ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

COMPARATIVE GRADE PHYSICAL DEVELOPMENTS CHILDREN AT SUGAR DIABETES

Jo'rayeva Farangiza Erkinovna
Bukhara State Medical Institute

Resume:IN given overview article presented analysis modern scientific data from Russian and foreign studies on physical development in diabetes mellitus**.**

Key words: children, physical development, sugar diabetes

Relevance

diabetes mellitus,- This group metabolic diseases, which characterized by chronic hyperglycemia caused by violations secretions insulin, violated effects insulin or combination these violations [3].

In 2007, the world's total child population (0-14 years) reached 1.8 billion, of which 0.02% (440,000) were diagnosed with diabetes mellitus and 70,000 new cases will be diagnosed worldwide each year [10].

In children with diabetes mellitus, characteristic symptoms such as polyuria, polydipsia, visual impairment, and weight loss are usually observed in combination with glucosuria and ketonuria [3].

Type 1 diabetes mellitus occurs in more than 90% of all cases of diabetes mellitus in children and adolescents; the diagnosis of type 1 diabetes mellitus is established in less than half of cases in individuals under 15 years of age [133].

Criteriadiagnosticssugardiabetes[22, 23] is:

1. Classic symptoms of diabetes mellitus or hyperglycemic crisis in combination with plasma glucose concentration ≥ 11.1 mmol/L (200 mg/dL),
2. Fasting plasma glucose ≥7.0 mmol/L (≥126 mg/dL). The fasting state is defined as no caloric intake for at least 8 hours.
3. Glucose level 2 hours after exercise ≥11.1 mmol/L (≥200 mg/dL) during OGTT.

Test must be carried out With using loads glucose, containing equivalent 75 g of anhydrous glucose dissolved in water or at a dose of 1.75 g/kg body weight up to a maximum dose 75 g.

4. HbA1c>6.5%**

The test should be performed in a laboratory using a method certified by the National Glycohemoglobin Standardization Program (National Glycohemoglobin Standardization Program) and standardized in accordance with the study control of diabetes and its complications (Diabetes Controland Complications Trial)

Children and adolescents with diabetes can benefit from the same health and leisure benefits as healthy individuals and should be given the same opportunities to participate in physical activity [11].

Regular physical activity frequency can help lower blood glucose levels [9] and reduce cardiovascular risks [13].

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

In addition, it was found that intense exercise with breaks is less effective in reducing blood glucose levels than continuous moderate-intensity physical exercise [5, 6].

Due to high blood glucose levels, some children experience higher levels of physical activity than healthy peers [2].

Exercise should be regular and rhythmic [3] because insulin sensitivity in children with type 1 diabetes remains elevated during exercise [5]. Children who exercise only occasionally may develop difficulty managing their basal insulin [9].

Consumption of protein-rich foods after exercise increases glucose utilization and improves glucagon resynthesis [6], while dehydration will negatively affect physical performance [17]

When diagnosing children, the type of diabetes is determined based on the presenting symptoms, but the possibility of clinical diagnosis is hampered by factors such as the increasing number of overweight patients among children with diabetes [7, 8]

Differences Type 1 and type 2 diabetes, as well as monogenic and other forms of diabetes, are important both in therapy and in training. The following can help in diagnosis to determine the type of diabetes:

- diabetes-associated autoantibodies: the presence of autoantibodies to GAD , tyrosine phosphatase (IA2), insulin (IAA), and/or zinc transporter (ZnT8) confirms the diagnosis of diabetes mellitus (DM1), since both at least one from these species autoantibodies is discovered V 85-90% cases at primary detection of fasting hyperglycemia [14];
- An elevated fasting C-peptide level may help differentiate non-autoimmune insulin-resistant type 2 diabetes in young adults from type 1 diabetes [4]. However, since insulin and C-peptide levels may be similar in patients with type 1 and type 2 diabetes during the first year after diagnosis, measuring C-peptide levels in the acute phase is not recommended. If the patient is receiving insulin therapy, measuring C-peptide at glucose levels high enough to stimulate it (>8 mmol/L) will help to understand whether endogenous insulin secretion is occurring. This is rare after the end of remission (2-3 years) in children with type 1 diabetes.

