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The study of life quality of Republic Sakha (Yakutia) adolescents with chronic gastroduodenal pathology

Summary

The paper presents the results of sociological, clinical and laboratory tests and instrumental surveys of adolescents with Helicobacter pylori-associated disorders of the upper digestive tract. At the study of psycho-emotional and social characteristics of these patients we found that they had significantly low scores on all parameters of emotional, social and physical functioning (emotional status and the possibility to do their daily social responsibilities significantly worsened, adolescents coped with high physical activity, passing over one quarter, carrying heavy things significantly worse) due to severe pain present at exacerbation of chronic gastroduodenal pathology. On a background of anti H. pylori and symptomatic treatment we found increase of quality of life indexes on all scales of functioning.

112 children out of 188 adolescents agreed to participate in this survey. Patients were divided into the following groups:

(1) by age: 8-12 years old (n = 41) and 13-18 years old (n = 71),
(2) by sex: boys (n = 57) and girls (n = 55),
(3) by Ethnos: indigenous (n = 131) and non-indigenous (n = 57).

The patients were examined and treated according to the standards for this disease. The incidence of HP-associated gastritis was 58.5%, with a higher frequency of contamination of the HP gastric mucosa among adolescents from indigenous population. Moreover, a moderate degree of contamination by HP was incorporated among adolescents of 10-14 years. Weak degree of colonization by HP was reported in the group of 15-18 year-olds. For the group of indigenous children weak degree of contamination occurred in 37, 4%, moderate - in 15.3%, severe degree - 9.9% of cases. For the group of non-indigenous children weak degree of contamination occurred in 19.3%, moderate - 17.5%, and severe degree - 12.3% of cases. We found that these patients had significantly lower scores on all parameters of emotional and social functioning (significantly worsened emotional status and to the possibility of their daily social responsibilities) in the study of psycho-emotional and social aspects of children with chronic gastroduodenal pathology. We found relatively low rates of adolescents in all parameters in the study of physical functioning. Teenagers, which were observed, perform worse with great physical effort, passing one quarter, carrying heavy things. It is due to severe pain present at exacerbation of chronic gastroduodenal pathology. On a background of H-pylori and symptomatic treatment we found increase of the quality of life for all scales of operation.

Keywords: quality of life, chronic gastroduodenal pathology, PedsQL™4.0, adolescents.

Introduction

The overall incidence of all ages increases by 6.5% every year in Russia over the past 5 years. The health of adolescent children is of particular concern. 70% of children have a chronic pathology, socially constructed and socially significant diseases [3]. The most common childhood diseases include diseases of the digestive system. They are second in frequency after respiratory diseases (including SARS). The incidence of children with chronic forms of gastrointestinal diseases increased over the last five years, almost 10% a year in Russia. Overall, in the five years it has grown by almost 40%. The frequency of digestive diseases was 212.2 to 1,000 children in 2010 year (in 1999 it was 120.0).

It is generally recognized now that H-pylori are the major cause of and a leading factor in the pathogenesis of chronic gastritis, gastric ulcer and duodenal ulcer [2, 3]. H-pylori infection associated gastritis 60-80% and 88-100% of duodenal ulcer disease in children, according to some authors. H-pylori infection rate among children in Russia is in the range of 60-70%. And it increases with age.

Detection of gastritis and duodenitis increased almost twice among adolescents. The increased incidence among adolescents is associated with a critical period of intense growth and restructuring in neuroendocrine regulatory support systems. Puberty exhibits unique properties. It acts as a natural functional stress test. It is a powerful autonomic, endocrine and immune reconstruction against a growth of physiological shock, menarche and deviations in pubertal maturation, and manifested over serious violations of psychosocial adaptation [3, 5, 8 and 9]. Prolonged and recurrent gastroduodenal diseases affect the quality of life. As a result the process of adaptation to environmental conditions is violated. Psychological problems and social plan appear (emotional instability, lack of self-confidence, sensitivity and anxiety, high anxiety, conflict, increased sensitivity to stress factors). [7]

At the present stage of medicine development the quality of life is recognized as one of the key criteria that reflects the state of health and general well-being. Quality of life is an integral characteristic of the physical, psychological and social functioning for child. It is based on his subjective perception and / or the subjective perception of the parents or other people from his or her immediate environment [1, 4 and 9]. The study of children's lives is a new topical area of interdisciplinary research in the national healthcare. It extends the standardization of methods of treatment, provides individual monitoring of the patient to the assessment of early and late outcomes, development of predictive models of flow and outcome of the disease [1, 4, 5, 12 and 13]. Specially designed questionnaires are a basic research tool for the quality of life research that has certain psychometric properties such as reliability, sensitivity and validity.

The purpose of this study is to examine the objective and subjective indicators of health status of adolescents with HP-associated gastroduodenal diseases.

Materials and methods: epidemiological (clinical and epidemiological, statistical, analytical), medical and sociological (the methods of full-time and part-time survey), instrumental, laboratory.

