Ministry of Health of the Republic of Belarus
Education Institution
"Gomel State Medical University"

Department of Pediatrics with the course of the Faculty of Advanced Training and Retraining

Author:
I.V.Belomytseva, assistant

METHODOLOGICAL GUIDELINES

for a practical exercise
by a teacher with students
4th year of the Faculty of foreign students,
trainees in speciality 1-790101 in the discipline of pediatrics

Topic: Diseases of the stomach and duodenum.

Time: 6 hours

Approved at the meeting of the Department of Pediatrics with the Course of the Faculty of Advanced Training and Retraining
(protocol №. 8 of the 14th of June 2022)

2022

LEARNING AND EDUCATIONAL OBJECTIVES, TASKS, MOTIVATION FOR LEARNING THE TOPIC

Learning objective:

- to form students' basic professional competence while studying the discipline of Pediatrics according to the curriculum
- to form students' scientific knowledge of diseases of the digestive organs in children and their prospects of use in professional activity; skills and abilities necessary for work with patients of different age, knowledge of clinical manifestations of diseases, treatment and diagnostic measures, bases of rehabilitation and prophylaxis.

Educational objective:

- to foster students' sense of professional responsibility of a future medical worker;
- formation of professionally significant and socially-psychological qualities of the doctor's personality in the system of doctor-nurse-patient relations;
- formation of students' responsible attitude to their future professional activity;
- formation of academic and work discipline, discussion of disciplinary issues (attendance at lectures and practical classes, unexcused absences, tardiness, arrears on missed classes).

Objectives:

As a result of the study session, the student will

know:

- modern concepts of the etiopathogenesis of inflammatory diseases of the gastroduodenal system;
- modern classification of inflammatory diseases of the gastroduodenal system in children;
- clinical manifestations of inflammatory diseases of the stomach and duodenum;
- the necessary amount of instrumental and laboratory tests for diagnosing diseases of the stomach and duodenum;
- groups of drugs for the treatment of diseases of the gastroduodenal system;
- principles of surveillance of children with chronic inflammatory diseases of the stomach and duodenum.

be able to:

- by the method of careful collection of anamnesis, selection of information from the history of development to establish the connection of the identified changes with the occurrence of diseases of the stomach and duodenum;
- objectively assess the state of the gastrointestinal tract and identify the main symptoms of gastroduodenal system lesions;
- determine the group of nosologies for differential diagnosis;
- outline the examination plan for a patient with gastrointestinal lesions;
- interpret the results of the examination;
- prescribe an adequate therapy for a patient with a disease of the gastroduodenal system;

- make a plan for the follow-up of the patient.

know:

- methods of objective (palpation, percussion, auscultation) and additional (measuring, laboratory, instrumental, histological, immunological, etc.) examination
- communicate with patients of different ages and their parents, medical staff.

Motivation for mastering the topic:

The knowledge and skills acquired during the study of the discipline of paediatrics allow motivating the students to improve theoretical and practical knowledge to carry out early diagnosis, treatment and complex rehabilitation measures for children with diseases of the stomach and duodenum or with suspicion of them; tactics of emergency care.

MATERIAL EQUIPMENT

Tables on the topic of the class, medical records of inpatients, set of haemograms, haemostasiograms, biochemical blood tests, urine tests, ultrasound findings of internal organs, tonometers, phonendoscopes, scales, stadiometer; assignment bank for independent work; selection of thematic patients in the hospital departments.

CONTROL QUESTIONS FROM RELATED DISCIPLINES

1. "Microbiology:

- . Characterisation of Helikobacter pylori;

2. "Normal Physiology":

- Interpretation of normal constants in the age aspect;
- The secretion of gastrointestinal enzymes;
- Stages of breakdown of major food ingredients in the digestive tract.

3. "Pathological Physiology":

- Pathomorphological changes in the mucosa of the gastrointestinal tract in inflammatory diseases of the stomach and duodenum.

