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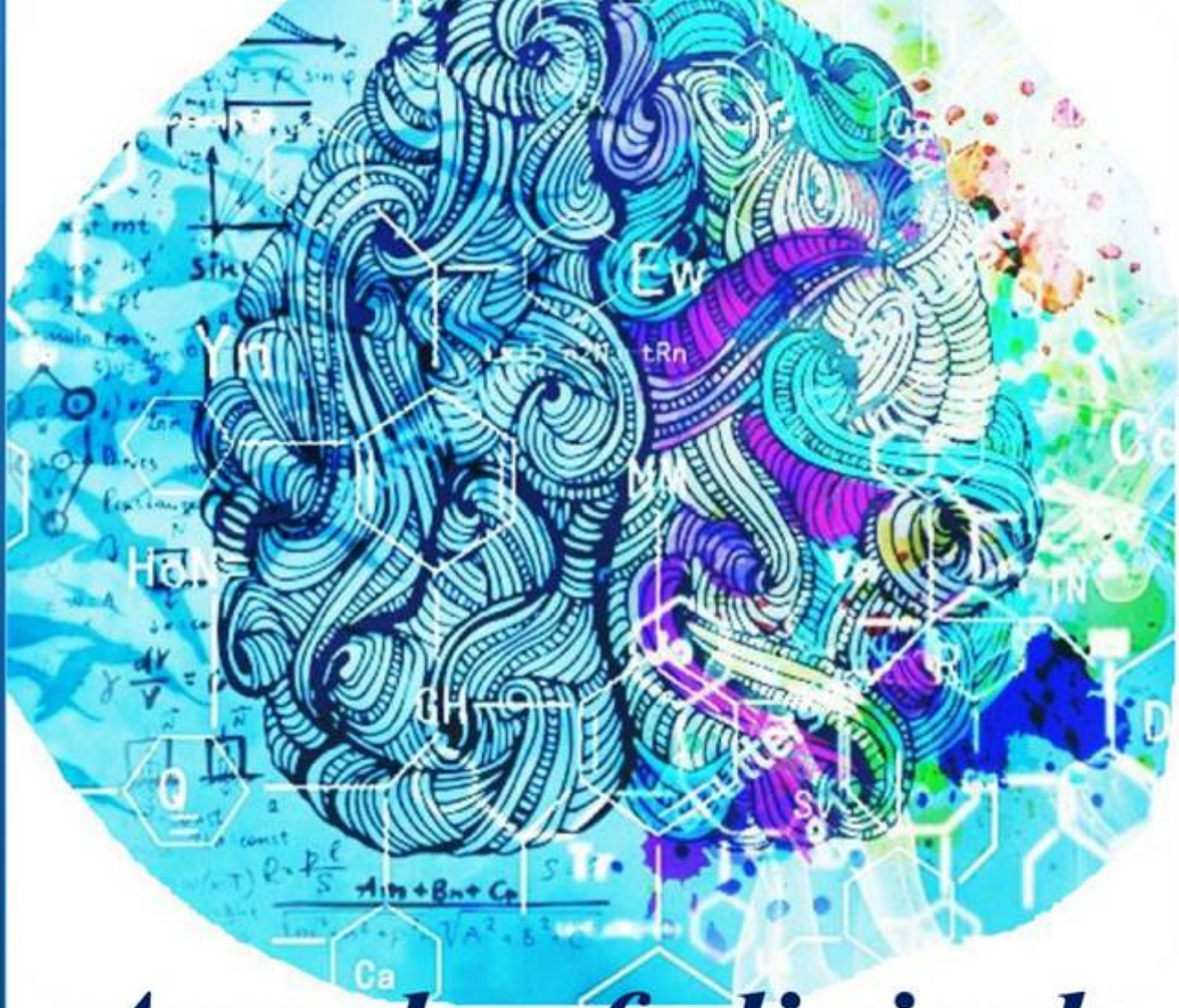

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FEATURES OF THE COURSE OF CHRONIC GASTRODUODENITIS ASSOCIATED WITH HELICOBACTER PYLORI IN SCHOOL-AGE CHILDREN