Assessment of quality of life among adolescents carried out with use of international common questionnaire called “Pediatric Quality of Life Inventory - PedsQL™ 4.0”. The Russian version of the general questionnaire PedsQL was used for children of 8-18 years. It was successfully validated in Russia.

PedsQL questionnaire has been chosen by us as a simple and convenient tool to fill in statistical analysis and interpretation of results. It has separate forms to be filled in by children and parents. It can be also be used for studying the quality of life of healthy children as well as patients with

various diseases, including, over time or in the process of treatment and rehabilitation. [15] We chose two forms of the questionnaire to be filled in by children of 8-12 and children of 13-18 years. The tool consists of 23 questions which are united into the following scales: - "physical functioning" (FF) - 8 questions (to estimate mobility, walking, running and pain); - "emotional functioning" (EF) - 5 questions (to estimate sleep, anxiety, mood , fear and sadness); - "social functioning" (SF) - 5 questions (to estimate interaction with other children); - "role functioning in the school or kindergarten life "(RF) - 5 questions (to estimate the role functioning in children's groups, Frequency of skipping school lessons due to illness or the need to visit a doctor). In the process of re-encoding the data can be obtained from the following summary scores: physical component summary score of quality of life (including the scale of FF), psychosocial summary score (total range of emotional, social and role functioning), and estimated the total scale (total score on all scales of the questionnaire). The total number of points after the procedure of transcoding is calculated on a 100-point scale (transferring the raw data to score the quality of life). The higher the total value, the better quality of life is [6, 10, 11, 14, and 15].

During the period from 2009 to 2011 we have done 188 primary studies of the upper gastrointestinal tract in adolescents from 10 to 18 years, who were divided by ethnicity, gender and age. The study included only those children whose parents gave informed consent in writing form. Exclusion criteria were contraindications to endoscopic examination, the use of antibiotics, bismuth, H2-blockers or proton pump inhibitors within 30 days prior to the study or acetylsalicylic acid for three days before the procedure. Analysis of the structure for applied and examined adolescents showed no statistically significant differences in both ethnic and gender group with what was presented in a comparable structure of indigenous and non-indigenous children, boys and girls.

In the diagnosis of diseases of the stomach we used classification and grading of gastritis according to the modified Sydney system (October 1996). Endoscopic examination was performed with the help of video endoscopes EVIS CV 160.

112 children out of the 188 teens agreed to participate in this survey. Patients were divided into the following groups:

1. By age:
   8-12 years (n = 41) and from 13-18 years (n = 71);
2. By sex:
   boys (n = 57) and girls (n = 55).

Taken into account that children accessed from different ethnic groups, we carried out an analysis of the structure of children who applied by ethnicity. In this case, the children of indigenous nationalities are 131 people (Yakut, Evens and Evenks). Non-indigenous are 57 people (children of other nationalities who have arrived at different times from the regions of Russia and CIS countries).

The patients were examined and treated according to the standards for this disease. Diagnosis was based on a comprehensive survey including complaints, medical history (family history of H-pylori infection, the errors in the diet), and clinical examination (dyspepsia, pain on palpation in the epigastria, heartburn) as well as laboratory and instrumental methods (test - system Helik® with a digital camera, FEGDS and common analyzes).

Results

Our studies showed that the overall structure of the surveyed adolescents aged 10-18 years the incidence of the HP-associated gastritis was 58.5%. Frequency of contamination of the HP gastric mucosa dominates among adolescent of indigenous population. Moreover, a moderate degree of contamination of the HP was reported among adolescents of 10-14 years of age and a weak degree of HP dissemination for the group of 15-18 year-olds.

We obtained the following data in the analysis of the structure of various degrees of contamination

of the HP considering ethnicity and gender. For the group of indigenous children: weak degree of contamination occurred in 37, 4% of cases; moderate degree in 15.3% and severe in 9.9%. . For the group of non-indigenous children: weak degree of contamination occurred in 19.3% of cases, moderate in 17.5%, and severe degree - 12.3%. Thus, statistically the infection was detected more frequently among indigenous children according to HP study.

We have found hyperemic gastropathy among 131 adolescents with macroscopic evaluation of the mucous membrane of the upper digestive tract (for the studied pediatric population, accounting for 69.7%). Papules in the antrum of the stomach were found in 20 people (10.6%). It is interpreted as papular gastropathy. Hypertrophic gastropathy was found for 2 patients (1.1%). Our study showed that the tested children isolated lesion of the stomach occurred in 76 cases (40.4%). Involvement in inflammatory mucosa hyperemic duodenopatiya WPC was detected within 112 children (59.6%). Combined lesions of the mucous membrane of the esophagus, stomach and duodenum were observed among 11 children (5.9%). Erosive and ulcerative lesions of the mucous membrane of the stomach and duodenum were detected in 35 cases (18.6%). Erosion of gastroduodenal mucosa was observed in 17% and canker in 1.6% of cases. One teenager was diagnosed post peptic strain pylorus and the duodenal bulb. The study found that the age had an effect on the prevalence of erosive and ulcerative lesions of the mucous membranes of the upper digestive tract. Thus, this figure was 11.2% in the age group of 15-18 years, and in the age group of 10-14 years it was 7.5%. The presence of foam content or olive green in the lumen of the stomach was seen as duodenogastric reflux. It was diagnosed among 30 children (15.6%).