As is known, type 1 diabetes is characterized by chronic, immune-mediated destruction of pancreatic β -cells, which leads to partial or, in most cases, absolute insulin deficiency. This type of diabetes (type 1A) is most often caused by autoimmune destruction β -cells pancreas glands that is happening With different intensity and clinical symptoms of which appear when about 90% of the β -cells of the pancreas are destroyed. The etiology of the disease is multifactorial, but the specific role played by genetic predisposition, environmental factors, the immune system and β -cells in the pathogenic processes underlying DM 1 remains unclear [3].
According to data from foreign countries, type 1 diabetes occurs in more than 90% of all cases of diabetes in children and adolescents, and among all age groups, type 1 includes 5-10% of all cases of diabetes. Type 1 diabetes is diagnosed annually in approximately 80,000 children under 15 years of age worldwide [7].

The prevalence of T1DM varies considerably between countries, within countries, and in different populations. It is most common in Finland [5], the Nordic countries [27,] and Canada [8]. Among Caucasians living in Europe, the frequency of occurrence has a 20-fold spread [8] and correlates with the frequency of occurrence of HLA susceptibility genes in the population as a whole [7, 8].

Of the approximately 500,000 children with type 1 diabetes , about 26% are in Europe and 22% are in North America and the Caribbean [7]. In Asia, the incidence of type 1 diabetes is very low:

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

in Japan, it is approximately 2 on 100000 man[13], V China (Shanghai)-3.1 on 100000[14], on Taiwan - near 5 per 100,000 [9], and there is a different, unique association with HLA compared to the Caucasian race [7]. In addition, in Japan there is a special, slowly progressive form of DM I , which accounts for about a third of cases of this type of diabetes [13].

1 diabetes has been increasing worldwide in recent decades [3]. Studies in some countries have documented a disproportionate increase in incidence in children under 5 years of age [6], as well as in children in developing countries and countries that have undergone economic transformation in recent decades [1]. There are also data that in some countries in recent years the incidence has reached a plateau [3, 4, 5, 12]. The increase in the incidence of type 1 diabetes occurs simultaneously with an increase in the proportion of individuals with the low-risk HLA genotype in some populations [5,7], which may indicate an increasing role of environmental factors in the etiology of the disease.

Familial aggregation occurs in approximately 10% of cases of type I diabetes [6], and when extended family history is taken into account, in 20%, however, no specific inheritance pattern can be traced. The risk of developing diabetes in a patient's identical twin is less than 40% [8], for a brother or sister this risk makes up approximately 4% To age 20 years [6, 12] And 9.6% to age 60 years [18] compared with 0.5% in the general population. The cumulative risk of diabetes by age 15 years is higher for twins with identical HLA haplotypes DR 3- DQ 4- DQ 8 (17 compared with 6% of twins with one or no haplotin)[5]. The risk is also higher in siblings of probands diagnosed at an early age, in parents with young-onset diabetes in males, and in those with older parents[5].

I diabetes is 2-3 times more common in children of men with diabetes (3.6-8.5%) compared to children of women With SD (1.3-3.6%) [8]. Cumulative risk SD I is equal to approximately 4% For children , at whose parents, both mothers and fathers, fell ill T y p e I diabetes in adults (15–39 years) [6].

The number of patients with diabetes mellitus increases annually in the world, which has led WHO experts to consider diabetes mellitus an epidemic among non-communicable diseases.

According to the results of the study by A.P. Shepelkevich [1], which included 210 patients with type 1 diabetes , a reliable decrease in BMD was noted in comparison with the control group in the spine, proximal femur and total mineral component. Low bone mass was detected in 20% of the examined patients with type 1 diabetes . The presence of nBMD in the SB (F = 0.02; p = 0.008), PB (F = 0.003; p = 0.002), in any examined area of the axial skeleton (x2 = 6.03; p = 0.01) was established in a significantly larger number of individuals with type 1 diabetes than in the control group.

Conclusion

A significant decrease in the levels of total and ionized calcium was noted among the examined patients with type I diabetes , as well as the number of patients with low values of these parameters. Hypocalcemia was detected in 50.6% of patients with type I diabetes .

