

Portal:Laboratory tests and methods in Gastroenterology

Overview

Laboratory diagnostics in Gastroenterology includes specific screening programs, using modern methods to detect the analytes in stool, function tests and also the non-invasive breath tests to detect hydrogen - H₂ or stable isotope of carbon - ¹³C.

Urea breathing test with ¹³C marking urea - UBT is a gold standard in **diagnosis *Helicobacter pylori***. Reliable way how to diagnose Helicobacter is non-invasive stool antigen test. **Laboratory diagnostics in stomach pathology** includes also serological tests of stomach mucosa - gastrin-17 level, pepsinogen I and II ratio (pepsinogens A and C), or *H. pylori* antigen level, CagA and VacA antigens, funktion test of stomach acidity and test of stomach motility - ¹³C- octanoic acid breath test (OABT).

Chapter **acute pancreatitis** contains routine tests and methods for detecting serum levels of amylase and lipase, detecting of macroenzymes such as - makroamylase - macroamylasemia and makrolipase - macrolipasemia, determination of amylase isoenzymes in faeces, serum levels of elastase 1 or detecting of trypsin levels. Using of urinary trypsinogen test - human trypsinogen activation peptide - (TAP) and carboxypeptidase B - - (CAPAP-B) in early diagnosis of acute pancreatitis. For severity prediction - especially infectious complications - is procalcitonin a suitable marker.

Diagnosis of **chronic pancreatitis** is still based on tests on pancreatic exocrine function - secretin-pancreozymin test (SCCK/PZS) as a gold standard. The indirect tests are non-invasive but on the other side they have lower sensitivity - PABA or PLT/pankreolauryl test. Other common tests are elastase1 and chymotrypsin measurement in stool. Modern non-invasive indirect test is ¹³C-labeled mixed triglyceride breath test (¹³C MTG-BT).

Differential diagnosis of **malabsorption syndrom** includes intestinal absorption activity examination - measuring β-carotene levels, β-carotene absorption test or vitamine A absorption test. Routine tolerance test is also urinary D-xylose test or laktose tolerance test. Measurement of intestinal permeability represents one of the potential methods of noninvasive laboratory assessment of gastrointestinal toxicity - laktulose/mannitol test (La/Ma test). Non-invasive breath tests is ¹³C-laktose breath test or ¹³C-xylose breath test suitable for small-intestinal stomach bacteria (<http://stomachbacteria.net/>) overgrowth detection.

Primary malabsorption syndrome is **celiac disease**, gluten enteropathy. Laboratory methods offers wide spectrum of screening tests - Endomysial antibodies EmA/IgA, gliadin IgA and IgG antibodies. Determination of antitissue transglutaminase antibodies (AtTGA) is basic and most reliable test. Anti-gliadin a anti-tTG can be also measured in stool.

Laboratory diagnosis of colorectal pathology is focused on colorectal cancer screening. Fecal occult blood tests (FOBT) - guaiac Haemocult test, more sensitive immunochemical blood test - iFOBT and quantitative fecal occult blood test - qi-FOBT. Fecal calprotectin can be useful in determination of inflammatory diseases and tumor activity. Using molecular biology methods allow determination of DNA in stool probe.

Alphabetical list