4. "Pharmacology:

- Classification of proton pump inhibitors, antacids, gastrointestinal mucosal repair agents;
- Mechanism of action, side effects of drugs used in gastroenterology.

5. "Propaedeutics of Internal Medicine

- Mechanisms of basic pathological syndromes (painful, dyspeptic, asthenoneurotic, anaemic)

6. "Internal Medicine:

- Schemes of anti-chelobacter therapy

7. "Infectious Diseases":

- Diseases with abdominal syndrome.

8. "Surgical diseases":

- Differential diagnosis of internal organ haemorrhage.

CONTROL QUESTIONS ON THE TOPIC OF THE CLASS

1. Chronic gastritis, gastroduodenitis: etiology, pathogenesis, classification, clinic.

2. Diagnostic criteria, treatment and prognosis of chronic gastritis, gastroduodenitis. 3. Peptic ulcer disease: etiology, pathogenesis, classification, clinic. Features of the course of peptic ulcer in children.

4. Diagnostic criteria, complications, treatment and prognosis of peptic ulcer. Indications for surgical treatment of peptic ulcer.

5. Dispensary supervision of children with chronic inflammatory diseases of the stomach and duodenum.

PROCESS OF THE STUDY

Theoretical part

Chronic diseases of the digestive organs are among the most common diseases of childhood. Their prevalence now exceeds 100 per 1000 of the child population.

Over the last 20 years the prevalence of gastroenterological diseases in children has increased by more than 30%, and in the areas affected by the Chernobyl accident - by 3-5 times. The prevalence of peptic ulcer is 1.6±0.1 per 1000 children. The peak of morbidity is at the age of 11-12 years. Peculiarity of a course of chronic diseases of gastroduodenal system at children is low-symptomatic course at half of patients, leveling of exacerbations seasonality.[9]

All facts given above dictate the necessity for every doctor to know this group of diseases.

Practical part

The instruction of students is carried out, the attention to the rules of the internal order, features of work in paediatric department №4 (profile gastroenterological) is paid. The selection of patients is carried out in accordance with the theme of the lesson. During practical work the student must carry out:

- collection of complaints and anamnesis of the disease,
- perform the clinical examination of the child,
- make a preliminary diagnosis and develop a plan of examination,
- Interpret the results of the laboratory and instrumental methods of investigation,
- Formulation of the final clinical diagnosis,
- Formulation of a treatment and follow-up plan
- prescribing medicines.

Monitoring the learning of the topic

1. Demonstration of case studies with clinical case studies:

- chronic gastritis,
- chronic gastroduodenitis,
- gastroesophageal reflux disease,
- Uncomplicated peptic ulcer (gastric, 12 duodenal),
- peptic ulcer (stomach, duodenum) with complications,
- vegetative dysfunction: GER, GER.

2. Analysis of EFGDS protocols, conclusions of pathohistological examination of biopsy specimens of gastrointestinal mucosa.

3.Solution of situational tasks.

Task №1.

4. Clinical tasks and test control.

Task №1.

Petya, 13 years old, admitted to the paediatric clinic with complaints of abdominal pain, more often on an empty stomach, sometimes "nighttime" pain; periodic vomiting, heartburn, sour belching.

He had been ill for 2 years. Three times he was treated in hospital. Diagnosis of peptic ulcer disease was confirmed by fibrogastroduodenoscopy, which revealed an ulcerous defect on the posterior wall of the bulb of the 12th bowel (0.5x0.5 cm). The patient was treated with solcoseril, sea buckthorn oil, methyluracil, vicalin, vitamin "U", parenteral administration of vitamins B1 and B6. On the fifth day of the child's stay in the hospital at 6 p.m. repeated vomiting appeared. Vomit of "coffee grounds" type, increased abdominal pain. The boy became pale, lethargic. Dizziness, tinnitus appeared, and he was covered with cold sweat. On auscultation of the heart there was a systolic murmur at the apex, tachycardia, 112 beats per minute. The blood pressure was reduced to 80/55 mmHg. Immediately blood work was done: Er. - The blood count was 3.8x1012/l, Hb -120 g/l, stain - 0.9, reticulocytes - 6‰, L - 15.1x109/l, platelets - 420x109/l, sed rate - 32 mm/hour.

