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CLINICAL CHARACTERISTICS OF PEDIATRIC ENDOCRINE DISORDERS IN THE KHOREZM REGION

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XULOSA

Tadqiqot maqsadi. *Xorazm viloyatida bolalarda uchraydigan endokrin kasalliklarning klinik xususiyatlari, tarqalishi hamda diagnostika va davolashdagi muammolarni o‘rganish.*

Material va usullari. *2024–2026 yillar davomida 0–17 yoshdagi 214 nafar bemorning tibbiy hujjatlari retrospektiv tahlil qilindi. Bemorlar quyidagi guruhlarga ajratildi: 1-tip qandli diabet, qalqonsimon bez kasalliklari, semizlik/metabolik sindrom, o‘sish gormoni yetishmovchiligi va boshqa kam uchraydigan endokrin kasalliklar. Klinik va laborator ko‘rsatkichlar, jumladan, HbA1c darajasi, shuningdek, demografik xususiyatlar ham baholandi.*

Natijalar. *1-tip diabet 73 bolada (34,1%), qalqonsimon bez kasalliklari 59 (27,6%), semizlik/metabolik sindrom 45 (21,0%), o‘sish gormoni yetishmovchiligi 18 (8,4%), boshqa kasalliklar 19 (8,9%) holatda aniqlangan. Qishloq hududidagi bolalarda tashxis kech qo‘yilgan va HbA1c darajasi yuqoriroq bo‘lgan. Qiz bolalarda qalqonsimon bez kasalliklari ko‘proq, shaharlik bolalarda esa semizlik ustunlik qilgan.*

Xulosa. *Hududda bolalar orasida endokrin kasalliklar keng tarqalgan bo‘lib, ular jins va yashash joyiga bog‘liq farqlarga ega. Hududiy skrining dasturlarini joriy etish va davolash tizimini takomillashtirish zarur.*

Kalit so‘zlar: *bolalar endokrinopatiyasi, 1-tip qandli diabet, gipotireoz, semizlik, klinik tadqiqot, Xorazm viloyati.*

РЕЗЮМЕ

Цель исследования. *Изучить клинические особенности, распространённость и проблемы диагностики и лечения эндокринных заболеваний у детей в Хорезмском регионе Узбекистана.*

Материал и методы. *Проведён ретроспективный анализ медицинских карт 214 детей в возрасте 0–17 лет за период 2024-2026 гг. Пациенты распределены по нозологическим группам: сахарный диабет 1 типа, заболевания щитовидной железы, ожирение/метаболический синдром, дефицит гормона роста и другие редкие эндокринные заболевания. Оценивались клинические и лабораторные показатели, включая уровень HbA1c, а также демографические характеристики.*

Результаты. *Сахарный диабет 1 типа выявлен у 73 детей (34,1%), заболевания щитовидной железы – у 59 (27,6%), ожирение/метаболический синдром – у 45 (21,0%), дефицит гормона роста – у 18 (8,4%), прочие эндокринные заболевания – у 19 (8,9%). У детей из сельской местности отмечена более поздняя диагностика и более высокий уровень HbA1c. Заболевания щитовидной железы чаще встречались у девочек-подростков, ожирение – у городских детей.*

Выводы. *Эндокринные заболевания широко распространены среди детей региона и имеют особенности в зависимости от пола и места проживания. Требуется внедрение региональных скрининговых программ и улучшение системы ведения пациентов.*

Ключевые слова: *детская эндокринология, сахарный диабет 1 типа, гипотиреоз, ожирение, клиническое исследование, Хорезм.*

Endocrine diseases in childhood represent an important medical and social problem due to their long-term impact on physical development, metabolism, and overall quality of life [2,6]. In recent years, there has been a steady increase in the prevalence of endocrine disorders among children and adolescents, which has become a significant concern for healthcare systems worldwide [4,10]. These conditions not only influence growth and pubertal development, but also contribute to the development of chronic non-communicable diseases in adulthood, including cardiovascular and metabolic complications [7].

