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*Guidelines for conducting a practical lesson with 6th year students of  
the Faculty of Medicine on the topic:*

**DIFFERENTIAL DIAGNOSTICS IN GASTRIC DYSPEPSY SYN-  
DROME. FUNCTIONAL DISPEPSIA, CHRONIC GASTRITIS,  
ULCER DISEASE**

**(the duration of the lesson is 8 hours, the first lesson is 4 hours)**

**Vladikavkaz 2022**

**Guidelines for conducting a practical lesson with 6th year students of the Faculty of Medicine on the topic:**  
**DIFFERENTIAL DIAGNOSTICS IN GASTRIC DYSPEPSY SYNDROME. FUNCTIONAL DISPEPSIA, CHRONIC GASTRITIS,**

Purpose of the lesson:

- ☐ to determine the features of the pathogenetic mechanisms of the onset of the disease in a particular patient;
- ☐ conduct differential diagnostics;
- ☐ to study the methods of examination of patients with functional dyspepsia and chronic gastritis and substantiate the examination plan for a particular patient;
- ☐ to study the methods of drug and non-drug treatment in a particular patient.

Motivation of the relevance of the topic.

Chronic gastritis is one of the most common diseases of the internal organs, occurs in more than half of the entire adult population, but only 10-15% of people with chronic gastritis go to the doctor. Chronic gastritis accounts for 85% of all stomach diseases. At the same time, the significance of chronic gastritis is determined not only by the prevalence, but also by the possible connection of its individual forms with diseases such as peptic ulcer and stomach cancer.

Determining the level of students' preparation.

The second level of knowledge: methods of control - a written survey (20 min). Students should know the main issues of etiology, pathogenesis, clinic and diagnosis of chronic gastritis, the definition and classification of gastritis, the main groups of drugs used to treat gastritis A, B, C, their mechanisms of action; students should be able to - possess propaedeutic skills, independently identify the main syndromes - pain and dyspeptic syndromes, make a preliminary diagnosis according to the accepted classification, determine the required amount of research and be able to interpret the data of additional research methods - laboratory (complete blood count, b / x blood test, fecal occult blood, analysis of fractional gastric sounding, intragastric pH-metry, biopsy results, etc.) and instrumental (ultrasound of internal organs, fluoroscopy of the stomach, FGDS with determination of Hp).

Report of student curators in the ward: when reporting the patient, students should pay special attention to the following manifestations of functional gastric dyspepsia and gastritis.

Functional indigestion is a violation of the motor and / or secretory function, occurring with symptoms of gastric dyspepsia and pain without signs of anatomical changes.

Functional disorders of the stomach include functional (non-ulcer) dyspepsia, aerophagia, habitual vomiting, pylorospasm.

Depending on the predominance of certain dyspeptic disorders, clinical variants of the FD syndrome are distinguished: ulcer-like (the main symptom is pain in the epigastric region), dyskinetic (heaviness and a feeling of fullness in the epigastric region, nausea, early satiety prevail) and nonspecific (complaints made by patients difficult to unequivocally assign to the first or second group).

Dyspeptic symptoms and their definitions (definitions)

Symptom	Definitions
epigastric pain	The epigastrium is the area between the navel and the lower end of the sternum, laterally delimited by the midclavicular lines. Pain is defined as a subjective unpleasant sensation; some patients may experience pain as tissue damage.
epigastric burning	Burning is perceived as an unpleasant subjective sensation of heat.
Feeling of fullness after eating	Unpleasant sensation, like prolonged sensation of food in the stomach.
early satiety	Feeling of rapid filling of the stomach after the start of a meal, disproportionate to the amount of food eaten, and therefore it is impossible to eat food to the end.

Complaints: for chronic *Helicobacter pylori* gastritis in the early stage, ulcer-like symptoms are characteristic (periodic pain in the epigastrium 1.5-2 hours after eating, often hungry pains, heartburn, belching sour, normal appetite, tendency to constipation), in the late stage subjective the symptoms correspond to the clinic of chronic gastritis with secretory insufficiency (poor appetite, metallic taste and dry mouth, belching with air, dull, non-intense pain in the epigastrium after eating, rumbling and bloating, tendency to rapid and liquid stools). For chronic autoimmune gastritis, complaints are characteristic: a feeling of heaviness, fullness in the epigastrium after eating, less often - dull pain after eating, belching with air, and with severe secretory insufficiency - rotten, eaten food, bitter, heartburn, a feeling of a metallic taste in the mouth, poor appetite, rumbling, transfusion in the abdomen, unstable stool.

objective status.

