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**ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE**

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KICHIK MAKTAB YOSHIDAGI BOLALARDA QABZIYAT ETOPATOGENEZI VA ZAMONAVIY TASHXISLASH USULLARI

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✓ Rezyume

Mazkur maqolada kichik maktab yoshidagi bolalarda qabziyatning asosiy etiopatogenetik omillari, uni keltirib chiqaruvchi sabablar, shuningdek, zamonaviy tashxislash usullari tahlil qilingan. Qabziyat bolalar orasida keng tarqalgan holatlardan biri bo'lib, u nafaqat jismoniy, balki psixologik holatga ham jiddiy ta'sir ko'rsatadi. Ilmiy maqsad – bolalarda funksional va organik qabziyatni farqlash, tashxislashda eng samarali va kam invaziv usullarni tanlashdan iborat

Kalit so'zlar: qabziyat, etiopatogenez, bolalar gastroenterologiyasi, defekatsiya buzilishi, maktab yoshi, tashxislash, rektoromanoskopiya, funksional qabziyat

ЭТИОПАТОГЕНЕЗ ЗАПОРОВ И СОВРЕМЕННЫЕ МЕТОДЫ ДИАГНОСТИКИ У ДЕТЕЙ МЛАДШЕГО ШКОЛЬНОГО ВОЗРАСТА

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✓ Резюме

В данной статье проанализированы основные этиопатогенетические факторы запора у детей младшего школьного возраста, причины его возникновения, а также современные методы диагностики. Запор является одним из распространённых состояний среди детей, оказывающим влияние не только на физическое, но и на психологическое состояние. Цель исследования – различать функциональные и органические запоры у детей, а также выбрать наиболее эффективные и малоинвазивные методы диагностики

Ключевые слова: запор, этиопатогенез, детская гастроэнтерология, нарушение дефекации, школьный возраст, диагностика, ректороманоскопия, функциональный запор

ETIOPATHOGENESIS OF CONSTIPATION AND MODERN DIAGNOSTIC METHODS IN PRIMARY SCHOOL - AGED CHILDREN

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✓ Resume

This article analyzes the main etiopathogenetic factors of constipation in primary school-aged children, its causes, as well as modern diagnostic methods. Constipation is one of the most common conditions among children, affecting not only their physical but also psychological well-being. The scientific objective is to distinguish between functional and organic constipation in children and to choose the most effective and minimally invasive diagnostic methods

Keywords: constipation, etiopathogenesis, pediatric gastroenterology, defecation disorders, school age, diagnosis, rectosigmoidoscopy, functional constipation

Relevance

Constipation (*constipatio* in Latin) represents one of the most prevalent yet frequently underestimated gastrointestinal disorders in the pediatric population. Despite its apparent simplicity, it can exert a profound influence on a child's physical health and psychological well-being. If not diagnosed and managed in a timely manner, constipation may contribute to disturbances not only in visceral function but also in the psycho-emotional development of the child. In children of primary school age (6–11 years), constipation is commonly associated with lifestyle modifications, inadequate dietary patterns, and adaptation to the school environment [12,13].

According to data from the World Health Organization (WHO) and the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN), approximately 15–20% of children worldwide suffer from various forms of constipation [4,6]. In the majority of cases, this condition is functional in nature, meaning that no clear organic abnormalities or pathological causes can be identified. However, functional constipation can significantly impair a child's quality of life, leading to delayed defecation, abdominal pain, reduced appetite, as well as behavioral symptoms such as irritability, aggression, or signs of depression [11].

Extensive research has been conducted globally to study this issue. For instance, in a study involving children aged 7–12 years in Türkiye, the prevalence of constipation was reported to be 7.2%, whereas in Indonesia, this figure reached up to 18.3%. Identified risk factors included avoidance of toilet use, delayed development of the defecation reflex, and the presence of a psychologically unhealthy environment [8].

From an etiopathogenetic perspective, constipation develops under the influence of multiple factors, which can be conventionally classified into internal and external causes. Internal factors include disturbances in intestinal peristalsis, enteroneurological dysfunctions, endocrine disorders, and metabolic imbalances. External factors primarily involve dietary errors (low-fiber foods, bone-rich products, fatty meals lacking potassium), sedentary lifestyle, insufficient development of proper defecation reflexes at school, chronic stress, and psychological discomfort [5,9].

In primary school-aged children, the development of constipation is often associated with the school environment. The specific school routine, collective setting, and psychological barriers to toilet use may lead to intentional stool withholding. This, in turn, disrupts intestinal motility, reduces buffering capacity, and results in stool hardening. Additionally, in some cases, children develop rigid rituals—such as attempting to defecate only at home—which further contributes to the development of functional constipation.

Materials and methods

Currently, modern medicine offers a variety of clinical and instrumental methods for diagnosing constipation and identifying its underlying causes. These include history taking, clinical examination, ultrasonography, radiography, rectosigmoidoscopy, colonoscopy, and, when necessary, biochemical and hormonal analyses. In recent years, the Rome IV criteria have also been widely adopted for the classification and evaluation of functional gastrointestinal disorders in children [6,7].

This article analyzes the etiopathogenetic basis and clinical manifestations of constipation in primary school-aged children, as well as modern diagnostic methods currently in use. Furthermore, it discusses recommended approaches for practical application. Such strategies enable early detection, accurate assessment, and effective treatment of defecation disorders in children.

