

DOI: <https://doi.org/10.5281/zenodo.10938326>

INFLUENCE OF CLIMATIC AND GEOGRAPHIC FACTORS ON THE DEVELOPMENT OF GASTRODUODENAL PATHOLOGY IN CHILDREN

Zakirova B. I¹, Xusainova Sh. K², Niyazov D.M³.

¹Candidate of Medical Sciences, Associate Professor of the Department of 1 Pediatrics and Neonatology

²Assistant of department 1- Pediatrics and neonatology

³Student of group 217 of the Faculty of Dentistry
Samarkand State Medical University Samarkand Uzbekistan

Abstract: *The purpose of the study is to study the impact of climatic-geographic factors and seasons on the development of gastroduodenal pathology in children. 86 children with gastroduodenal diseases were examined. Studies have shown that in the conditions of the sharply continental climate of Uzbekistan, the exacerbation of the disease is observed mainly in the autumn-winter period, the minimum number of exacerbations occurs in the summer, which dictates the need for anti-relapse treatment and rationally justified meteorological prevention in unfavourable seasons.*

Key words: *Children, gastroduodenal pathology, climatogeographic factors.*

Relevance. Diseases of the digestive system occupy a significant place both in terms of prevalence and severity of clinical manifestations in the structure of childhood diseases [1].

Currently, the proportion of children with gastroduodenal pathology is growing annually, its rejuvenation is progressing, and therefore the development of measures to reduce their proportion requires further study. It should be noted that the origins of gastroduodenal pathology in adults must be sought in childhood [1,2,3].

A significant prevalence of meteosensory reactions among children and adolescents with diseases of the digestive system has been revealed, however, information about the influence of meteosensory factors and the season of the year on the incidence of gastrointestinal tract diseases in different regions is contradictory [4].

The Samarkand oasis is located on the left bank of the Zarafshan River, which originates in the glaciers of the Match mountain node, located at the junction of the Zarafshan and Turkestan ranges. Most of the Zarafshan Valley is occupied by well-irrigated fields of cotton and melons. At the same time, a significant part of the territory is located to the west of the Zarafshan Valley, which has a certain influence on the formation of the climatic conditions of Samarkand.

Numerous studies have noted the influence of climatic and geographical factors on childhood morbidity. Research [4,5] shows that more than 50% of children have chronic diseases of the digestive system and, to one degree or another, react to sudden changes in weather conditions. The authors suggest that weather factors contribute to a decrease in the overall resistance of the child's body, its adaptive capabilities, and lead to the development of more severe and prolonged exacerbations of the disease.

About a quarter of all clinical exacerbations of chronic diseases of the digestive system in children are meteosensory, and therefore their prevention is an important problem.

Insufficient knowledge of the influence of meteorological factors and seasons on the morbidity of the digestive organs in the harsh continental climate of Uzbekistan and conflicting information from researchers prompted us to take up this issue for the further search for new methods of diagnosis and therapy.

Purpose of the study: to study the influence of climatic and geographical factors and seasons on the development of gastroduodenal pathology in children.

Material and research methods. We examined 86 children with chronic diseases of the gastroduodenal zone, hospitalized for inpatient treatment in the gastroenterology department of the Regional Children's Multidisciplinary Research Center.

Diagnosis of diseases was carried out based on the study of anamnesis, clinical and laboratory data and indicators of instrumental research methods. The examination data

of sick children was studied in detail using a specially developed map, taking into account climatic-geographical and seasonal characteristics, as well as genetic factors, and the results of endoscopic research methods. All patients underwent general clinical, laboratory, instrumental and bacteriological examinations. Meteorological data were obtained from the Samarkand zonal hydrometeorological observatory.

Research results. We examined 86 patients with chronic diseases of the gastroduodenal zone. There were 28-32.6% of male children, 58-67.4% of female children, 4-4.6% of children aged 7-8 years, 20-23.3% of children aged 9-11 years and 12-14 years – 62-72.1% patient. There were 27 (31.4%) children living in rural areas and 59 (68.6%) in urban areas. Chronic gastritis was diagnosed in 30-34.9% of patients, chronic gastroduodenitis in 44-51.2%, and duodenal ulcer in 12-13.9% of cases. For these diseases, 48-55.9% of patients visited the hospital for the first time, and 38-44.1% visited the hospital again. Concomitant diseases were: anemia of varying severity and polyhypovitaminosis (72-83.7%), dental caries (40-46.5%), chronic tonsillitis (29-33.7%), helminthiasis (26-30.2 %) and acute respiratory infections, in particular bronchitis and pneumonia (8-9.3%).

Among the diseases suffered, parents of sick children pointed to frequent colds and ARVI (52-60.5%), acute pneumonia (9-10.5%), exacerbation of chronic tonsillitis (42-48.8%), helminthiasis (37-43.0%), food and drug allergies (16-18.6%), viral hepatitis (11-12.8%), acute intestinal infections: salmonellosis, dysentery (4-4.7%), food and drug poisoning (4-4.7%), heart disease and rheumatic fever (3-3.5%), kidney disease (1-1.2%). The rest of the children were not sick.