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ABSTRACT

The article presents the results of an analysis of anamnestic, clinical, laboratory, and comorbidity index indicators in 106 children aged 7 to 16 years with a confirmed diagnosis of chronic gastroduodenitis (CGD). The patients were treated and monitored in the Department of Gastroenterology and the consultative diagnostic clinic of the Republican Specialized Scientific and Practical Medical Center of Pediatrics (RSSPMCP). Of these, 76 (71.6%) sick children (the main group) were confirmed to have Hp associated with CGD, and 30 (28.3%) sick children with CGD were not found to have Hp (the control group). Extrapancreatic manifestations of helicobacteriosis in CGD in children were detected in 71 (93.4%) patients, which worsened the course of the underlying disease.

Keywords: Helicobacter pylori, children, clinic, association, chronic gastroduodenitis, comorbid conditions.

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ОСОБЕННОСТИ ТЕЧЕНИЯ ХРОНИЧЕСКОГО ГАСТРОДУОДЕНИТА, СВЯЗАННОГО С HELICOBACTER PYLORI У ДЕТЕЙ ШКОЛЬНОГО ВОЗРАСТА

АННОТАЦИЯ

В статье представлены результаты анализа анамнестических, клинико-лабораторных и сопутствующих показателей у 106 детей в возрасте от 7 до 16 лет с подтвержденным диагнозом хронического гастродуоденита (ХГД). Пациенты проходили лечение и наблюдение в отделении гастроэнтерологии и консультативно-диагностической клинике Республиканского специализированного научно-практического медицинского центра

педиатрии (РСНПМЦП). Из них у 76 (71,6%) больных детей (основная группа) были подтверждены Hp, ассоциированные с ХГД, а у 30 (28,3%) больных детей с ХГД не было обнаружено Hp (контрольная группа). Экстрапанкреатические проявления геликобактериоза при ХГД у детей были выявлены у 71 (93,4%) пациента, что ухудшило течение основного заболевания.

Ключевые слова: Helicobacter pylori, дети, клиника, ассоциация, хронический гастродуоденит, сопутствующие состояния.

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МАКТАБ ЁШИДАГИ БОЛАЛАРДА HELICOBACTER PYLORI БИЛАН БОҒЛИҚ СУРУНКАЛИ ГАСТРОДУОДЕНИТНИНГ КЕЧИШ ХУСУСИЯТЛАРИ

АННОТАЦИЯ

Мақолада сурункали гастродуоденит (СГДП) ташхиси тасдиқланган 7 ёшдан 16 ёшгача бўлган 106 нафар боланинг анамнестик, клиник-лаборатор ва ҳамроҳ кўрсаткичлари таҳлили натижалари келтирилган. Беморлар Республика ихтисослаштирилган педиатрия илмий-амалий тиббиёт маркази (РИПИАТМ) гастроэнтерология бўлими ва маслаҳат-диагностика клиникасида даволаниб, кузатувда бўлган. Улардан 76 (71,6%) нафар бемор болаларда (асосий гуруҳ) СГД билан боғлиқ Hp аниқланган, 30 (28,3%) нафар СГД билан оғриган бемор болаларда эса Hp аниқланмаган (назорат гуруҳи). Болаларда СГДда геликобактериознинг экстрапанкреатик кўринишлари 71 (93,4%) беморда аниқланди, бу асосий касалликнинг кечишини ёмонлаштирди.

Калит сўзлар: Helicobacter pylori, болалар, клиникаси, ассоциацияси, сурункали гастродуоденит, йўлдош касалликлар.

Introduction. According to the World Health Organization, up to 50% of the population of developed countries and up to 75-95% of the population of developing countries are infected with Helicobacter pylori (Hp). Today, the problems of diagnosis and treatment of HP infection in children are more relevant than ever, regardless of the dynamics of the decrease in the incidence of gastric and duodenal ulcers.

Hp is a bacterium that can survive in an acidic environment of the stomach and in the mucous membrane of the altered duodenum, causing a number of diseases, for example, inflammatory and ulcerative lesions of the upper gastrointestinal tract [1; p.1-16, 8; p.31-52, 12; p.261-282].