The aim of this study is to analyze the main etiopathogenetic factors of constipation in primary school-aged children, to assess the effectiveness of modern diagnostic methods in identifying clinical manifestations, and to determine clinical and laboratory indicators that contribute to the early detection of functional constipation in pediatric gastroenterology.

This scientific study involved 120 children aged 7 to 10 years. Among them, 70 children exhibited signs of constipation, while the remaining 50 formed the control group. During anamnesis collection, structured questionnaires were administered to the children and their parents. Key aspects evaluated included defecation frequency, presence of pain, sensation of incomplete evacuation, dietary habits, chronic stress levels, and degree of physical activity.

- Clinical examinations involved abdominal palpation, assessment of peristaltic activity, presence of flatulence, stool consistency, and classification based on the Bristol Stool Scale.

- Laboratory analyses included complete blood count (CBC), stool analysis, dysbiosis screening, and hormonal tests where necessary.
- Instrumental investigations were limited to ultrasound imaging (USG), rectosigmoidoscopy, and colonoscopy in cases of suspected organic pathology.
- Diagnosis was established based on the Rome IV criteria, allowing differentiation between functional and organic constipation.

According to international research (Thompson et al., 2017; Hyams et al., 2016), functional constipation in children is predominantly associated with poor dietary patterns, stress, irregular toileting habits, and disruptions in neurohormonal regulation of the gastrointestinal tract. Recent pediatric gastroenterological studies conducted in the United States, Germany, South Korea, and Japan further confirm these findings [1,8].

Results and discussions

According to the findings of the study, signs of constipation of varying severity were observed in 56.7% (68 out of 120) of the examined children. Among children predisposed to constipation, the following contributing factors were identified:

- 73.5% – dietary irregularities, particularly a low intake of dietary fiber;
- 61.7% – insufficient physical activity;
- 44.1% – psycho-emotional stress (academic load, family-related issues);
- 38.2% – imbalance of intestinal microflora.

Based on the Bristol Stool Scale, 46 out of 68 children demonstrated stool types 1–2, indicating hard and lumpy stool. Coprocytogram analysis revealed elevated levels of starch and neutral fats in 57.4% of cases, and pathogenic flora were identified in 39.7% of samples. Biochemical tests showed that in 26.4% of children, the total bilirubin level approached the upper borderline of the reference range.

Abdominal ultrasonography revealed dilation of the sigmoid colon and accumulation of fecal masses in 41.1% of cases. Psycho-emotional evaluation showed that children with constipation exhibited significantly higher levels of nervousness, insomnia, and academic difficulties.

Another important finding was the irregularity of bowel habits and voluntary stool withholding behavior, which was recorded in 52.9% of the cases. This factor appears to play a significant role in disrupting bowel function in younger children.

Based on the identified conditions, the study confirms the necessity of a comprehensive approach for the early detection of constipation in children.

The findings of this study indicate a growing prevalence of constipation among primary school-aged children. Several contributing factors were identified, including poor dietary habits, insufficient physical activity, psychological stress, and functional abnormalities of internal organs.

Our results are consistent with the data from the World Gastroenterology Organisation (WGO) and the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) [3,4], both of which emphasize the widespread occurrence of functional constipation in children and its complex pathogenesis.

Particularly, lifestyle-related factors—such as low dietary fiber intake, chronic stress, and changes in living conditions—may have a negative impact on intestinal motility in children. Laboratory assessments further revealed fluid deficiency, intestinal dysbiosis, and in some cases, signs of functional dyspepsia.

Several studies, including those by Hyams et al. (2016) and Benninga et al. (2019), support the effectiveness of the Rome IV criteria in diagnosing childhood constipation [1,2]. These criteria allow differentiation between functional constipation, irritable bowel syndrome, and other gastrointestinal disorders.

Modern diagnostic methods—such as abdominal ultrasonography, barium enema, and functional diagnostic tests—can be effectively used to clarify the etiopathogenesis of constipation and guide appropriate treatment strategies.

The clinical presentation of constipation is highly individualized, with some children presenting additional neurological or endocrine disorders. This underscores the need for a comprehensive and multidisciplinary approach to each case.

In conclusion, early detection of constipation, in-depth evaluation of its causes, and the implementation of targeted diagnostic methods can significantly improve both prevention and treatment outcomes in primary school-aged children.

Conclusion

Constipation is a widespread condition among primary school-aged children and is characterized by a multifactorial pathogenesis. The main contributing factors to constipation include improper diet, low physical activity, psychological and neurological influences, and disturbances in the gut microbiota.

Modern diagnostic tools—such as the Rome IV criteria, abdominal ultrasound, and laboratory analyses—play a crucial role in identifying the specific type of constipation and determining appropriate treatment strategies. These methods enable differentiation between functional and organic constipation in children.

The study results indicate that each child requires an individualized approach, and that comprehensive diagnostics and multidisciplinary treatment methods are effective. Preventive measures, including increased medical awareness among parents and educators, promotion of healthy nutrition, and encouragement of physical activity, are essential.

Therefore, early detection and accurate diagnosis of constipation in children are key factors in reducing complications and improving the overall quality of life for the child.

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