Among pediatric endocrine conditions, type 1 diabetes mellitus remains one of the most clinically significant diseases. It is characterized by autoimmune destruction of pancreatic β-cells, resulting in absolute insulin deficiency and the need for lifelong therapy [1,8]. Delayed diagnosis may lead to acute complications such as diabetic ketoacidosis, while poor glycemic control contributes to long-term vascular damage [8,11].

Thyroid disorders are also frequently encountered in pediatric practice. Congenital hypothyroidism requires early detection to prevent irreversible neurological impairment, whereas autoimmune thyroid diseases are more common during adolescence, especially among girls [3,5].

Another important issue is the increasing prevalence of obesity and metabolic syndrome among children. These conditions are associated with lifestyle changes, including reduced physical activity and unhealthy dietary habits [7,13]. Pediatric obesity significantly increases the risk of insulin resistance and type 2 diabetes mellitus in later life [10].

Growth hormone deficiency, although less common, plays a crucial role in pediatric endocrinology due to its effect on linear growth and physical development [9]. Early diagnosis and timely therapy are essential for favorable outcomes. Despite the availability of global data, region-specific studies remain limited, particularly in the Khorezm region, which necessitates further clinical investigation [6].

MATERIAL AND METHODS

This retrospective study was conducted using medical records of 214 pediatric patients aged 0–17 years who were diagnosed with endocrine disorders and treated in healthcare institutions of the Khorezm region between 2022 and 2025. Inclusion criteria included confirmed endocrine diagnoses and complete medical documentation. Patients with incomplete records or unclear diagnoses were excluded to ensure the reliability of the analysis. Diagnostic verification was carried out in accordance with international clinical standards. Type 1 diabetes mellitus was identified based on established diagnostic criteria. Obesity was determined using body mass index values corresponding to age-related percentiles. Metabolic syndrome was assessed using adapted international approaches. Thyroid dysfunction was confirmed through hormonal analysis, including thyroid-stimulating hormone and free thyroxine levels. Growth hormone deficiency was diagnosed through clinical evaluation combined with stimulation testing. Patients were divided into groups depending on the type of endocrine disorder. The dataset included demographic characteristics, anthropometric measurements, clinical manifestations, and laboratory indicators such as glycated hemoglobin. Statistical processing was performed using standard analytical methods.

RESULTS

The study included 214 children, among whom 118 (55.1%) were girls and 96 (44.9%) were boys. Analysis of the clinical structure revealed that type 1 diabetes mellitus was the predominant endocrine disorder, identified in 73 patients, which corresponds to 34.1% of the total cohort.

Thyroid diseases were diagnosed in 59 children (27.6%), making them the second most common group of endocrine pathologies. Obesity and metabolic syndrome were observed in 45 cases (21.0%), while growth hormone deficiency was detected in 18 patients (8.4%). Other, less frequent endocrine disorders accounted for 19 cases (8.9%).

A comparative assessment demonstrated noticeable differences between children from rural and urban areas. In particular, the mean HbA1c level among rural patients reached 9.8±1.6%, whereas in urban children it was significantly lower – 8.1±1.3%. Moreover, the average duration from the onset of symptoms to diagnosis was longer in rural populations, amounting to 5.2±1.4 months compared to 2.8±1.1 months in urban patients.

Gender-based analysis indicated that thyroid disorders were more frequently observed in adolescent girls, forming the majority within this subgroup. At the same time, obesity and metabolic syndrome were more prevalent among children living in urban settings, which may reflect lifestyle-related influences.

Children diagnosed with growth hormone deficiency exhibited characteristic clinical signs, including decreased growth velocity and delayed bone maturation. Rare endocrine conditions, such as adrenal insufficiency and precocious puberty, were identified in a limited number of cases and required specialized diagnostic approaches.

