
**ENDOSCOPIC AND MORPHOLOGICAL FEATURES OF UPPER
GASTROINTESTINAL TRACT PATHOLOGY IN ADOLESCENTS OF SAKHA
REPUBLIC (YAKUTIA)**

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The article is devoted to the actual problem - pathology of the upper gastrointestinal tract in adolescents. Performed endoscopic and morphological study of 188 biopsies from antrum to identify features of the changes in the mucosa in the HP-associated gastritis in adolescents 10 -17 years, living in the Republic of Sakha (Yakutia). Revealed the predominance of neerozivnyh forms gastroduodenitis. The frequency of HP infection in the general structure of surveyed adolescents aged 10-17 years was 58,5%. Chronic gastritis in children 10-14 years are associated with the second and third degrees of HP infection, and in adolescents aged 15-17 years with a first degree of infection and their lack of HP.

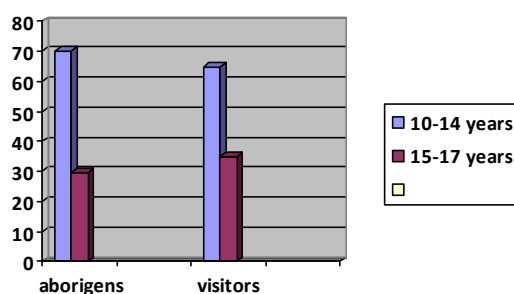
Keywords: endoscopic, morphological features, gastritis, adolescents, *Helicobacter pylori*.

Introduction. A distinct increase in the prevalence of digestive diseases up to 10% a year has been according to epidemiological studies. Medical and social importance of diseases of the gastrointestinal tract is determined by a chronic relapsing course, the development of serious complications in the most crucial period of growth and development. Diseases of the stomach and duodenum occupy a leading position in the structure of gastroenterological disease, which frequency in children and adolescents makes over 60% of all diseases of the digestive tract. Prevalence of diseases of the digestive system, according to official statistics, amounted to 90-150 per 1000 child population, in 2000-2005 yy. by uptake to outpatients, and the detection of gastritis and duodenitis during adolescence increases almost two times in the Republic of Sakha [4, 10]. Chronic inflammatory diseases associated with *Helicobacter pylori* (*H. pylori*) have core weight in the pediatric gastroenterology [1-3,5]. According to several authors [8,9], 60-80% of cases of gastritis and 88-100% of cases of duodenal ulcer are associated with *H.pylori* infection in children . In Russia, the infection rate of children and adolescents *H.pylori* is in the range of 60-70% and increases with the age. But the prevalence of HP-infection may vary depending on regional characteristics, ethnicity, socio-

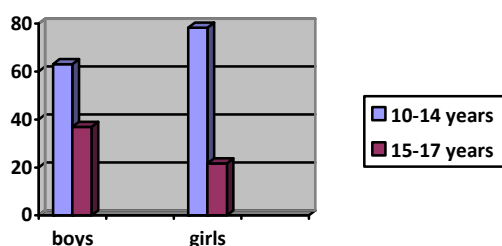
economic status and age of children [6,7]. The survey results also depend on the applied methods of diagnosis of *Helicobacter pylori* infection, which differ in sensitivity and specificity. The study of clinical and endoscopic and morphological features of HP - associated gastritis in children in conditions of extreme climate of Yakutia has relevance in connection with high morbidity, both adults and children of different forms of gastritis. Prolonged, relapsing course of the disease has a negative effect on psycho-emotional tone of children and adolescents, violates the quality of life, contributes to psychological and social maladjustment. Underestimation of the frequency and nature of illness chronic gastritis in childhood and as a consequence, the lack or inadequacy of treatment leads to an increase in the number of people suffering from chronic gastritis in adulthood, and make it more likely to develop complications of gastritis and associated diseases.

The aim of our study is: to identify and evaluate the endoscopic and morphological changes in the gastric mucosa by HP - associated gastritis in adolescents living in the Republic of Sakha (Yakutia).

