

FEATURES OF THE COURSE OF HELICOBACTERIOSIS IN CHILDREN WITH CHRONIC GASTRODUODENITIS

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RESUME

The high prevalence of pathology of the upper digestive tract among the child population is an important and urgent social and medical problem. The number of children with chronic inflammatory diseases of the digestive system is growing. The upper section digestive tract pathology begins in preschool and school age very often. The prevalence of children with the upper section digestive tract pathology, the characteristics of the course, the high risk of the early disability, among which the gastro-duodenal pathology is the central place, it is the actual problem of the day. It actualizes scientific development in searching the most effective diagnostic measures, etiotropic and pathogenetically substantiated therapy, rehabilitation and prophylaxis of this common pathology actual. The author notes that chronic gastro-duodenitis is extremely rare in the form of mono-disease. Humoral and cellular immunity links changes contribute to transition of the disease to unfavorable or complicated variants. The article considers etiology, pathogenesis, diagnostics and modern treatment methods of this pathology. It describes course and characteristics of the disease at concurrent pathology.

The article contains the data references and some authors' research results on characteristics of the course of children gastro-duodenal pathology. It analyzes the role of etiological provocative factors and concurrent pathology on the course of chronic gastro-duodenitis.

Keywords: gastroduodenitis, characteristics, neurovegetative disorders, pathomorphosis, clinic, treatment.

In recent years, the world continues to maintain a steady upward trend in the number of children with chronic inflammatory diseases of the gastroduodenal zone. This makes the problem of etiopathogenesis, diagnosis, clinic, and treatment of children with chronic gastritis, gastroduodenitis, and gastric and duodenal ulcers particularly relevant [2, 13].

Gastroenterological pathology, including chronic diseases of the upper gastrointestinal tract (UPT) in children, is a serious medical and social problem due to their high prevalence, course, and high risk of early disability [18]. All this makes scientific developments relevant in terms of finding the most effective diagnostic measures, etiotropic and pathogenetically substantiated therapy, rehabilitation and prevention of this common pathology [2, 15].

In the last decade, not only has there been no trend towards a decrease in the prevalence of APTO pathology in children, but its steady increase has also been noted [2, 9]. According to various authors, its frequency has increased by 2–2.5 times in recent years, which is associated both with a true

increase in the number of patients with inflammatory lesions of the SPRT and with the use of new diagnostic techniques [10].

An analysis was made of the prevalence of diseases of the digestive system in children in foreign countries over the past 20 years [2, 16], where there is a significant increase in gastroenterological pathology in children and an uncontrolled increase in the incidence of diseases of the stomach and duodenum [15, 16].

Features of the course of chronic gastroduodenitis (CGD) in childhood are associated with the presence of critical periods affecting the formation of the gastrointestinal tract (GIT) due to uneven growth and systemic organ disintegration against the background of intense morphofunctional changes, immaturity of enzyme systems, intensity of metabolic processes and restructuring of the neuroendocrine system organism [11, 18].

According to A.M. Zaprudnova (2008), this is associated with the combined involvement of the stomach, duodenum (duodenum), liver, biliary system, pancreas and intestines in the pathological process [6]. In addition, general embryogenesis is important, which determines the close structural and functional relationship of the upper parts of the digestive tract [9].

This leads to the frequent detection of disorders in the functioning of the sphincter apparatus of the upper digestive tract in children with CHD [10].

So, according to O.V. Drobysheva (2009), changes in the work of the cardiac sphincter were detected in 65.8% of children with chronic gastroenteritis in the form of insufficient functional activity; dysfunction of the sphincter of Oddi with a predominance of spasm was diagnosed in 60.5% of cases; in total, disorders of the sphincter apparatus were documented in 84.2% of children [5].

As a result, dysfunctional disorders of the biliary tract and pancreas (PG) are among the most common and early comorbidities in children and adolescents with diseases of the gastroduodenal zone, detected in almost 80-100% of cases [9]. The development of symptoms characteristic of gastroesophageal reflux (GER) is somewhat less common, on average in 40.8% of children [17].

It can be noted that chronic gastroduodenitis is extremely rare in the form of a mono-disease. As a rule, the entire gastrointestinal tract is involved in the pathological process with the identification of billiard dysfunctions in 71% of patients, dysfunction of the sphincter of Oddi of the pancreatic type in 30%, irritable bowel syndrome in 22%, with the preservation of manifestations of impaired cavitory and parietal processes of digestion as in the phase exacerbations and remissions [12, 23].