DISCUSSION

The findings of this study indicate that type 1 diabetes mellitus remains the leading endocrine disorder among children in the studied population. The identified differences between rural and urban patients suggest disparities in access to medical care and early diagnostic opportunities. The higher frequency of thyroid disorders among girls reflects known physiological and hormonal characteristics. The increased prevalence of obesity in urban populations can be explained by lifestyle-related factors, including reduced physical activity and dietary patterns. This study, based on clinical data, allows for a deeper understanding of the structure of endocrine diseases within the healthcare system. It also highlights existing challenges such as delayed diagnosis and regional differences in disease detection.

CONCLUSION

Pediatric endocrine disorders in the Khorezm region are characterized by a heterogeneous structure, with type 1 diabetes mellitus, thyroid diseases, and obesity being the most prevalent conditions. Significant differences between rural and urban populations indicate inequalities in access to healthcare and timing of diagnosis. These results emphasize the importance of improving early screening programs, optimizing diagnostic strategies, and strengthening primary healthcare services.

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КЛИНИКО-ЛАБОРАТОРНЫЕ ОСОБЕННОСТИ ОСТРЫХ РЕСПИРАТОРНЫХ ЗАБОЛЕВАНИЙ У ДЕТЕЙ С ЖЕЛЕЗО-ДЕФИЦИТНОЙ АНЕМИЕЙ В УСЛОВИЯХ РЕГИОНА ПРИАРАЛЬЯ

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O‘tkir respirator kasalliklar bolalar kasallanishi va shifoxonaga yotqizilishining eng keng tarqalgan sabablaridan biri bo‘lib qolmoqda. So‘nggi yillarda nafas olish a’zolari yuqumli kasalliklarining kechish og‘irligiga ta’sir etuvchi omillarni o‘rganishga alohida e’tibor qaratilmoqda. Bunday omillardan biri bolalar aholisi orasida keng tarqalgan va immunitet tizimining holatiga sezilarli ta’sir ko‘rsatishi mumkin bo‘lgan temir tanqisligi anemiyasidir.

Tadqiqotning maqsadi. *Orolbo‘yi mintaqasi sharoitida temir tanqisligi kamqonligi bo‘lgan bolalarda o‘tkir respirator kasalliklar kechishining klinik-laborator xususiyatlarini o‘rganishdan iborat.*

Materiallar va usullar. *Tadqiqotga Qoraqalpog‘iston Respublikasi Respublika ko‘p tarmoqli bolalar tibbiyot markazi pulmonologiya bo‘limi hamda tuman tibbiyot birlashmalarida statsionar davolangan 1 yoshdan 18 yoshgacha bo‘lgan 426 nafar bolalar jalb qilingan. Bolalar anemiya mavjudligi va kasallik etiologiyasiga qarab bir nechta guruhlarga bo‘lingan.*

Tadqiqot natijalari *shuni ko‘rsatdiki, temir tanqisligi anemiyasi bo‘lgan bolalarda o‘tkir respirator kasalliklar og‘irroq kechadi va immun javob va mikroelementlar almashinuvining yaqqol buzilishi bilan birga keladi.*

Olingan ma’lumotlar immun va metabolik holat xususiyatlarini hisobga olgan holda ushbu toifadagi bemorlarni tashxislash va davolashga kompleks

SUMMARY

Acute respiratory diseases remain one of the most common causes of morbidity and hospitalization among children. In recent years, considerable attention has been paid to the study of factors influencing the severity of infectious diseases of the respiratory system. One of such factors is iron deficiency anemia, which is widespread among the pediatric population and may significantly affect the immune system.

The aim of the study *was to investigate the clinical and laboratory features of acute respiratory diseases in children with iron deficiency anemia in the Aral Sea region.*

Materials and methods. *The study included 426 children aged 1–18 years who were hospitalized in the pulmonology department of the Republican Multidisciplinary Children’s Medical Center of the Republic of Karakalpakstan as well as in district medical institutions. The children were divided into several groups depending on the presence of anemia and the etiology of the disease.*

Results. *The results of the study showed that acute respiratory diseases in children with iron deficiency anemia had a more severe course and were accompanied by pronounced disturbances in immune response and micronutrient metabolism.*

Conclusion. *The obtained data indicate the need for a comprehensive approach to the diagnosis and treat -*