by 1.11 times. The highest growth rate was observed at 4 (1.15%) and 5 years (7.73%), in females at 5 (1.96%) and 7 years (2.45%), and the lowest at 5 (0 .21%) and 10 years (0.31%), among females it is lower at 10 (0.10%) and 11 years (0.20%). The mandibular diameter in males during the first and second periods of childhood increases by 1.29 times, in females by 1.19 times. A high growth rate was noted at 7 (5.6%) and 8 years (5.26%), in females at 8 (5.88%) and 10 years (3.07%), and a low growth rate at 10 (0.12%) and 12 years (1.19%), among females the lowest at 9 (0.6%) and 12 years (1.18%).

A comparison of the morphometric parameters of body length showed that in males the length of the body increases from 3 to 12 years by 1.96 times, and in girls - 1.92 times. The highest growth rate is observed in boys at 5 (22.5%) and 7 years of age (20.1%), and in girls at 5 (19.9%) and 7 years of age (14.8%), and the lowest in boys is at 4 years (2.1%), 9 and 11 years (2.2% each), and for girls the smallest - at 9 (0.1%) and 12 years (1.1%). The crossover of body length parameters between the sexes occurs at 7, 8, 9 and 11 years. The length of the body in males from 3 to 12 years increases by 1.66 times, and in females - 1.7 times. The highest growth rate in boys is observed at 5 (11.7%) and 6 years (18.2%), and the lowest at 9 (0.5%) and 11 years (1.6%). The highest growth rate in girls is observed at 5 (13.6%) and 6 years (16.8%), and the lowest at 8 (1.5%) and 10 years (1.4%). The crossover of body length parameters between the sexes occurs at 7, 8, 9 and 11 years.

The size of the chest circumference during the pause from 3 to 12 years in healthy males increases by 1.43 times, and in females - 1.45 times. The highest growth rate in boys is detected at 6 (9.8%) and 7 years (7.5%), in girls it is detected at 4 (8.4%) and 12 years (5.1%), and the lowest in boys is at 8 (1.6%) and 9 years (1.9%), and for girls - at 8 (2.4%) and 11 years (1.7%). The transverse diameter of the chest in males during the first and second periods of childhood increases 1.48 times, and in females - 1.46 times. The highest growth rate is observed in 4 (5.2%) and 11 years (6.3%), in females at 9 (5.4%) and 10 years (6.6%). The lowest growth rate was observed in 6 (1.8%) and 7 years (4.0%), in females at 6 (1.2%) and 7 years (2.9%). The highest rate of growth in females is associated with the onset of puberty. The crossover of transverse breast diameter parameters between the two groups occurs at 7, 10 and 11 years. The anteroposterior diameter of the chest in males from 3 to 12 years increases 1.17 times, in females 1.21 times. The highest growth rate is observed at 5 (3.0%) and 9 years (2.8%), in females at 10 (5.1%) and 12 years (4.7%). The lowest growth rate was observed at 7, 11, 12 years (0.7% each), and in girls at 4,6,7 years (0.8% each). The crossover of the anteroposterior breast diameter parameters between the two groups occurs at 12 years. , this is associated with early sexual development of females.

The growth of male children with cerebral palsy from 3 to 12 years increases by 1.7 times, and in females by 1.6 times.

Conclusions:

1. The height of male children in the first period of childhood increases by 1.32 times, female children - by 1.38 times; body weight in boys in the first period increases by 1.57 times, and in females - by 1.72 times. The height of male and female children of the second period of childhood increases equally;

body weight in the second period increases by 1.74 times in boys, and by 1.63 times in females. The crossover of growth parameters between these two groups occurs at 5, 6, 7, 9 and 10 years, and the crossover of body weight parameters is observed at 4, 8, 9 and 11 years.

2. The height of children with cerebral palsy in all age groups is less than that of healthy children. In males with cerebral palsy, body length at 12 years of age, compared to healthy people, lags behind by 19,6 см, and in females - by 15,3 см.

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