

THE IMPORTANCE OF THE PARACLINICAL INVESTIGATIONS IN ASSESSING THE PATIENTS WITH CHRONIC DIARRHOEA

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Abstract. Chronic diarrhoea is defined by 30 g/kg/day stool elimination, modified in aspect, with an evolution more than 2 weeks, and stationary or weight loss. The malabsorption syndrome includes a heterogenic group of diseases characterized by insufficient absorption of one or more of nutrients or substances or by the insufficiency of the reabsorption of endogenous substances. This malabsorption represents the common event of chronic diarrhoea. Diarrhoea is produced as a result of the disease of the colon, small intestine, malabsorption, maldigestion, dysmotility; all of them are difficult to be separated by clinic criteria. The decision of the investigations is a clinical point of view problem, although the prevalence and the severity of the diseases need an early diagnosis by using an algorithm of analysis.

Keywords: chronic diarrhoea, investigations

Rezumat: Diareea cronică reprezintă eliminarea a 30 g/kg/zi de materii fecale modificate ca aspect, cu durată mai lungă de 2-4 săptămâni, antrenând staționarea sau scăderea ponderală. Sindromul de malabsorbție include un grup heterogen de boli ce au în comun insuficiența absorbției unuia sau a mai multor factori nutritivi sau substanțe ori insuficiența reabsorbției substanțelor endogene și reprezintă un eveniment comun în cadrul diareei cronice. Diareea poate rezulta din afecțiuni ale colonului, afecțiuni ale intestinului subțire, malabsorbție, maldigestie, dismotilitate, toate acestea fiind dificil de separat pe baze clinice. Decizia de orientare a investigațiilor pe oricare din aceste arii rămâne o problemă de gândire clinică, deși prevalența și seriozitatea potențială a anumitor afecțiuni necesită excluderea lor timpurie în urma schemei de investigații.

Cuvinte cheie: diaree cronică, investigații paraclinice

The diagnosis of the chronic diarrhoea disease is characterized by two large stages:

- The first stage is based on the history, physical examination, basic laboratory data;
- The second stage is based on the stool analysis in order to differentiate the chronic diarrhoea from the aqueous, inflammatory or osmotic diarrhoea. The main condition which leads to diarrhoea may be difficult to identify, adapting the ways of investigation.

Diarrhoea may be the result of the affections of the colon, of the small intestine, malabsorption, maldigestion, dysmotility, all these being difficult to separate, taking into account the clinical bases. The decision for orienting the investigations on each of these areas remains a clinical point of view problem, although the prevalence and the potential seriousness of certain affections need their early exclusion as a result of the investigation scheme. Another problem in the elaboration of the investigation guidelines was the large number of investigation methods, especially those regarding malabsorption. This reflects the failure of all the tests applied as standard tests; many of the available methods are not accepted due to the improper sensibility and specificity. Most of time times, there is a significant variation in protocols and in the analytical methods within laboratories, which leads to a difficult interpretation of the results.

1. Initial investigations

1.a. Blood test. The increase of the erythrocytes sedimentation rate, anemia and the decrease of albumins have a high specificity for the presence of the organic disease. The iron deficit is an indicator of enteropathy, especially for the celiac disease, but it does not represent a specific test.

1.b. Serological tests for the identification of the celiac disease, the IgA serologic screening – antiendomysium or reticulenic antibodies.

1.c. Stool examination. Stool examinations are divided in specific and unspecific. Those specific include pancreatic enzymes tests, such as the faecal elastase.

2. Affecting the mucous of the small and large intestine.

2.a. Endoscopic and histologic study. The patients with atypical and/or severe symptoms of diarrhoea should benefit from a detailed evaluation. The rapid sigmoidoscopy has been studied for a long time in order to achieve a rapid assessment of the rectum and faeces.

2.b. Colonoscopy has a diagnostic value for the inflammatory intestinal disease and for the microscopic colitis. Routine ileoscopy has the same value as colonoscopy. The patients who are suspected for inflammatory intestinal disease, the value of ileoscopy and the biopsy become more and more certain.

Colonoscopy is the preferred method for excluding or confirming the microscopic colitis.

2.c. High gastrointestinal endoscopy. The distal duodenal biopsies should be made for these patients who with malabsorption at the level of the small intestine even in the absence of the positiveness of the antiendomysium antibodies, with a view to discover other enteropathies.

3. Non-invasive tests for malabsorption identification.

Malabsorption may occur as a result of the defective luminal digestion or due to the decrease of the absorption as a result of the mucous affections or structural disorders. The exocrine pancreatic insufficiency is the cause for the severe and dominant steatorrea, where the faecal fat excretion exceeds 13 g/day.