Today, it is known that Hp infection is the cause of chronic gastritis in most patients and plays an important role in the development of peptic ulcer disease and stomach tumors [4; p.20-32, 5; p.55-70, 9; p.196-205, 11; p.53-62, 16; p.1-3, 17; p.125-137].

In the population of children aged 7 to 11 years, the prevalence of Hp infection in pathologies of the gastrointestinal tract was more than 50%, and in high school students - 80% [10; p.10-18].

Currently, it is well known that infection with this bacterium occurs mainly in childhood, mainly during the first decade of life. Intrafamily transmission is primary, usually occurring through oral or household contact [7; p.212-239, 18; p.13-23, 19; p.6-30]. In the clinical presentation of the disease, in addition to gastroduodenal pathology, iron deficiency and iron-deficiency anemia based on HP persistence, vitamin B12 deficiency, growth retardation in adolescents, skin diseases, chronic urticaria, atopic dermatitis, food allergy, etc., a total of 120 diseases are possible [13; p.181-188, 14; p.661-664, 15; p.1-20].

In 2021, in the Russian Federation, a group of authors led by Professor L.B. Lazebnik developed "VII National Recommendations for the Diagnosis and Treatment of Hp-Associated

Diseases." However, they are intended only for the adult contingent, and it is necessary to develop similar recommendations for the child contingent. Considering the proven involvement of Hp in the pathology of extra-gastric forms, especially in children associated with chronic gastroduodenitis [2; p.119-129, 3; www.who.int/childgrowth, 6; p.22-29], the relevance of this problem is undeniable and requires deeper research.

Purpose of the study: to study the features of the clinical course of chronic gastroduodenitis associated with Helicobacter pylori in school-age children.

Material and methods. The study examined 106 children aged 7 to 16 years undergoing treatment in the gastroenterology department and the consultative-diagnostic polyclinic of the RSNPMC of the Republic of Uzbekistan. They consisted of 76 (71.6%) children with CHD associated with Hp (main group) and 30 (28.3%) children without CHD associated with Hp (comparison group).

The diagnosis of chronic gastroduodenitis was made according to the classification of A.V. Mazurin (1994).

- the comorbidity index was assessed (Charlson M.E. et al., 1987);

Biochemical testing:

- general blood and general stool tests were performed;
- analysis of helminth eggs in the stool, as well as hidden bleeding;
- Immunoassay with enzyme-linked immunosorbent assay for HP in stool;

Instrumental examination methods.

- EGDS examination in all children was performed using a flexible fibrocolonoscope from Olympus GIF 80;
- all children were examined by ultrasound of the abdominal organs using the "Toshiba Aplio 500" device (Japan);

Statistical processing of the results was carried out by calculating the arithmetic mean (M), standard errors (m), confidence intervals (σ), and significant differences according to Student's T-test using the variational statistics method according to the program developed in the Microsoft Office Excel 2010 package. The results were considered statistically significant at $p<0.05$.

The obtained results and analyses. Among the examined children, the number of children aged 7-11 years of primary school age was 40 (52.6%), the number of children aged 12-16 years of senior school age was 36 (47.3%). CHD associated with Hp was observed in 37 (48.6%) boys and 39 (51.3%) girls, i.e., there was no difference in the quantitative composition by sex. The average age of the children was 11.3±0.6 years. The duration of the disease was 5.4±0.9 years.

In children with HP-associated CHD, allergic diseases and gastrointestinal diseases were found in the offspring, including in group I - 27 (35.3%) and 56 (73.6%), in group II - 2 (6.6%) and 10 (33.3%) ($P<0.05$); ($P<0.01$). In the anamnesis of 27 (35.5%) children of the first group and 2 (6.6%) children of the comparison group, hypersensitivity to food and drugs was revealed (Fig. 1). Of the children diagnosed with HP, 39 (51.3%) had relatives with diseases of the stomach or duodenum. The presence of a correlation between the transmission of Hr-infection from mother to child was confirmed.