Materials and methods: 188 primary studies of the upper gastrointestinal tract of adolescents aged 10 to 17 years who were divided according to ethnicity, gender and age were conducted on a clinical basis of the Department of Childhood Illness, Course Health Organization and the Public Health of the Medical Institute, GOU VPO "North-Eastern Federal University named after M.K. Ammosova" in MO «Children's City Hospital» in Yakutsk for the period from 2002 to 2003. Analysis of the structure of applied and examined adolescents revealed no statistically significant differences both in ethnicity and gender in the group, which was presented in a comparable structure indigenous and non-indigenous children (Fig. 1), boys and girls (Fig. 2). When the diagnosis of the stomach diseases, we used classification and grading of gastritis according to the modified Sydney system (October 1996). Endoscopic visual diagnosis was supplemented by taking material for morphological analysis. Sections were stained with hematoxylin and eosin by Romanovsky-Giemsa. The degree of inflammation, activity of inflammation, the presence of atrophy, metaplasia, dissemination of HP were taken into account.



Pic. 1. The structure of the children surveyed, taking into account ethnicity



Pic. 2. Age structure of children by sex

Results and discussion.

In our study children population macroscopic evaluation of mucosa of the upper gastrointestinal tract in 131 adolescents (69.7%) hyperemic gastropathy was found. In 20 persons (10,6%) papules in the antral stomach were determined and they understood as papular gastropathy. Hypertrophic gastropathy was detected in 2 patients (1.1%). Our study showed that the surveyed children isolated involvement stomach occurred in 76 cases (40,4%). Involvement in inflammation mucous membrane duodenum - hyperemic duodenopathy – were determined in 112 children (59.6%). The combined lesion mucous membrane of the esophagus, stomach and duodenum was observed in 11 adolescents (5.9%). Erosive and ulcerative lesions mucous membrane of the stomach and duodenum was detected in 35 cases (18,6%). Erosions of the gastroduodenal mucosa were observed in 17%, ulcers were in 1,6%. One teenager was diagnosed postulcer strain pylorus and duodenal bulb. The study found that age influenced the prevalence of erosive and ulcerative lesions mucous membrane of the upper gastrointestinal tract. Thus, in the age group 15-17 years this rate was 11,2%, in the age group 10-14 years 7,5%. The presence of foamy olive or green contents in the lumen of the stomach was regarded as duodenogastric reflux, and was detected in 30 children (15,6%).

Our studies showed that the overall structure surveyed adolescents aged 10-17 years the incidence of HP-associated gastritis was 58.5%, with prevalence rate HP-contamination in indigenous teenagers. Moreover, in adolescents aged 10-14 moderate degree of HP-contamination were recorded, but in the 15-17 year-olds - a weak degree of colonization by HP were recorded. The study of Loskutova K.S., in the adult population of Yakutia infection is 76.1%. Thus, HP infection in an adult population of Yakutia occurs predominantly in childhood and increases with age, peaking at 10-14 years, since early childhood - a critical period for HP infection.

In analyzing the structure of various degrees of contamination with HP account ethnicity and gender the following data were obtained: a group of indigenous children has weak degree of contamination encountered in 37, 4%, moderate - in 15.3%, expressed degree - in 9,9%. In the group of non-indigenous children weak degree of contamination encountered in 19.3% of cases, moderate - in 17.5% and severe degree - in 12,3%. Thus, according to research HP infection was found statistically more frequently among indigenous children. We found that the sex in a group of non-indigenous children were significantly affected by the infection of HP. For example, boys were less infected with Hp (39,5%) than girls (78,6%) ($p < 0,02$) and the frequency of occurrence among non-indigenous girls (7.5%) was higher compared with indigenous girls (57,2%) ($p = 0,1$). Thus, HP infection has distinction of sex only among non-indigenous children.