3.a. Tests for the identification of the fat malabsorption.

Stools have been examined for a period of three days in order to measure the unabsorbed fats. This has been the standard test for malabsorption for decades. The analysis of one single stool or the analysis of the radiomarked products as a result of the fats hydrolysis, of the products identified by the respiration test are the most frequently used methods. Sudan III staining was also used as a qualitative test and recently, it has been adapted in order to provide a quantitative result, as well.

3.b. Tests for the prothetic loss.

Two methods were described: faecal clearance of α_1 antitrypsin or the radiomarked albumin.

Non-invasive tests for the small intestine enteropathy. Previously to the introduction of the endoscopic biopsy, the assessment of the function of the small intestine mucous was made by the quantification of the D - xylose absorption, which is mainly achieved by passive diffusion; its absorption reflecting the fall of the intestinal barrier and an increased intestinal permeability.

The specialized literature shows a better correlation with the histologic anomalies. The test is more sensitive, having a moderate analytic performance in routine practice.

Malabsorption investigations due to the pancreatic insufficiency. The patients with steatorrea due to a pancreatic insufficiency present abnormal results of the pancreatic functional tests. The therapeutic attempts for supplementing the pancreatic enzymes were used as an alternative in assessing the pancreatic function, their diagnostic value not being deeply studied.

Invasive pancreatic functional tests – measure the exocrine function, analysing the duodenal aspiration or after a direct stimulation (with creatinine +/- Cholecystokinin) and indirect, as that of the Lundh test. The test of the direct tube was seen as the gold standard in appreciating the pancreatic function.

Pancreases imagistics. One of the reasons of the decline for using the functional tests is due to the success of the pancreatic imagistic tests, of ultrasounds, computer tomography, endoscopic cholangiopancreatography and the cholangiopancreatography with magnetic resonance.

Non-invasive tests of the pancreatic function. A large number of pancreatic function tests are now available, but without being easily interpreted and supported from the point of view of the sensibility and specificity. The use of the seric enzymes estimation is hindered by the fact that the pancreases diseases should be in an advanced stage, so that enzymes could occur in a significant reduced concentration.

Coprologic tests. The pancreatic enzymes which were measured in faeces are chemotropism, lipase and elastase. More recently, the faecal elastase is a marker of the pancreatic insufficiency. This enzyme is not degraded during the transit and may reach a concentration 5-6 times bigger than those of the duodenal juice. The ELISA test which uses 2 monoclonal antibodies registers a high specificity for this enzyme.

Pancreatic oral functional tests - NBTP/PABA are based on the luminal hydrolysis of NBTP in order to release PABA which is absorbed in liver and released in urine, where it can be measured. The fluorescence test consists in the fluorescein digestion which is subsequently released in urine. The faecal chemotropism has a similar sensibility (49 % for the easy forms and 85 % for the severe pancreatic insufficiency).

The sudoration test is the basic test for the diagnosis of the cystic fibrosis and evaluates the chlorine quantity at the level of the sudoral secretion.

4. Investigating the chronic diarrhoea due to certain specific conditions.

4.1. Bacterial overpopulation of the small intestine – is probable an underdiagnosed condition. A difficult problem in establishing the SBBO diagnosis is the lack of the standard investigations.

4.2. Non-invasive respiratory tests. They represent an alternative of the aspiration of the cultures at the level of the small intestine, yet having a reduced sensibility and specificity. The hydrogen-based respiratory test is based on the capacity of certain bacteria of fermenting the carbohydrates, producing hydrogen.

4.3. Malabsorption of the biliary salts. This may be emphasized by measuring the turnover of the biliary acids, of the seric metabolites or of the biliary acids.

4.4. Malabsorption of lactose. Lactose deficit may lead to lactose malabsorption and to osmotic moderate diarrhoea. Lactose deficit may occur as a primary or secondary congenital default within the celiac disease, gastroenterocolitis, and inflammatory drugs administration.

4.5. Accelerated intestinal transit. Many conditions associated to diarrhoea were assigned to the accelerated intestinal transit and to the intestinal motility anomalies, which include the post surgical states, the endocrine affections (hyperthyroidism, diabetes), the capacity of proving the dysmotility contribution to the diarrheic syndromes due to the multifunctional etiology, the limit of the available tests for identifying the cause and the effect and the individual variations of the intestinal transit in the healthy patients.

4.6. Hormones secretory tumours. Diarrhoea may occur as part of the complex of symptoms, varying according to the tumour type (100 % of the cases in VIPomas 65 % in gastrinoma). The diagnosis confirmation requires proving a seric concentration of hormones. A VIP secretory tumour may be suspected within the context of voluminous secretory diarrhoea, dehydration and hypokaliemia.

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