

Strategy and interpretation of paraclinical investigations in digestive diseases

1. Coproculture examination - paraclinical examination, microbiological analysis of fecal matter, identification of pathogens present in fecal matter.

The working method is represented by the collection of fecal matter in sterile container, directly with the shovel, directly from the spontaneously emitted chair, minimum 3-5 cm³, or by rectal sampling (Nelaton probe, buffer), followed by cultivation on culture media and microscopic analysis. of the increased colonies, identification of sensitivity to antimicrobial substances (antibiotics, antifungals).

Indications: Infectious gastroenteritis

2. Virological examinations - rapid tests for the identification of viral antigens (Rotavirus, Norovirus, Adenovirus) in adenovirus fecal matter; ELISA immunofluorescence microscopy is used.

Indications: Infectious gastroenteritis

3. Coproparasitological examination- this examination detects the presence of parasites with intestinal localization: Protozoa (*Giardia lamblia*, *Trichomonas intestinalis*, *Entamoeba* spp.), Helminths, Nematodes: (*Ascaris lumbricoides*, *Trichuris trichiura*, *Enterobius vermicularis*), Trematode (*Fasciola hepatica*) or Cestode (*Ta .*, *Hymenolepis nana*).

Fecal matter is harvested from any time of day, from 3 different places of the fecal bowl.

Indications: suspicion of parasites, in case of diarrhea, abdominal pain, malnutrition, anemia or intestinal obstruction.

4. The coprocytogram is recommended as a routine examination, which quickly guides us on a viral or bacterial etiology. The coprocytogram usually indicates the presence of large red blood cells and leukocytes. The presence of neutrophil polymorphonuclear cells over 10 / field suggests a bacterial diarrhea of entero-invasive type and allows us to appreciate the opportunity of starting an antibiotic treatment.

The most commonly involved are the germs of the *Shigella* group, *Salmonella*, *Campylobacter*, enteroinvasive and enterohemorrhagic *Escherichia coli*.

5. Helicobacter pylori antigen - determination by an immunochromatographic technique of *H. pylori* antigen eliminated in faeces. The test has an accuracy of over 90% for diagnosis, but also for confirming the eradication of the infection after treatment (for both adult and pediatric population) and has the advantage of a lower cost compared to the other methods.

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Indications: patients under 55 years of age, with dyspepsia, without alarm (weight loss, anemia, digestive haemorrhages, Odinophagy, gastrointestinal neoplasm AHC), peptic ulcer, MALT lymphoma, confirmation of *Helicobacter pylori* eradication.

Precautions: Recent administration of antibiotics that may interfere with *H. pylori* determination, avoiding contact with urine or water.

6. Fecal calprotectin - is a protein, an important component of the polymorphonuclear granulocyte cytoplasm, whose presence in faeces shows the degree of intestinal inflammation.

Indications:

- differentiating patients with irritable bowel syndrome from those with inflammatory bowel disease;
- establishing the degree of activity of the disease in patients with inflammatory bowel disease;
- monitoring the response to treatment of children with inflammatory bowel disease;

Precautions: Avoid administration of non-steroidal anti-inflammatory drugs 2 days before harvesting

7. Occult bleeding in the stool - determination of occult bleeding in the stool is a screening test of importance in the early detection of colorectal cancer. It is recommended to perform annually for all patients over 50 years, who have risk factors for colorectal cancer or when we have suspected upper or lower digestive bleeding.

Regularly performing this test, on an annual basis, in isolation or in combination with sigmoidoscopy, significantly reduces colorectal cancer mortality. Using the immunology test does not require adherence to a diet before harvesting.

8. Abdominal ultrasound- ultrasound is an imaging method based on ultrasound, noninvasive, easily repeatable in dynamics, extremely useful in the practice of family physician.

Indications:

- Any sign or symptom of digestive distress (pain, jaundice, vomiting, weight loss, fever of unknown origin, palpation of the abdominal tumor formation)
- Suspicion of biliary lithiasis, renal lithiasis
- Monitoring of the chronic digestive disorder

Preparing the patient:

- 6 hour fasting (including sour drinks, tea, coffee)
- bladder in repletion
- the intestinal gas content is reduced, the faeces evacuated.
- 24 hours before, no sweets are consumed, avoiding fermentable foods (legumes, fruits, milk).