This is related to the fact that in a third of children in the phase of remission of chronic gastroduodenitis, against the background of successful eradication of *Helicobacter pylori* infection, the syndrome of intestinal dyspepsia persists. Changes in the microelement status that persist in the remission phase of chronic gastroduodenitis in the form of a decrease in the level of essential microelements (copper, manganese, selenium, iron) and intestinal dysbacteriosis, detected in 100% of cases with a decrease in the amount of obligate flora (bifidobacteria, lactobacilli) and an increase in the number of conditionally pathogenic flora (representatives of the streptococcus family, fungi of the genus *Candida*), and can be regarded as factors affecting the preservation of a complex of clinical and functional changes in the phase of remission of the underlying disease [4].

In the study of endoscopy in all children, combined inflammatory changes in the mucous membrane of the stomach and duodenum were revealed [18]. The morphological picture in most patients corresponded to chronic diffuse antral gastritis in the acute stage. The features of the pathomorphosis

of the disease include the fact that with prolonged infection with Hp, functional and morphological changes in the mucous membrane of the stomach and duodenum are due to both the pathogenic properties of the microbe and the action of immune mechanisms. Most researchers suggest that immune mechanisms are key in the formation of one or another variant of gastroduodenal pathology, predetermining the nature of tissue changes [10].

Changes in the humoral and cellular immunity can contribute to the transition of the disease to unfavorable or complicated variants [22].

The discovery by Australian Nobel Prize winners Robin Warren and Barry Marshal of the etiopathogenetic role of *Helicobacter pylori* (Hp) in the occurrence of chronic inflammatory diseases of the upper digestive tract has made it possible to develop new approaches to the diagnosis and treatment of this group of patients [12].

According to the results of the study, disorders of the local immune status of the mucosa are manifested by inflammatory changes in the stomach and duodenum of predominantly allergic origin with the participation of atopic IgE-dependent mechanisms, with a predominance of diffuse forms of lesions of the gastroduodenal mucosa and Hp infection of the antrum [18].

Thus, a significant increase in the content of cells that determine the tissue immune response and an increase in the number of IgE plasma cells should be attributed to the features of the pathomorphosis of the disease in childhood [10]. These studies indicate that in order to further improve the entire system of dispensary and dynamic observation of children with chronic gastroduodenitis, it is necessary to take into account their pathomorphosis. Since there is no clinical and morphological remission of Hp-associated diseases of the gastroduodenal zone for a long time, dispensary observation of patients according to an individual plan with a recommendation of a quarterly examination by a pediatric gastroenterologist is necessary [18]. Parents' attention should be drawn to the need to comply with medical recommendations, informing them about the unfavorable prognosis of chronic diseases of gastroduodenal localization [19].

Against the background of pathomorphosis of erosive gastroduodenitis in childhood, the course of this suffering has its own characteristics: often an atypical, asymptomatic (without pain) onset, rapid progression, leading to the development of atrophy of the mucous membrane (SO) of the upper digestive tract [21] with dysplasia, which is without doubt worsens the prognosis of the course of the disease and further creates a risk of carcinogenesis in a number of older patients [16]. In modern unfavorable conditions, there has been a clear trend towards the progression of the pathological process and the development of complications of the disease. Often, gastroduodenitis transforms into peptic ulcer [20]. It has been convincingly shown that in 60-80% of adult patients, the formation of an erosive-ulcerative process began in childhood [9]. Therefore, the problem of adequate treatment of EHD in children remains very relevant. It has now grown from a purely medical task into an acute social problem, which is associated both with the prevalence of the disease and the high total cost of treatment, leading to significant costs throughout the country [10, 23].

Today, one of the most common infections among the child population on earth is *H. Pylori*.

Features of the clinical picture in children with gastroduodenitis associated with *H. pylori*, the leading is abdominal pain syndrome of moderate intensity (up to 5 points) with localization in the epigastric or pyloroduodenal region [17]. Pain occurred on an empty stomach / at night, stopped mainly by taking medications [12]. Gastroduodenitis associated with *H. pylori* is significantly more often

associated with duodenal ulcer. In addition, children of this group have a higher degree of activity of the inflammatory process according to the results of endoscopic and morphological studies [14].