Analysis of the quality of the data presented in Table 1 and Table 2 shows that when filling in the forms in the Russian version of the questionnaire have been involved all the answers to every question. We have found fairly significant differences in the parameters of the quality of life among children of 8-12 and 13-18 years with HP-associated pathology of the upper gastrointestinal tract before treatment on all scales of operation. It is indicated to reduce the parameters of quality of life on all scales for girls of 13-18 years, compared to girls of 8-12 years. For boys on the contrary, in the group of 13-18 years, there is an increase quality of life parameters compared with 8-12 years.

Physical functioning among adolescents with chronic gastroduodenal pathology is an important indicator of life as for any other patient. We have detected low levels of all the parameters in the study of physical functioning among adolescents. Teenagers, whose we observed, significantly worse cope with high physical activity, the passage of one quarter, carrying heavy objects. This is due to severe pain present at exacerbation of chronic gastroduodenal pathology. We have found an increase in quality of life for all scales of functioning on a background of H-pylori and symptomatic treatment. Thus, adolescents reported that they felt better to run and participate in active games, to exercise and to take a bath after full treatment. Probably reduced physical functioning is associated with clinical conditions of diseases that were aggravated by physical activity.

We have found that the patients had significantly lower scores on all parameters of emotional and social functioning in the study of psycho-emotional and social aspects among adolescent children with chronic gastroduodenal pathology. (Emotional status and possibility of fulfillment of their daily social responsibilities seriously degrades). They often been sad and felt scary. There was a sleep disorder. It was hard for them to play with other children. They had difficulty in communicating. In analyzing the data it was found that patients were less likely to experience feelings of fear, anger and depression after the treatment. Social exclusion is also decreased, and the role-playing activity in school has increased.

We observed a significant decrease in quality of life for all scales of operation despite the localization of the process during exacerbation of chronic gastroduodenal pathology. Such a significant decrease is due to the fact that regulatory peptides are synthesized in the duodenum. These peptides provide processes not only in the digestive tract, but they also take part in neuroregulation. Therefore it is called the "pituitary" gastro-intestinal tract. The results show the system-level changes in the local host's gastroduodenal lesions.

Conclusion

Thus, there is a high Helicobacter Pylori infection among adolescents in the Republic of Sakha (Yakutia) and it is mainly among middle-school children. The frequency of contamination of the HP was significantly higher among indigenous children than non-indigenous. Moreover, mild contamination prevailed among the non-indigenous children. A combined lesion of the mucous membrane of the stomach and duodenum is a characteristic feature.

The HP-associated gastroduodenal pathology has a significant negative impact on quality of life during an exacerbation (data questionnaire Pediatric Quality of Life Inventory - PedsQLTM 4.0). We noticed the improvement in quality of life for all scales functioning on a background therapy. Thus, quality of life can be used as an integral measurement for health status, based on a subjective assessment of the physical, psychological and social well-being. It can be widely used to assess the effectiveness of the treatment.

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TABLE 1

Life quality parameters of children with chronic gastroduodenal pathology before treatment according to sex and age (n = 112)

Life quality parameters	8-12 years old		13-18 years old		p<
	Boys n=24	Girls n=17	Boys n=33	Girls n=38	
FF	57,31±4,0	71,0±18,7	62,41±9,6	62, ±320,4	0,000
EF	62,5±24,8	73,82±1,9	62,02±0,3	64,62±2,7	0,000
SF	80,8±22,5	92,01±3,0	86,61±8,7	85,5±17,7	0,000
RF	55,4±17,6	65,91±5,4	59,11±8,9	59,31±9,5	0,000
PSF	66,3±18,1	77,21±3,7	68,41±6,7	68,7±18,1	0,000
O. mark	63,4±14,9	75,71±3,7	67,5±14,4	67,91±5,4	0,000

$p \leq 0,05$ statistically significant difference between groups.

TABLE 2

Life quality parameters of children with chronic gastroduodenal pathology after treatment according to sex and age (n = 112)

Life quality parameters	8-12		13-18		p<
	Boys n=24	Girls n=17	Boys n=33	Girls n=38	
FF	81,9±11,7	88,8±11,6	86,0±11,7	84,9±13,8	0,000
EF	91,0±11,8	93,5±9,9	90,1±15,3	84,5±18,7	0,000
SF	94,6±12,9	96,2±10,5	96,2±9,3	93,3±11,5	0,000
RF	76,9±14,4	82, 1±12,6	80,5±14,8	78,91±6,1	0,000
PSF	87,5±9,9	90,6±9,5	88,9±11,2	85,6±12,7	0,000
O. mark	86,1±9,3	67,5±9,6	88,2±10,7	85,4±12,1	0,000

$p \leq 0,05$ statistically significant difference between groups.

Credits

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