After 3 hours blood count: Er. - 2.4×1012/l, Hv - 62 g/l, color - 0.7, reticulocytes - 18‰, L - 14.9×109/l, platelets 410×109/l, sed rate - 44 mm/hour, Ht - 0.20.

QUESTIONS:

1.Your presumptive diagnosis, differential diagnosis.

2. Your treatment tactic between the two blood tests.

Task №2.

An 11-year-old boy complains of pains in the perineal region and epigastrium 1.5-2 hours after a meal, sometimes in the morning on an empty stomach. Air belching, nausea. He had been complaining of abdominal pain for 7 years but never carried out any tests or treatment. Does not follow daily routine, frequent dry eating, long breaks in meals. Obviously: Skin is pale pink. Abdomen was not swollen, Mendel's symptom (+) in epigastrium, with superficial and deep palpation painfulness in epigastrium and pyloroduodenal area. Liver +1 cm, soft elastic edge, painless. Stool was regular, once a day.

General blood count: Hb - 132 g/l; Rhe - 4.4x1012/l; C.P. - 0.9; Leuk - 7.3x109/l; b/w - 3%, c/w - 47%, l - 3 8%, e - 4%, m - 8%; SLE - 5 mm/hour. Esophagogastroduodenofibroscopy: esophageal mucosa was pink. Cardia was closing. Antral mucosa was nested hyperemic, edematous, contained mucus, duodenal bulb and postbulbar areas were not changed. Two mucosal biopsy fragments were taken for HP. Biopsy test for HP: (++).

Task:

1. What is your diagnosis?

2.What additional examinations need to be carried out? Methods of determining HP?

3. Prescribe a treatment.

GUIDELINES FOR ORGANISING AND CARRYING OUT THE CSR

The time allocated for independent work is used by students for:

- Studying the topics (issues) for independent study;
- problem solving;
- research and creative assignments;
- preparing thematic reports, presentations;
- completing practical assignments;
- designing information and demonstration materials (stands, posters, charts, tables, newspapers, etc.);
- compilation of thematic selection of literary sources, internet sources;
- Duty in health care organisations;
- compiling a review of scientific literature on the issues of the class.
- preparation of lectures, discussions with patients on the prevention of diseases of the stomach and duodenum and the formation of a healthy lifestyle;
- composing case studies on the topic of the class.

The main methods for organizing independent work:

- making a report;
- Examining topics and problems that are not covered in the class;
- preparation and participation in active forms of learning.

The list of SIW tasks:

- study of clinical guidelines (examination and treatment protocols) for children with gastroduodenal pathology.
- drawing up situational tasks on the topic of the class:

chronic gastritis,
chronic gastroduodenitis,
gastroesophageal reflux disease,
uncomplicated peptic ulcer (stomach, 12 duodenum),
peptic ulcer (stomach, duodenum) with complications,
autonomic dysfunction: GER, DGR.

- Write prescriptions for the main groups of drugs used in gastroenterology.
- Do a research paper on the topic of the class.

GUIDELINES ON THE ORGANISATION AND IMPLEMENTATION OF THE GSSS

The recommended forms of GSSS organisation are:

1. preparation of abstracts on proposed topics;
2. solving situational tasks on the theme of the class;
3. tests on the subject of the class.

List of GSSS tasks:

1. Prepare an abstract on the proposed topic:

- Congenital malformations of the gastrointestinal tract.

- Barrett's oesophagus

2. solve the situational tasks:

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Task:

1. What is your diagnosis?

2.What additional examinations need to be carried out? Methods of determining HP?

3. prescribe a treatment.

Task №3.