Criteria for functional diseases of the gastrointestinal tract:

1. The patient has persistent or recurrent symptoms of dyspepsia (pain or discomfort in the epigastric region along the midline), the duration of which is more than 12 weeks during the year.
2. The absence of clinical, biochemical, endoscopic and ultrasound signs of organic diseases that could explain the occurrence of such symptoms.
3. There is no indication that the symptoms of dyspepsia disappear after defecation or are associated with changes in the frequency and nature of the stool (i.e., there are no signs of irritable bowel syndrome).

Diagnostic criteria for epigastric pain syndrome:

1. Pain or burning, localized in the epigastrium, of at least moderate intensity with a frequency of at least once a week.
2. Periodic pain.
3. There is no generalized pain or localized in other parts of the abdomen or chest.
4. No improvement after defecation or passing flatus.
5. Does not meet the criteria for disorders of the gallbladder and sphincter of Oddi.

With antral *Helicobacter pylori* gastritis (early stage), the following symptoms are revealed: the tongue is clean, local pain in the pyloroduodenal zone, the lower border of the stomach, determined by splash noise, is located normally (3-4 cm above the navel). In the diffuse form of chronic *Helicobacter pylori* gastritis (late stage), an objective examination reveals the following symptoms: weight loss, thickly lined tongue, cracks in the corners of the mouth, moderate diffuse pain in the epigastric region, the lower border of the stomach is located below the normal level, rumbling is often determined on palpation of the thick intestines, significant flatulence may be detected.

With severe atrophy of the gastric mucosa and achlorhydria, the following symptoms appear: weight loss, dryness and pallor of the skin, signs of multivitaminosis, hair loss, brittle nails, a decrease in blood pressure, dystrophic changes in the myocardium, diffuse pain in the epigastric region, prolapse of the greater curvature of the stomach.

Additional research. X-ray reveals the following changes: mucosal folds are coarse in the antrum, pyloric spasm, segmenting peristalsis - with antral gastritis, the relief of the mucous membrane is smoothed, hypotension, sluggish peristalsis - with atrophic gastritis. The results of gastroscopy: with antral gastritis - against the background of spotted hyperemia and edema of the mucous membrane of the antrum, submucosal hemorrhages and erosion, fold hyperplasia, exudation, antral spasm, stasis are often visible, with atrophic gastritis - pallor, thinning, smoothing of the mucous membrane in the body of the stomach and areas, sometimes spotted hyperemia, increased vulnerability, hypotension, reflux of duodenal contents. The results of histological examination: with antral gastritis - pronounced active gastritis, foci of intestinal metaplasia, a lot of *Helicobacter pylori* on the surface and in the depths of the pits, with atrophic gastritis - atrophy of the glandular epithelium, intestinal metaplasia, a small amount of *Helicobacter pylori* in the mucous membrane of the body of the stomach and antrum, minimal inflammation activity. Diagnosis of *Helicobacter pylori* infection: cytological examination, urease test, microbiological method, histological method.

Examination of the secretory function of the stomach: with antral gastritis, acid-forming and pepsin-forming functions are normally or more often increased, with atrophic gastritis they are reduced, up to achlorhydria. In the general analysis of blood in autoimmune gastritis, there is a decrease in the content of hemoglobin and erythrocytes in the blood, an increase in the color index, leukopenia, thrombocytopenia. A biochemical blood test is characterized by moderately severe hyperbilirubinemia, an increase in the content of globulins in the blood.

Preliminary diagnosis: based on the leading complaints and clinical manifestations, as well as indicators of additional studies, a preliminary diagnosis is made.