The analysis of the level of physical development of children is presented in Table 2. Through this analysis, it was established that there are differences in the physical development of children with CHD associated with Hp. The lowest indicator was found among boys diagnosed with Helicobacter pylori, the average z-score values of their growth were -2.94±0.24, the z-score values of their weight were -2.07±0.26, and the z-score values of BMI were -2.11±0.20, which indicates the presence of a moderate degree of protein-energy deficiency (PEN) in children (Table 1).

Table 1. Indicators of physical development depending on the Hr association in CGD in children

Evaluation criteria	Group I n=76		Group II n=30	
	Girls (n=39)	**Boys** (n=37)	**Girls** (n=15)	**Boys** (n=15)

Height (SO)	-2.07±0.18	-2.94±0.24*	-0.49±0.33	-0.26±0.9
Weight (SO)	-2.04±0.8	-2.07±0.26*	-0.98±0.20	-0.26±0.11
VBI (SO)	-2.08±0.17	-2.11±0.20**	-0.01±0.33	-0.12±0.05

Note: * - P<0.05, ** - P<0.01 statistically significant differences

Among children who were not fully breastfed or were breastfed for a short period, children with HP infection were more common (P<0.05), i.e., in children of the main group, violations of the feeding regimen, delays in the introduction of complementary foods were observed more often than in the comparison group. In the anamnesis, children who were exclusively breastfed up to 6 months were identified in 8 (10.5%) children in the main group and in 18 (60.0%) children in the comparison group. In addition, it was established that malnutrition in these children: the introduction of complementary foods prematurely and in the wrong sequence, as well as the use of food that is not suitable for the child's body, occurred 2 times more often (P<0.05).

In patients of the main group, pain, dyspepsia, and asthenovegetative syndromes were more common, while differences were observed in the prevalence and severity of the listed syndromes. Abdominal pain syndrome was detected in 48 (63.1%) children in the main group and in 20 (66.6%) children in the comparison group.

All 76 (100%) children in the main group and 23 (76.6%) children in the comparison group had symptoms of dyspepsia in the clinical picture. Among the symptoms of dyspeptic syndrome in HP-associated CHD in children, nausea was noted in 27 (35.5%) cases, belching - in 59 (77.6%), (P<0.001); 19 (25%) - indigestion and 16 (21.1%) - bitter taste in the mouth, the data were higher than in the comparison group (respectively) 9 (30%), 13 (43.3%), 5 (16.7%) and 8 (26.7%) (Table 3). All these symptoms, characteristic of Helicobacter pylori, first appeared in 32 (42.1%) children 1-2 months ago, and in the remaining 39 (51.3%) children - more than a year ago. Asthenovegetative syndrome (headache, dizziness, weakness, fatigue) was detected in 67 (88.1%) children in the main group and in 23 (76.6%) children in the comparison group. In the first group, in children with Hp, a decrease in appetite was detected in 52 (68.4%) children, which was significantly more frequent than in the comparison group - 8 (26.6%) (P<0.05).

The feeling of dry mouth also occurred in 18 (23.67%) children in the first group, i.e., more often than in the comparison group - 2 (6.6%). Enterobiosis was detected in more than a third of patients diagnosed with Helicobacter pylori, i.e., 2.2 times more often in 31 (40.7%), while in the comparison group this condition was detected in 15 (50%) children.

During the examination of the coprogram, it was established that creatorrhea was more common in the first group of primary school-aged children, which was probably associated with a deficiency in the secretory-proteolytic function of the stomach, depending on the child's age. In older school-age children, muscle fibers were less common. In the first group, amylorrhea was detected in 53 (69.7%) children, in the second group - in 5 (16.7%). Steatorrhea of the first type and the appearance of neutral fat in the stool, indicating pancreatic insufficiency, were detected in 34 (44.7%) children in the first group and in 5 (16.7%) children in the comparison group. The second type of steatorrhea, the detection of bile acids and soap substances in the stool, i.e., insufficient bile intake into the small intestine and bile stasis, was identified in 34 (44.7%) and 31 (40.8%) children. Examination for hidden bleeding from stool was mainly conducted in patients of the first group.