A 12-year-old boy has been suffering from pains in the epigastric region for the last year after eating spicy, fried, rich food and carbonated water. Seldom pains behind sternum and feeling of difficulty in passing "lumpy" food. Heartburn and belching are of concern. There is also pain in epigastrium when eating for a long period of time. Mother has gastritis, father has gastroduodenitis. The abdomen is not enlarged, soft, under deep palpation there is slight heartburn and soreness under the xiphoid process, soreness in the pyloroduodenal area as well. The liver is at the edge of the rib arch, painless. Stools were regular and regular.

Additional findings: General blood count: Íb - 136 g/l; C.p. - L - 7.2×109/l; p/d - 3%, s/d - 54%, e - 3%; l - 32%, m - 8%; sed rate - 7 mm/hour. Esophagogastroduodenoscopy: esophageal mucosa in the lower third was hyperemic, edematous, flame-type hyperemia, large erosion up to 0.3 cm on the posterior wall, cardia was not sufficiently closed, located below the esophageal orifice of the diaphragm. Bile in the stomach, antral mucosa hyperemic, moderately edematous. The mucous membrane of the bulb of the duodenum and postbulbar sections is not changed.Ultrasound of the abdominal cavity organs: the liver is not enlarged, its parenchyma is homogeneous, echogenicity is normal. Gallbladder 52x30, its contents homogeneous, wall thickness 1 mm. The pancreas is not enlarged, with smooth contours and normal echogenicity.

Biopsy test for HP infection: negative.

Task:

1. your diagnosis?
2. Prescribe an additional plan of investigation.
3.Prescribe a treatment.

Task №4.

Boy, 10 years old, for the last year has had epigastric pain in the morning before breakfast, 1-2 hours after a meal, at night and sometimes immediately after a meal. The pain is relieved by eating, nostropa. Dyspeptic complaints: burping after meals, nausea, rumbling in the stomach when hungry. Presented exacerbation within a week after stressful event at school. Family history: Mother has chronic gastritis, paternal grandfather has duodenal ulcer, maternal grandfather died of gastric cancer. Objecc tive: Pale pink skin, clean. Breathing is vesicular, no rales, BP 20 bpm. Heart - tones clear, sonorous, heart rate - 72 bpm. The abdomen is not swollen, soft, Mendel's symptom is positive in the epigastrium, painfulness at palpation in the epigastrium and pyloroduodenal region, liver at the edge of the rib arch, palpation is painless. Spleen is not palpable. Stools were regular and regular.

Blood tests: Clinical blood count: Hb 88 g/l, er. 3.1x1012/l, CP 0.89, leuk.- 5.6x109/l, p/u 3%, s/u 56%, eos. 2%, lymphocytes 33%, monocytes 6%, sedimentation rate 7 mm/hour. Urinalysis: Color light yellow, full transparency, relative density 1019, pH 5.0, no protein, no sugar, Leuk. 1-2-3 in p/zr, squamous epithelium - 2-3 in p/zr, mucus - small amount. Esophagogastroduodenoscopy: mucosa of the esophagus was pale pink. Moderate amount of turbid mucus in the stomach, in the body and antral part of the stomach there were multiple multifarious swellings, focal hyperemia. The pylorus is rounded, gaping. The bulb of medium

size is empty, deformed due to mucosal edema. The mucous membrane of the bulb of the duodenum was hyperemic, edematous. On the anterior wall of the middle third a slit-shaped ulcer with flat edges and shallow bottom filled with fibrin was defined. The size of the defect was 0.3 x 0.6 cm. On the posterior wall at the same level there was a slit-shaped ulcer with smooth edges and a deep fundus with detritus overlay, 0.4x0.6 cm in size on the posterior wall. A biopsy of the mucosa of the antral region was taken. Biopsy results: Helicobacter pylori mucosal contamination of the antral mucosa was found to be grade 2.

Task:

1.Your diagnosis?

2. Prescribe an additional plan of investigation.

3.Prescribe treatment.

Task №5.