In sick children, the duration of the disease in most cases (79-91.9%) ranged from several weeks to three years, of which in half of the cases it did not exceed 1 year and only in 7-8.1% of children it lasted more than 3 years. As children age, the incidence increases, which is especially noticeable in relation to chronic gastroduodenitis. Thus, its frequency in children of primary school age (7-8 years old) was 3-3.5%, and in adolescents (12-14 years old) – 41-47.7%.

Exacerbation of the disease in every third patient (29-33.7%) was seasonal: in 14-

16.3% of cases it was observed in the spring, in 12-13.9% - in winter, and only in 3 (3.5%) cases - in the fall; in the remaining patients, the seasonality of exacerbations could not be identified. Patients with gastroduodenitis and peptic ulcer disease were most often admitted to the hospital in the winter, and with chronic gastritis - in the autumn. Every second patient with peptic ulcer disease experienced psycho-emotional changes, which was expressed in insomnia in 51-59.3% of children and increased sensitivity to changes in meteorological and climatic-geographical factors in 29-33.7% of patients.

The discussion of the results. Analysis of studies showed that children with gastroduodenal pathology are admitted to the hospital unevenly: more often in the winter (28-32.5%) and spring (23-26.7%) months, less often in the autumn (20-23.3%) months and minimally in the summer (15-17.4%) time.

The increase in patients admitted to the hospital during the cold season is explained by the greatest mental load at school compared to the summer period. The exacerbation of diseases of the gastroduodenal zone in the fall, when children return to school after the summer holidays, indicates the significant role of stressful situations in the development of this pathology.

In the summer period of the year, we noted the lowest rates of exacerbation. The minimum attendance of patients in the summer is due to the fact that during this period of the year, children, while at home or in summer camps, follow the correct daily routine and diet, are busy with various games, positive emotions predominate, are exempt from classes and there is minimal mental stress. An abundance of vitamins and increased ultraviolet radiation in the region contribute to improving the course of the pathological process and increasing the reactivity of the child's body in the summer. In the summer heat, secretion is inhibited and the release of intestinal juice, organic and inorganic substances, enzymes decreases, tissue oxidative processes decrease, and lipid utilization decreases.

According to the literature, in children with chronic pathology of the gastroduodenal zone, various combinations of several unfavorable factors are more

common [1,6,7,8]: poor diet with a hereditary predisposition to peptic ulcers and gastroduodenitis, stressful situations at school and at home, with psycho-emotional overstrain (school and extra-curricular activities, addiction to TV, computer, lack of sleep, insufficient time in the fresh air, etc.).

Conclusions. Thus, studies have shown that in children in the harsh continental climate of Uzbekistan, exacerbation of chronic diseases of the gastroduodenal zone is more often observed in the autumn-winter period of the year, less often in the spring and minimally in the summer. Children who have the influence of climatic and geographical factors and seasons on the development of exacerbation of diseases of the gastroduodenal zone should be under the close attention of local pediatricians for the purpose of prevention. In this regard, rationally based meteorological prevention and anti-relapse treatment must be carried out during unfavorable seasons of the year.

LITERATURE

1. Garifulina L.M., Turaeva D.Kh. Risk factors for the development of peptic ulcer in children, clinical course and therapy. *J. Hepato-gastroenterological studies*. 2020, no. 1, pp. 20-22.
2. Novikova, V. P. Nutrition and quality of life of schoolchildren suffering from chronic gastroduodenitis / V. P. Novikova, M. Yu. Komisarova, O. M. Tsekh // *Psychosomatic Medicine-2006: mat. First International Congress St. Petersburg, 2006.* - P. 138
3. Eating behavior and food programming in children./Edited by S.V. Belmera, A.I. Khavkina, V.P. Novikova. – M.: Publishing House “MEDPRACTIKA-M”, 2015, 296 p.
4. Rodionov, V.A. Features of gastroduodenal pathology in children in various ecological and biogeochemical zones / V. A. Rodionov, I. E. Ivanova // *Nizhny Novgorod Medical Journal*. 2003. - No. 3-4. - P.8-12

5. Rustamov M.R., Shavazi N.M. Current state of pediatric gastroenterology in Uzbekistan. Journal of hepato-gastroenterology in Uzbekistan. 2020. 31, pp. 6-8.
6. Rychkova S.V. Quality of life of school-age children and the impact of chronic gastroduodenal pathology on it. 2009. 38 p.
7. Jarosz M. Dietary and socio-economic factors in relation to Helicobacter pylori reinfection / M. Jarosz, E. Rychlik, M. Siuba // World J. Gastroenterol. -2009. - Vol.15. - №9. - P.1119-1125
8. The effect of Helicobacter pylori infection on gastric emptying of digestible and indigestible solids in patients with nonulcer dyspepsia / C.S. Chang et al. // Am J Gastroenterol. 2012. - № 91,(3). - P. 474-479.