Differential Diagnosis:

Taking into account the large number of diseases that can also occur with dyspepsia syndrome, esophagogastroduodenoscopy is mandatory in the diagnosis and differential diagnosis of FD, which allows to detect, in particular, reflux esophagitis, peptic ulcer and stomach tumors, ultrasound, which makes it possible to detect chronic pancreatitis and cholelithiasis, clinical and biochemical blood tests, general fecal analysis and fecal occult blood analysis. According to the indications, an X-ray examination of the stomach, electrogastrography and gastric scintigraphy are performed, which help to establish the presence of gastroparesis, daily monitoring of intraesophageal pH, which makes it possible to exclude gastroesophageal reflux disease. In patients with an ulcer-like variant of FD, it is advisable to determine the

infection of the gastric mucosa with *H. pylori* by one or (better) two methods (for example, using an endoscopic urease test and a morphological method).

An important role in the differential diagnosis of dyspepsia syndrome is played by the timely detection of the so-called alarm symptoms, or "red flags" (red flags), which, in particular, include dysphagia, vomiting with blood, melena, fever, unmotivated weight loss, anemia, leukocytosis, increased ESR, etc. The detection of at least one of the prostatic below "anxiety symptoms" in a patient casts doubt on the presence of FD in him and necessitates a thorough examination in order to search for an organic disease.

The recommendation to carry out with a diagnostic purpose seems controversial, i.e. *ex juvantibus*, a trial course of drug therapy for 4-8 weeks. According to some authors, the effectiveness of such a course confirms the diagnosis of FD, and the lack of effect is the basis for performing endoscopy. *Ex juvantibus* diagnostics reduces the cost of examining patients with FD, but carries the risk of delayed recognition of organic diseases.

FD often has to be differentiated from other functional diseases of the gastrointestinal tract (irritable bowel syndrome, aerophagia, functional vomiting).

Irritable bowel syndrome is manifested by abdominal pain that disappears after defecation, flatulence, diarrhea, constipation or their alternation, a feeling of incomplete emptying of the intestine, imperative urge to defecate, etc. However, it should be borne in mind that FD is often combined with irritable bowel syndrome, since similar disturbances in the motor function of the digestive tract occupy an important place in the pathogenesis of both syndromes.

Aerophagia - repeated belching caused by swallowing air, which causes anxiety to the patient and is noted by him for at least 12 weeks during the year. Aerophagia accounts for 5% of all disorders of the functions of the stomach and duodenum, more often observed in men over 45 years of age. With aerophagia, the amount of air in the stomach and intestines increases significantly, since air is swallowed both during meals and outside meals.

The diagnosis of functional vomiting is established when the patient vomits for at least 12 weeks a year and at least 3 days a week, and a thorough examination reveals no other reasons that could explain the presence of this symptom: no self-induced vomiting or vomiting provoked by medication, organic lesions of the intestine or central nervous system, metabolic disorders and severe mental illness.

Chronic gastritis must be differentiated from non-ulcer dyspepsia, stomach tumors, peptic ulcer and other diseases. Given the large number of diseases that can occur with dyspepsia syndrome, esophagogastroduodenoscopy and ultrasound, clinical and biochemical laboratory tests of blood, urine, and feces are primarily used in its diagnosis and differential diagnosis. These methods make it possible to exclude diseases that are the most common cause of organic dyspepsia. The probability of these diseases increases if the patient has a so-called. "symptoms of anxiety" (dysphagia, melena or vomiting of coffee grounds, fever, anemia, elevated ESR). The exclusion in the process of examining a patient of diseases included in the group of organic dyspepsia is the basis for making a diagnosis of functional (non-ulcer) dyspepsia. For more accurate diagnosis in specialized institutions, research methods such as electrogastrography, stomach scintigraphy, measurement of intracavitary pressure in the stomach, barostatography, etc. can be used.

Clinical diagnosis: according to the accepted classification with justification of the type of gastritis (Sydney classification 1990, Houston classification of chronic gastritis, 1994), secretory function.

Conducting a lesson in a thematic classroom: analysis of the features of etiology, pathogenesis, clinic and treatment of a particular patient. Indicate the main methods of non-drug exposure (changing lifestyle, nutrition, giving up bad habits). The main groups of drugs (substitution therapy, gastrocytoprotectors, antisecretory drugs, *Hp* eradication agents), their mechanisms of action, main indications and contraindications for use, and rationale for choosing a specific drug from the pharmacological group.

The final part of the lesson: control of the acquired knowledge - solutions to situational problems, without possible options for correct answers.

Summary.