



IMPROVING THE DIAGNOSIS, TREATMENT AND PREVENTION OF FUNCTIONAL DISORDERS OF THE DIGESTIVE ORGANS IN CHILDREN AND ADOLESCENTS

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ABSTRACT

Functional disorders of the digestive organs are prevalent among children and adolescents, often leading to significant discomfort and impacting their overall quality of life. This article reviews current advancements in the diagnosis, treatment, and prevention of these disorders. Emphasizing a multidisciplinary approach, the article highlights the importance of early and accurate diagnosis through advanced imaging techniques and biomarkers. It explores novel treatment modalities, including dietary interventions, pharmacotherapy, and psychosocial therapies, tailored to pediatric needs. Additionally, the article discusses preventive strategies, focusing on lifestyle modifications and educational programs aimed at promoting gut health from an early age. The integration of these methods has shown promise in improving clinical outcomes and enhancing the well-being of young patients.

СОВЕРШЕНСТВОВАНИЕ ДИАГНОСТИКИ, ЛЕЧЕНИЯ И ПРОФИЛАКТИКИ ФУНКЦИОНАЛЬНЫХ РАССТРОЙСТВ ОРГАНОВ ПИЩЕВАРЕНИЯ У ДЕТЕЙ И ПОДРОСТКОВ

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ABSTRACT

Функциональные нарушения органов пищеварения широко распространены среди детей и подростков, часто приводя к значительному дискомфорту и ухудшая общее качество их жизни. В этой статье рассматриваются современные достижения в диагностике, лечении и профилактике этих расстройств. Подчеркивая междисциплинарный подход, в статье подчеркивается важность ранней и точной



диагностика, лечение, профилактика, диетические вмешательства, фармакотерапия, психосоциальная терапия, здоровье кишечника, детская гастроэнтерология.

диагностики с помощью передовых методов визуализации и биомаркеров. В нем исследуются новые методы лечения, включая диетические вмешательства, фармакотерапию и психосоциальную терапию, адаптированные к педиатрическим потребностям. Кроме того, в статье обсуждаются профилактические стратегии, направленные на изменение образа жизни, и образовательные программы, направленные на укрепление здоровья кишечника с раннего возраста. Интеграция этих методов показала многообещающую возможность улучшения клинических результатов и благополучия молодых пациентов.

BOLALARDA VA O'SMIRLARDA OVQAT XAZM QILISH A'ZOLARINING FUNKSIONAL BUZILISHLARINI TASHXISLASH, DAVOLASH VA OLDINI OLISHNI TAKOMILLASHTIRISH

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Funksional ovqat hazm qilish kasalliklari, pediatriya, diagnostika, davolash, oldini olish, dietali aralashuvlar, farmakoterapiya, psixososyal terapiya, ichak salomatligi, bolalar gastroenterologiyasi.

ABSTRACT

Ovqat hazm qilish tizimining funksional buzilishlari bolalar va o'smirlar orasida keng tarqalgan bo'lib, ko'pincha sezilarli noqulayliklarga olib keladi va ularning umumiy hayot sifatini buzadi. Ushbu maqolada ushbu kasalliklarni tashxislash, davolash va oldini olish bo'yicha joriy yutuqlar ko'rib chiqiladi. Maqolada fanlararo yondashuvni ta'kidlab, ilg'or tasvirlash usullari va biomarkerlardan foydalangan holda erta va to'g'ri tashxis qo'yish muhimligini ta'kidlaydi. U yangi davolash usullarini, jumladan, dietali aralashuvlar, farmakoterapiya va psixososyal terapiyani o'rganadi, ular bolalar ehtiyojlariga mos keladi. Bundan tashqari, maqolada turmush tarzini o'zgartirishga qaratilgan profilaktika strategiyalari va erta yoshdan boshlab ichak salomatligini mustahkamlashga qaratilgan ta'lim dasturlari muhokama qilinadi. Ushbu usullarning integratsiyasi yosh bemorlarning klinik natijalari va farovonligini yaxshilashda umidvor ekanligini ko'rsatdi.