As a result, histomorphologic study, 135 adolescents (71.8%) were put diagnosis of superficial gastritis, of whom 83 (61,5%) - superficial follicular gastritis. In 29 subjects (15.4%) occurred erosive gastritis, 22 of them (75,9%) - follicular erosive gastritis. Atrophic gastritis with intestinal metaplasia was diagnosed in 21 adolescents (11.2%). In 3 adolescents (1.6%) pathology in histomorphologic study was not revealed. In the studied biopsies of the surface morphological pattern of gastritis was characterized by inflammatory infiltration of varying degrees of activity, which consisted of leukocytes, lymphocytes, plasma cells mixed with macrophages and eosinophils, often with the formation of lymph follicles with germinal centers. Statistical analysis HP-contamination given histological diagnosis found that the structure of the contamination was dominated by children with chronic superficial gastritis (90.0%). A case of chronic atrophic gastritis HP-contamination declined, as in the cases with intestinal metaplasia, and without it (7,7% and 3,8%, respectively). Thus, a decrease of the frequency of HP-contamination atrophic gastritis, which is consistent with studies of H.I. Maarosa and others having shown that the development of atrophic changes in mucouse HP-contamination significantly reduced, due to worsening conditions for the existence of HP in atrophy due to

changes in the composition of mucus. They noted that in atrophic gastritis superficial epithelium secretes less mucus, which HP is hidden under mucus.

Conclusion. Thus, in the Republic of Sakha (Yakutia) is a high HP infection teenagers, mostly children of secondary school age. At the same time that indigenous children the frequency of HP-contamination was significantly higher than non-indigenous, with a non-indigenous adolescents mild contamination predominated. A characteristic feature is the combined lesions of the mucous membrane of the stomach and duodenum. At the microscopic level, morphological verification of diagnosis superficial gastritis with formation of lymph follicles with germinal centers is dominated. Lymph follicles, formed by a massive attraction of leukocytes, lymphocytes and antibodies in the intrusion of the HP are a response of the mucous membrane. Also, the morphological features of HP-associated gastritis in adolescents in Yakutia are: the early development of subatrophic and atrophic changes in gastric mucosa.

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THE CHARACTERISTIC OF FUNCTIONAL RESERVES AND GUSTATORY SENSITIVITY AT DIFFERENT ETHNOS, LIVING IN REPUBLIC SAKHA (YAKUTIA)

The functional reserves of cardiorespiratory system are investigated in different ethnic groups of Yakutia.. At research of human gustatory sensitivity ethnic dependence of gustatory senses is established.

Keywords: cardiorespiratory system, gustatory sensitivity.

Introduction. The negative anthropogenous factors influence not only ecological systems, but also promote decrease of reserves of health on individual and populations levels, increase of a degree psychophysiological and genetic pressure, growth of a specific pathology and occurrence of the new forms of ecological illnesses, and in some regions and increase of the phenomena depopulation.

In conditions of Far North on the man render influence of the extreme factors - low temperatures, specific photoperiodicity, factors of an electromagnetic nature, heavy oxygen and carbon modes. For radical ethnos of Far North the extremeness conditions of climate is much lower, than for the visitant of the population, in connection with inclusion in adaptive process of genetic mechanisms of adaptation [1, 6]. However, transition to the new forms of labour activity, fast change (in historical prospect) of nomadic life to settled, radical changes of household conditions, character of a feed and other changes of ability to live could affect on system of human homeostasis of the radical inhabitants [2, 3, 5]. In this connection, the significant interest represents study of reserve opportunities at different ethnic groups of the population of republic.

In extreme conditions the man tests maximal temperature, psychological and emotional of loading, is in a condition of a constant pressure. In this connection adequate feed is a means for simplification, simplification of transition from one metabolic of a condition in another. In turn, an inadequate feed breaks adaptation mechanisms of reorganization of an exchange of substances and character of interaction enzymes. So, carbohydrates the type of a feed at the radical inhabitants of North promotes decrease of activity lipase in intestine; further it results in increase in blood lipoproteins of low and very low density [4].

Hence, lipoproteins the type of a feed of the man in North can be considered as original antistress a means for preservation of stability organism [9]. The study of changes of gustatory sensitivity of the man in North, in turn, is not less urgent, than equation of a feed of the man in extreme climatic conditions.

Materials and methods of research. A general characteristic, volume and the methods of research are submitted in the table 1. Two groups of a quota surveyed were generated: 1 group - surveyed - europeoids, 2 groups - inhabitants of a radical nationality.

Results and discussion. The comparative analysis of the characteristics of anthropological from the inhabitants of Republic Sakha (Yakutia) has shown, that on some