Examination of the liver involves the evaluation of the size, a structure, echogenicity as well as the presence of focal or diffuse anomalies. Doppler blood flow and its direction in the hepatic vascular structures are evaluated. The gauge of the portal vein is measured, looking for signs of portal hypertension or thrombosis of the portal vein, in patients with chronic liver disease. The normal cholecyst appears as a hypoecogenic structure evaluated in terms of dimensions, shape, location, wall thickness, existence of anomalies within the vesicular lumen.

Examination of the pancreas involves examining all segments, in terms of size, contour or structure modification.

Examination of the spleen involves the evaluation of the dimensions, structure, existence of vascular anomalies at the level of the spleen.

Examination of the kidneys allows the assessment of the size, position, presence of abnormalities of renal structure (calculus, cyst, tumor formation) or perirenal.

9. Upper and lower digestive endoscopy is extremely used in medical practice, for diagnostic purposes, but also therapeutic (cauterization of esophageal varicose veins and extraction of their bodies foreign or gastric, duodenal or colonic polyps).

- upper digestive endoscopy consists of exploration of the interior of the esophagus, stomach and duodenum through the buccal cavity,
- lower digestive endoscopy allows the investigation of the lower portion of the digestive tract by colonoscopy (it is a minimally invasive investigation of the colon and the distal portion of the small intestine through of the fibroscope through the anal orifice and rectosigmoidoscopy (examination of the rectum and sigmoid).

Preparing the patient:

- fasting patient, without consumption of acidic drinks, tea, coffee, without smoking for upper digestive endoscopy.
- 3 days before the colonoscopy, it is recommended to exclude from the diet of fiber foods as well as medicines based on iron or bismuth.

The day before the colonoscopy, it is recommended that the last solid meal (foods without fiber, meat, cheese, yogurt, eggs, ice cream, pasta) be served in the morning at 8 am. Later, they will be consumed, in any quantity, to avoid dehydration. , only clear liquids: plain / mineral water, lemon juice without pulp and without red dyes, purple, blue, strained soup, compote juice, tea. Milk and dairy products will not be consumed after morning. Elimination of fecal residues from the large intestine is achieved by the use of a purgative solution, prepared and administered according to the clear instructions (fortrans or picoprep).

The patient will tell the gastroenterologist / endoscopist anti-aggregation medication (Aspirin, Clopidogrel) or anticoagulant(Sintrom, Thrombostop), to be determined together with the cardiologist the need for dose adjustment.

Indications:

- abdominal pain, vomiting, weight loss, fever of origin unknown, anemia, resistance to PPI / relapse to discontinuation treatment
- detection of hiatal hernia, gastro-duodenal ulcer, benign formations or malignant of the digestive tract
- detection of the cause of hematochezia, melena of inflammation of the esophagus, colon
- screening of digestive cancers in people with risk factors

10. Radiological examination- it is of choice when endoscopy is not affordable or presents an increased risk in patients with heart disease or chronic obstructive pulmonary disease; in 20% of cases it can be false negative; the examination in thin layer with double contrast is superior the classic one.

In the UG, the niche is located outside the gastric contour, frequently, the content is arranged in 3 layers - the Haudeck niche (barium, secretion fluid, air) and it is very important to differentiate between the benign and the malignant gastric niche.

In UD the niche has small directions, it appears as a barite opacity, clearly contoured, surrounded by a perilous edema area and with folds of the radially arranged mucosa; In evolution, deformities of the duodenal bulb, intolerance of the bulb with rapid discharge, may occur.

Benign niche appearance: clear contour, folds of the converging mucosa to the level of the distorted niche, opacity outside the gastric lumen, present edema of the mucosa at the base of the preserved gastric distal niche, adjacent mucosa normal gastric rigidity absent.

Malignant niche aspects: opacity outside the lumen irregularly shaped, asymmetrical, the mucous folds stop away from the niche, gastric distensibility absent, polypoid tumor mass present, gastric rigidity present with absence of normal peristaltic.