LIST LITERATURES:

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

1. Alimardonova M.A. Features of somatometric and functional indicators of children of primary school age with different motor regimes living in the city of Tashkent // Pediatrics. - Tashkent, 2011. - Vol. 90. - No. 1. - P. 117-121.
2. Babuch A.P., Stefanets M.I., Katerynyuk I.M., Chertan G.N., Zorina Z.A., Angeliu R.A. Morphometric peculiarities feet at children // Morphology. - SPB, 2010. - Volume 137. -
3. Bogomolova, E.S. Kuzmichev Yu.G., Badeeva T.V. Physical development of modern schoolchildren of Nizhny Novgorod // Medical Almanac. - 2012. - T.22. - No3. - P.193-198 .
4. Bukina L.G., Komarova P.M., Mityagova A.A., Tyatenkova N.N. Somatometric Characteristics of Children and teenagers d. Yaroslavl // Morphology. - SPB, 2010. - Volume 137. -
5. Burtseva T.E. Ethnic heterogeneity and natural and climatic conditions as factors in planning the organization of medical care for children in the Republic of Sakha (Yakutia). /Author's abstract. diss. … doc. med. sciences. - St. Petersburg, 2010. - 32 p.
6. Vasilieva O.V. Lukushkina E.F. Low duration breast feeding
7. //Pediatrics. - Moscow, 2013. - №9. - P.2-4 .
8. Global strategy By feeding children breast And early age. Translation from English. WHO, 2013. - 34 p.
9. Gorodvina E.V., Lishvinova T.A. Anatomical and anthropometric indicators organism in girls
10. // Morphology. - SPb, 2010. - Volume 137. - №4. - P.60-63.
11. Gruzdeva S.N. Morphological characteristics young taekwondoists // Morphology. - SPB, 2010. - Volume. 137. - №4. - P.61-64 .
12. Gubina-Vakulik G.I., Gorbach T.V., Yakovtsova I.I. The influence of somatometric indicators at birth on some somatometric and functional characteristics of 9-year-old children // Proceedings of the IV International Congress on Integrative Anthropology. - St. Petersburg, 2002. - P.102-103.
13. Derevtsova S.N. Anthropometric characteristics of the proportionality of the physique of residents of Krasnoyarsk // Morphology. SPb, 2010. - Vol. 137. - No. 1. - P. 48-51.
14. Dmitrienko S.V., Vorobyov A.A., Krayushkin A.I. Morphological features of the maxillofacial region in case of anomalies and deformations and methods of their diagnostics // Monograph. - St. Petersburg, ELBI-SPb Publishing House, 2009. - 213 p.
15. Kon I.Ya., Shilina N.M., Guseva M.R., Khatsenko I.E., Yashkova A.E., Korosteleva M.M., Budantseva S.V. Study of the influence of fish oil as a source of w -3 polyunsaturated fatty acids on the incidence of acute respiratory infections, anthropometric indicators and visual function in preschoolers aged 5-6 years // Pediatrics. - Moscow, 2010. - Vol. 89. - No. 1. - P.76-80.
16. Krikun E.N., Boldyr V.V., Churnosov M.I., Zaboltnaya S.V., Petrichko S.A. Reaction of morphofunctional components of the child's body to an environmental factor // Morphology. - St. Petersburg, 2010. - Vol. 137. - No. 4. - P.104-105.
17. Mirzakarimova D.B. Age, individual and gender characteristics of anthropometric parameters in schoolchildren of Andijan // Morphology. - St. Petersburg, 2010. - Vol. 137. - No. 4. - P. 128-129.

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025
Journal: https://www.academicpublishers.org/journals/index.php/ijai

18. Sattarov A.E. Age-related features of growth of anthropometric parameters of the upper limb in children and adolescents aged 12-18 years in high altitude conditions Kyrgyz Republic // Morphology. - St. Petersburg, 2010. - Volume 137. - No. 4. - P.169-172.
19. Tlakadugova M.Kh., Yakushenko M.N., Urusbambetov A.Kh. Age variability of anthropometric indicators schoolchildren G. Nalchik // Morphology. - 2010. - Volume
20. Yatsyk G.V., Kovalova N.N., Borovik T.E. On the problem of rational feeding of children in the first months of life // Children's doctor. - Moscow, 2010. - No. 2. - P.60-62.
21. Choi SH, Fan D., Hwang MS, Lee HK, Hwang CJ Effect of growth hormone treatment on craniofacial growth in children: idiopathic short stature versus growth hormone deficiency // J Formos Med Assoc. - 2016. - N7. - P.104-112.
22. Cutroneo G., Piancino MG, Ramieri G., Bracco P., Vita G., Isola G., Vermiglio G., Favaloro A., Anastasi G., Trimarchi F. Expression of muscle-specific integrins in masseter muscle fibers during malocclusion disease // Int J Mol Med. - 2012. 30(2). - P.235-242.