Through EGDS examination, the following diagnoses were identified: antral erosive gastritis - 24 (31.5%), hypertrophic gastritis - 10 (13.1%), atrophic gastritis - 10 (13.1%), these indicators indicated that the pathological process in the stomach has been ongoing for a long time.

Redness of the lower third of the esophagus, assessed by EGDS as a sign of reflux esophagitis, was found in one-fifth of the examined children in the first group - 22 (20.7%). In this case, a 1:2.9 ratio of the incidence of duodenogastric reflux (DGR) and gastroesophageal reflux

(GER) was noted. In the first group, 57 (74.9%) children of older school age were found to be accompanied by GERD and DGR.

Ultrasound revealed a combination of biliary system diseases - 31 (40.7%) (dyskinesia of the biliary tract, chronic cholecystitis), and pancreatic diseases - 3 (3.9%).

By type of biliary sediment (BED), type 1 BED - 26 (61.9%), type 2 BED - 12 (28.5%); PC type 3 occurred in 4 (9.5%) children, which indicates a statistically significant increase in the frequency of PC type 1 compared to PC type 2 ($p<0.01$) and PC type 3 ($p<0.01$).

Analysis of the obtained data showed that in the group of children with CHD associated with Helicobacter pylori within the digestive system, but outside the stomach and duodenum, the frequency of extra-gastric manifestations associated with HP association was 33 (43.4%) cases: gallbladder dyskinesia - 65 (85.5%) and 0% in the comparison group; biliary sediment - 23 (30.2%) and 0% in the comparison group; dysfunction of the sphincter of Oddi according to the pancreatic type - 35 (46.0%) and 7 (2.3%) in the comparison group; irritable bowel syndrome with constipation - 22 (28.9%) and 5 (16.6%) in the comparison group; irritable bowel syndrome with diarrhea - 6 (7.8%) and 2 (6.6%) in the comparison group; food allergy - 27 (35.5%) and 2 (6.6%) in the comparison group; GER disease - 56 (73.6%) and in the comparison group - 1 (3.3%); protein-energy deficiency - 22 (28.9%) and in the comparison group - 3 (10.0%); Exogastric diseases developing outside the digestive system, but associated with HP, were found in 43 (56.5%) children: changes in the musculoskeletal system (posture disorders - 54 (71.0%) and 4 (30.0%); caries - 50 (65.7%) and 5 (16.6%); autonomic nervous system (vegetative dysfunctions were observed in practically 100% of cases) - 74 (97.3%) and 14 (46.6%); central nervous system (neurosis-like and asthenoneurotic conditions - 40 (52.6%) and 6 (20.0%); as well as nutritional status disorders in the form of excess body weight - 16 (21.0%) and 2 (6.6%). To analyze the comorbidity index (CI) (Table 8), the totality of all comorbidities observed during the study in children was analyzed.

Through this analysis, the following were identified: 1st group - 20 (26.3%) and 11 (36.6%) children with a low CI value (less than 3 comorbidities); 2 group - 26 (34.2%) and 7 (23.3%) children with moderate CI values (4-5 comorbidities), and 3 group - 12 (15.7%) children with high CI values (more than 6 pathological conditions). Thus, in the group of patients with CHD associated with Helicobacter pylori, the spectrum of extra-gastric manifestations associated with Hp persistence manifested outside the stomach and duodenum, but within the gastrointestinal tract in 33 (43.4%) patients, and extra-gastric diseases developing outside the gastrointestinal tract, but with pathological conditions associated with Hp in 38 (50.0%) patients.

Conclusion. Thus, taking into account the co-comorbidity index of CGD associated with Hp, the frequency and severity of many of the identified signs of Helicobacter pylori infection, Hp plays a specific trigger role in the occurrence and development of early gastric and extraintestinal diseases, which should be taken into account in the treatment of these children, which requires additional studies, taking into account the choice of corrective therapy.

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ANNALS OF CLINICAL DISCIPLINE

АННАЛЫ КЛИНИЧЕСКИХ ДИСЦИПЛИН

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