The optimal scheme of anti-Helicobacter therapy in children with chronic gastroduodenitis is currently the following combination of drugs: bismuth tripotassium dicitrate + nifuratel + macrolide or amoxicillin. With severe hyperacidity, especially in children older than 10 years, three-component anti-Helicobacter therapy should be supplemented with a fourth component - a proton pump inhibitor. For the purpose of immunocorrection in recurrent course, with severe hyperacidity of Hp-associated gastroduodenitis in children older than 10 years, the use of the immunostimulator immunomax is competent [10, 12, 15]. In children with chronic gastroduodenitis, staging of changes in autonomic tone is noted: the period of exacerbation is characterized by predominant activation of the sympathetic link of the autonomic nervous system with hypersympathicotonic autonomic reactivity, and the period of subsidence of exacerbation and remission is characterized by the predominance of vagotonia with an asympathicotonic type of autonomic provision [8].

The lack of restoration of autonomic homeostasis in the period of remission of chronic gastroduodenitis is the cause of impaired regulation of the secretory and motor functions of the upper digestive tract, leading to subsequent exacerbations. In addition, the persisting manifestations of the autonomic dysfunction syndrome lead to a decrease in the body's reserve capacity with an increased risk of adaptation failure and involvement of other organs and systems in the pathological process [3]. In the clinic of chronic gastroduodenitis, most children have various disorders of the nervous system (central and autonomic). In children with autonomic dystonia syndrome, suprasegmental autonomic disorders are predominantly noted.

The severity of neurological disorders is directly dependent on the duration and severity of chronic gastroduodenitis, hereditary predisposition, and a history of neurological disorders [1].

In children with duodenal ulcer and chronic gastroduodenitis, the features of the clinic, vegetative status and the frequency of family history associated with the presence of erosive and ulcerative lesions of the mucous membrane were revealed.

In patients with duodenal ulcer, erosive gastroduodenitis, the prevalence of negative types of parental attitudes (acceptance-rejection, disability) was revealed - 78.4 and 54.3%, respectively [12].

They are also characterized by the influence of situations of chronic action (hostile, abusive family, emotionally rejecting family, family without supervision and care, alien environment outside the family, parental alcoholism, low family income) and emotional oppression. In patients with chronic gastroduodenitis without mucosal erosion, fleeting and acute significant psychotraumatic situations prevailed; harmonious upbringing (social desirability of behavior, symbiosis) was noted more often [7].

In children with duodenal ulcer and erosive gastroduodenitis, in the psychosocial structure of temperament, subject and social ergicity, emotionality, social emotionality and social desirability, neuroticism, introversion were most common, the strength and mobility of nervous processes of inhibition predominated ($p < 0.001$). For patients with superficial gastroduodenitis is most characterized by plasticity, social plasticity, pace, social pace, emotionality, high strength and mobility of nervous processes of excitation.

Reliable direct and inverse intragroup correlations between family and household factors, types of parental attitudes, psychosocial, psychophysiological characteristics were revealed. This indicates the complexity of the mechanisms that trigger psycho-vegetative-visceral disorders.

The following indicators can be used as prognostic criteria for the development of duodenal ulcer: introversion (9.3), disability (7.2), mobility of the inhibition process (7.2), emotionally rejecting family (6.4), impaired nutrition (5.3).

For chronic erosive gastroduodenitis, the predictors are: introversion (8.6), low family income (7.6), mobility of the inhibition process (5.6), impaired nutrition (5.2), emotionally rejecting family (5.1). The nature of the course of chronic gastroduodenitis without mucosal erosion can be predicted by the mobility of excitation processes (5.5); a family that does not provide supervision and care (5.3); extraversion (5.2). The sensitivity of the prediction algorithm is 82% [7].

Findings:

1. The problem of etiopathogenesis, diagnosis, clinic, treatment of children with chronic gastritis, gastroduodenitis, gastric ulcer, duodenal ulcer is relevant, as the number of children with chronic diseases of the gastroduodenal zone is steadily growing.
2. The course of a chronic disease of the gastroduodenal zone has its own characteristics. This is important when choosing further treatment tactics.
3. Chronic gastroduodenitis is rarely a mono-disease.
4. In children with pathology of the gastroduodenal zone, the features of the clinic, vegetative status and the frequency of family history were revealed.

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