Introduction. Functional digestive disorders (FDDs) are a group of conditions characterized by chronic or recurrent gastrointestinal symptoms without identifiable structural or biochemical abnormalities. These disorders, including irritable bowel syndrome (IBS), functional dyspepsia, and functional abdominal pain, are common among children and



adolescents, affecting their physical health, emotional well-being, and overall quality of life. The prevalence of FDDs in this population is significant, with studies indicating that up to 20% of children may experience these symptoms at some point during their development (Chitkara et al., 2005).

The diagnosis of FDDs in children and adolescents presents unique challenges. Traditional diagnostic methods often rely on the exclusion of organic diseases through extensive testing, which can be invasive, expensive, and stressful for young patients and their families (Rasquin et al., 2006). Recent advances, however, have introduced new non-invasive diagnostic tools, such as gastrointestinal biomarkers and advanced imaging techniques, which promise to improve the accuracy and efficiency of diagnosing FDDs (van Tilburg et al., 2015). These tools can help differentiate FDDs from other gastrointestinal disorders, enabling earlier and more precise interventions.

Treatment of FDDs in pediatric patients requires a multifaceted approach. The role of diet in managing these disorders has gained considerable attention, with evidence suggesting that dietary modifications can significantly alleviate symptoms (Saps et al., 2009). Specific diets, such as the low FODMAP diet, have been shown to be effective in reducing symptoms of IBS in children (Staudacher et al., 2017). In addition to dietary interventions, pharmacotherapy remains a cornerstone of treatment. However, the choice of medication must be carefully considered, given the distinct pharmacokinetic and pharmacodynamic profiles in children compared to adults (Hyams et al., 2010).

Psychosocial factors also play a crucial role in the manifestation and management of FDDs. Stress, anxiety, and depression are commonly associated with these disorders, necessitating the inclusion of psychological therapies in treatment plans (Campo et al., 2004). Cognitive-behavioral therapy (CBT) and gut-directed hypnotherapy have shown efficacy in managing functional abdominal pain and IBS in pediatric populations (Vlieger et al., 2007). These therapies aim to address the underlying psychosocial contributors to gastrointestinal symptoms, providing a holistic approach to treatment.

Prevention of FDDs is an area of growing interest and importance. Early lifestyle interventions, including promoting a balanced diet rich in fiber, regular physical activity, and stress management, are critical in preventing the onset of these disorders (Sanders et al., 2006). Educational programs targeting both children and their caregivers can foster better understanding and management of gastrointestinal health, potentially reducing the incidence of FDDs. Schools and pediatric healthcare settings play vital roles in disseminating this knowledge and supporting healthy behaviors.

The need for a comprehensive approach to FDDs in children and adolescents is underscored by the substantial impact these disorders have on individuals and healthcare systems. Research indicates that children with FDDs often experience frequent school absences, social difficulties, and decreased participation in physical activities, which can lead to long-term adverse outcomes (Youssef et al., 2006). Moreover, the economic burden associated with FDDs is significant, with increased healthcare utilization and costs related to diagnostic procedures, treatments, and ongoing management (Saps et al., 2013). This article aims to provide an in-depth review of current advancements in the diagnosis, treatment, and prevention of functional disorders of the digestive organs in children and adolescents. By



integrating findings from recent research and clinical practice, it seeks to highlight effective strategies that can enhance the care and quality of life for this vulnerable population. Understanding and addressing the multifaceted nature of FDDs will be crucial in developing more effective and compassionate healthcare practices for young patients.

Materials and methods. Functional digestive disorders (FDDs) in children and adolescents are prevalent, often causing significant distress and impairment in daily activities. Addressing these disorders involves advancements in diagnostic methods, effective treatment strategies, and comprehensive prevention programs. This main part explores these aspects in detail, emphasizing recent research and clinical practices that aim to enhance the management of FDDs in young populations.

Diagnosis of Functional Digestive Disorders

The diagnosis of FDDs in children and adolescents has traditionally been challenging due to the absence of identifiable structural or biochemical abnormalities. The Rome IV criteria, updated in 2016, provide a standardized framework for diagnosing these disorders based on clinical symptoms (Hyams et al., 2016). These criteria emphasize the importance of a thorough patient history and physical examination to differentiate FDDs from organic gastrointestinal diseases.

