Malabsorption syndrome

Malabsorption syndrome includes all conditions in which there are disorders of digestion and absorption of basic nutrients and the development of disease states due to the lack of these substances. Malabsorption syndrome can be caused by a number of different diseases and is accompanied by a wide spectrum of clinical manifestations, symptoms and biochemical findings. Template:Checked by thumb|Scheme of enterocyte function. Malabsorption syndrome includes all conditions in which there are disorders of digestion and absorption of basic nutrients and the development of disease states due to the lack of these substances. Malabsorption syndrome can be caused by a number of different diseases and is accompanied by a wide spectrum of clinical manifestations, symptoms and biochemical findings.

By **malabsorption** we mean a **disorder in the intake and transport of nutrients**, vitamins and trace elements through the intestinal mucosa.

The breakdown of nutrients (sugars, fats and proteins) into absorbable substances (mono-, di- and oligosaccharides, amino acids, oligopeptides and fatty acids) is called **maldigestion**.[1]

Primary malabsorption syndromes

- Celiac disease (celiac sprue, gluten enteropathy).
- Tropical sprue.
- Selective malabsorption: disaccharidases deficiency (lactase deficiency), carbohydrate transport disorders (glucose and galactose malabsorption, Fanconi-Bickel syndrome, fructose malabsorption), amino acid transport disorders (cystinuria, Hartnup disease, protein intolerance with lysinuria), abetalipoproteinemia, folate malabsorption, cobalamin malabsorption ..

Secondary malabsorption syndromes

- Whipple's disease (intestinal lipodystrophy).
- Dead end syndrome.
- Short bowel syndrome.
- Exudative gastroenteropathy.
- Postradiation enteritis and colitis.
- Pancreatic maldigestion and malabsorption.
- Malabsorption in AIDS.
- Drug malabsorption.
- primary malabsorption of bile acids.
- Scleroderma.
- Amyloidosis.

Clinical manifestations

Malabsorption typically presents with diarrhea and weight loss, but the symptoms can often be subtle.

- diarrhea (malabsorption of water and electrolytes),
- steatorrhea (malabsorption of fats and bile acids),
- weight loss (malabsorption of fats, sugars, proteins),
- hypochromic microcytic anemia (iron malabsorption),
- pernicious anemia, glossitis (malabsorption of vitamin B12 and folic acid),
- limb and bone pain, pathological fractures, osteoporosis, osteomalacia (malabsorption of potassium, magnesium, calcium, vitamin D, proteins and amino acids),
- increased bleeding (malabsorption of vitamins K and C),
- swelling (protein malabsorption),
- flatulence (sugar malabsorption),
- lactose intolerance (lactose malabsorption),
- peripheral neuropathy (malabsorption of vitamins B1, B6, B12),
- hyperkeratosis, parakeratosis, acrodermatitis (malabsorption of vitamin A, zinc),
- night blindness (malabsorption of vitamin A).[1]

Anamnesis

Important history data include:

- surgical interventions in the area of the digestive tract (gastrectomy, bowel resection, etc.);
- chronic pancreatitis, chronic cholestasis, radiotherapy.

The following diseases are often present in the family history:

- celiac disease, Crohn's disease, cystic fibrosis, lactase deficiency.

Important information includes the volume of the stool, its appearance and the presence of mucus, blood or parasites.[1]

Laboratory examination

- blood count: anemia;
- serum biochemistry: decreased level of iron, ferritin, calcium, magnesium, total protein, albumin, cholesterol;
- immunological examination: antibodies against endomysium and tissue transglutaminase, possibly gliadin (celiac disease).[1]

Stool examination

- microbiological and microscopic: Giardia lamblia, enteropathogenic bacteria, parasites and stool eggs,
- elastase or chymotrypsin in the stool (pancreatic insufficiency), elastase or chymotrypsin in the stool (pancreatic insufficiency),
- fat in the stool (three-day stool collection after a five-day high-fat diet),
- occult bleeding,
- α1-antitrypsin in stool (protein-losing enteropathy).[1]

Functional tests

- breath tests (lactose, fructose, glucose),
- breath test with the administration of 13C-labeled xylose - for the diagnosis of bacterial overgrowth, in the case of blind loop syndrome,
- Schilling test – absorption of vitamin B12 in the ileum,
- tolerance test with D-xylose,
- stress test with vitamin A,
- lactulose/mannitol intestinal permeability test,
- secretory function tests with labeled albumin (51Cr-albumin test).em (^{51}Cr-albuminový test).[2]
- bentiromide (PABA) and pancreolauryl test – exocrine function of the pancreas[1]

Imaging methods

- USG abdomen,
- esophagogastroduodenoscopy and biopsy,
- ileocolonoscopy and biopsy,
- pancreas – CT, MRCP, ERCP,
- X-ray of the small intestine - enteroclysis (fistulas, diverticula, blind loops, short intestine, etc.),
- angiography of the celiac trunk and the mesenteric artery (intestinal ischemia).[1]

Links

External links

- WGO Practice Guideline – Malabsorption (http://www.worldgastroenterology.org/malabsorption.html)

Reference

1. World gastroenterology organisation. *WGO Practice Guideline: Malabsorption* [online]. ©2006-2011. [cit. 2011-03-19]. <http://www.worldgastroenterology.org/assets/downloads/en/pdf/guidelines/13_malabsorption_en.pdf>.
2. KOCNA, P. *GastroLab* [online]. [cit. 2009]. <http://www1.lf1.cuni.cz/~kocna/glab/gl_chtr.htm>.

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