

PHYSICAL FITNESS OF CHILDREN WITH COMORBID PATHOLOGY: ACUTE PNEUMONIA AND CONNECTIVE TISSUE DYSPLASIA

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Relevance. The presence of connective tissue in all organs determines the systemic nature of its dysmorphogenesis and the high probability of the simultaneous development of various pathological conditions. Lower respiratory tract diseases deserve special attention when considering the characteristics of pathology associated with connective tissue dysplasia (CTD) [1, c. 2397].

Target. To assess the physical fitness of children with acute pneumonia and connective tissue dysplasia.

Research methods. From 180 clinical records, 118 children with a median age of 12 years (total range 6.0-17.0), was selected for statistical analysis based on complete anthropometric and diagnostic data. The children were categorized into three groups: Group 1: Comorbid (Pneumonia and CTD (N=66)), Group 2: Isolated CTD (N=11), Group 3: Isolated Pneumonia (N=41). The median age for Groups 1 and 3 was 12 years, while Group 2 presented a slightly higher median age of 15 years. We used the Anthro and Anthro Plus programs to estimate the child's length and weight, and took into account the age and gender at the time of the study. Data processing was carried out using Microsoft Excel 2010 tables and the Statistica 10.0 program.

Results and their discussion. Comparison of BMI profiles of Groups 1 and 3 using Mann-Whitney U test ($p=0.0056$) showed a significant link between dysplastic syndrome and lower BMI in children during or after pneumonia. Group 1 showed the lowest median BMI at 17.6 (15.3-20.1), Group 2 a median of 18.05 (15.1-20.1) and Group 3 the highest median BMI, 19.7 (17.3-22.3). The difference between Groups 1 and 2, and Groups 2 and 3, did not reach statistical significance ($p>0.05$). The distribution of Z scores demonstrated the development imbalances between Groups 1 and 3. For the average development category (z score= ± 1), a marked difference was seen between groups 1 and 3 ($p=0.0023$, $\chi^2=9.02$). Within Group 1, 59% fell into this average range, whereas only 29% of Group 3 were represented here. A critical shift was observed in the Above Range development category (Z score= $+1-2$) with group 3, 43.9% (18 children) higher developmental status, compared to only 13.6% (9 children) in group 1. This difference was highly significant ($p=0.006$, $\chi^2=12.28$). Group 2 showed an intermediate distribution in Z scores with 36.4% in both average and above average categories. Comparing Group 2 to Group 1 or Group 3 resulted in p values $p>0.05$. In the Below Average category (z score= $-1-2$), prevalence was minimal; group 1- 3% (n=2), group 2- 9% (n=1), group 3- 4.8% (n=2). Comparative analyses revealed no statistically significant differences across any of the groups ($p>0.05$). In the Significantly Above Average category (z $>+2$),

the distribution was relatively balanced among the cohorts. Group 1 presented 21.2% (n=14) in this range, while Group 2 and Group 3 showed 18.2% (n=2) and 22% (n=9).

Conclusions. Based on the above statistical data, following conclusions can be drawn about the impact of connective tissue dysplasia in children with pneumonia on the physical fitness of children. Children with comorbid pathology (CTD and pneumonia) had statistically significantly lower body length and BMI.

LITERATURE

1. Connective tissue dysplasia and pathogenetic mechanisms as a factor in impaired musculoskeletal adaptation in youth: a sports medicine review / M. Sankova, V. Nikolenko, E. Achkasov [et al.] // Sport Sciences for Health. – 2025. – Vol. 21. – P. 2391–2406. – doi: 10.1007/s11332-025-01474-y.

ANALYSIS ON HOW THE PROLONGATION OF CHRONIC GASTRITIS CAN AFFECT PHYSICAL DEVELOPMENT IN CHILDREN

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Relevance. The rate of growth of a child can be influenced by genetic factors and exogenous factors like the ongoing diseases in the child's body. [1, c. 2151]. This study investigates whether the duration of chronic gastritis correlates with differences in physical growth and anthropometric outcomes.

Target. To assess the relationship between prolongation of a disease (chronic gastritis) with the physical development of the children.

Research methods. 38 Clinical records of children with chronic gastritis in Grodno regional clinical pediatric hospital, Belarus in 2023 were recorded. For assessment of physical development AnthroPlus software was used. Data processing was carried out using Microsoft Excel 2010 tables and Statistica 10.

Cross-sectional comparative analysis was conducted with these children diagnosed with chronic gastritis by dividing them as follows.

Group 0: duration < 12 months (n= 20)

Group 1: duration ≥ 12 months (n=18)

Results and their discussion. Among 38 pediatric clinical records analyzed (55% female, mean age 13.37 years), the study demonstrated average anthropometric measures of 54.62 kg weight, 164.37 cm height, and a BMI of 19.67 kg/m². Most children were in high school (55%), and two had a disease duration of approximately 10 years. Height for age z scores showed that most children fell within ±0.0–1.9 SD, while BMI for age z scores indicated that 60% were within the normal range and 40% deviated, with overweight more common than underweight.