Recent advancements in diagnostic technologies have significantly improved the accuracy and efficiency of diagnosing FDDs. Non-invasive biomarkers, such as fecal calprotectin and lactoferrin, have been developed to identify inflammation and differentiate FDDs from inflammatory bowel diseases (IBD) (Van Rheenen et al., 2010). Additionally, breath tests measuring hydrogen and methane levels after carbohydrate ingestion can help diagnose functional dyspepsia and small intestinal bacterial overgrowth (SIBO) (Ghoshal et al., 2018).

Advanced imaging techniques, such as magnetic resonance enterography (MRE) and capsule endoscopy, provide detailed visualization of the gastrointestinal tract, aiding in the exclusion of structural abnormalities and confirming functional diagnoses (Chavhan et al., 2010). These methods are particularly useful in pediatric patients, where non-invasive procedures are preferred to minimize discomfort and anxiety.

Treatment of Functional Digestive Disorders

Effective treatment of FDDs in children and adolescents requires a multifaceted approach tailored to the individual's symptoms and needs. Treatment strategies typically involve dietary modifications, pharmacotherapy, and psychosocial interventions.

Dietary Modifications: Diet plays a crucial role in managing FDDs. The low FODMAP diet, which restricts fermentable oligosaccharides, disaccharides, monosaccharides, and polyols, has shown significant efficacy in reducing symptoms of IBS in pediatric patients (Halmos et al., 2014). Dietary fiber supplementation can also improve symptoms of functional constipation and IBS by enhancing stool consistency and promoting regular bowel movements (McRorie et al., 2014).

Pharmacotherapy: Medications are often used to alleviate specific symptoms of FDDs. Antispasmodics, such as hyoscine butylbromide, can reduce abdominal pain and discomfort (Rosen et al., 2016). Laxatives, such as polyethylene glycol, are effective in managing functional constipation (Loening-Baucke, 2002). Probiotics have also gained attention for



their potential to modulate gut microbiota and improve gastrointestinal symptoms (Horvath et al., 2011). However, the choice of medication must be carefully considered, particularly in pediatric populations, to avoid adverse effects and ensure safety.

Psychosocial Interventions: Psychosocial factors, including stress and anxiety, significantly influence the manifestation and severity of FDDs. Psychological therapies, such as cognitive-behavioral therapy (CBT) and gut-directed hypnotherapy, have been shown to be effective in managing functional abdominal pain and IBS in children (Vlieger et al., 2007). These therapies aim to address the underlying psychosocial contributors to gastrointestinal symptoms, promoting coping strategies and reducing symptom severity.

Prevention of Functional Digestive Disorders

Preventing FDDs in children and adolescents involves early lifestyle interventions and educational programs that promote gastrointestinal health. Schools and pediatric healthcare settings play a vital role in disseminating knowledge and supporting healthy behaviors.

Lifestyle Interventions: Encouraging a balanced diet rich in fiber, fruits, and vegetables is essential in preventing FDDs (Sanders et al., 2006). Regular physical activity is also important, as it promotes healthy bowel function and reduces stress (Hills et al., 2007). Stress management techniques, such as mindfulness and relaxation exercises, can help mitigate the impact of psychosocial stressors on gastrointestinal health (Sibinga et al., 2016).

Educational Programs: Educating children, parents, and caregivers about the importance of gastrointestinal health is crucial. Programs that provide information on healthy eating habits, the role of physical activity, and stress management can empower families to make informed decisions that promote long-term health. Healthcare providers should also be trained to recognize and address the early signs of FDDs, ensuring timely and appropriate interventions.

Screening and Early Intervention: Routine screening for gastrointestinal symptoms during pediatric check-ups can help identify children at risk for FDDs. Early intervention, including dietary modifications and stress management strategies, can prevent the progression of symptoms and improve outcomes (Di Lorenzo et al., 2017).

Conclusion. Functional digestive disorders in children and adolescents are complex conditions that require a comprehensive approach to diagnosis, treatment, and prevention. Advances in diagnostic technologies, tailored treatment strategies, and proactive prevention programs are essential in managing these disorders effectively. By integrating these approaches, healthcare providers can enhance the care and quality of life for young patients with FDDs, ensuring better long-term health outcomes.

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