One-year-old girl, 11 years old, one year old, complains of "hungry" pains in epigastrium, appearing in the morning on an empty stomach, 1.5-2 hours after a meal, at night, which are relieved by taking food. The patient is bothered by sour belching. Mother has duodenal ulcer, father has gastritis, maternal grandmother has duodenal ulcer. Obviously: Pale pink skin, clean. Abdomen: Mendel syndrome is positive in the epigastrium. On superficial and deep palpation painfulness in epigastrium and pyloroduodenal area, also painfulness in Meio-Robson point. The liver is not enlarged. Other organs showed no pathology.

Examination: General blood count: er - 4.2x1012/l, Hb - 128 g/l, stain - 0.91, leukemia - 7.2x109/l.- General blood count: er - 4.2×109/l; e - 3%, p/u - 3%, s/u - 51%, l - 36%, m - 7%, sed rate - 6 mm/hr. Esophagogastroduodenoscopy: esophageal mucosa was pink, cardia was closed. In the stomach there was turbid mucus, mucosa with focal hyperemia, in the antrum there were multiple multifaceted bulges on the walls. The mucous membrane of the duodenum bulb was focally hyperemic, edematous, on the back wall there was a 0.8x0.6 cm round ulcerous defect with hyperemic ridge, bottom was covered with fibrin. A biopsy was taken. Breath urease test was positive. Biopsy test for HP infection - positive (++).

Task:

1. Diagnose the clinical diagnosis.
2. Prescribe a supplementary examination plan.
3. Suggest a treatment regimen for this child

Test control.

1. The development of gastrointestinal diseases is predisposed to:

1. low enzymatic activity of saliva;
2. low enzymatic activity of gastric juice;
3. high permeability of the gastric mucosa;
4. helminthiasis;
5. all of the above.

2. Gastrointestinal diseases most commonly occur at the age of:

1. 5-6 years old;
2. 1-2 years of age;

3. 7-10 years old;
4. 9-12 years old;
22.5. 14-18 years old.

3. An increase in diseases of the digestive system contributes to:
1. allergic diathesis;
2. hypokinesia;
3. surgical interventions on the gastrointestinal tract;
4. Unbalanced diet in terms of the main food ingredients;
5. artificial feeding in the first year of life;
6. all of the above.

4. Factors of "aggression" in the development of inflammatory diseases of the stomach include:
1. mucus;
2. bile;
3. prostaglandins;
4. motility disorders.

5. Factors contributing to the development of diseases of the stomach and duodenum include:
1. irrational use of medications;
2. diseases of the cardiovascular system;
3. diseases of the endocrine system;
4. chronic infections;
5. psycho-emotional stress;
6. all of the above.

6. Methods of diagnosis of Helicobacter pylori include:
1. bacterioscopy;
2. respiratory;
3. excretory;
4. glucose tolerant;
5. all of the above.

7. The methods of diagnosis of diseases of the stomach and duodenum include:
1. FGDS with targeted biopsy of mucosa of the stomach and duodenum;
2. Ultrasound of the stomach and duodenum;
3. glucose tolerance test;
4. general blood analysis.

8. What gastric juice pH values are characteristic of a newborn baby?
1. 1,5-2,0;
2. 2,0-3,0;
3. 3,0-4,0;
4. 5,0-6,0.

9. When performing fractional gastric probing, a test breakfast may be used:
1. meat broth;
2. gastrin; 2;
3. trypsin;
4. pentagastrin;

5. histamine;
6. chymosin.
10. The main means of basal therapy for peptic ulcer disease are:
1. diet therapy;
2. vitamins;
3. antacids;
4. analgesics;
5. physiotherapy.
11. List the drugs that act on Helicobacter pylori:
1. venter;
2. phospholugel;
3. de-nol;
4. omeprazole;
5. amoxicillin;
6. motilium.

Answers: 1-5; 2-1,4; 3-6; 4-2,4; 5-6; 6-1,2; 7-1,2; 8-4; 9-1,4,5; 10-1,3,4; 11-3,4,5.

Forms of GSSS performance control:
1. checking and evaluating the abstract on the given topic;
2. checking and evaluating of correctness of solving situation tasks;
3. test control.

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