

Functional tests in gastroenterology

Functional tests form an important component of the clinical diagnostic process in gastroenterology. They supplement the results of imaging techniques with essential information, which is the function of the organ, resp. ability to respond to stimulation. The functional test involves a well-defined stimulation and the result is interpreted as the organ's response to stimulation, taking into account the basal values of the analyte before stimulation. In addition, for indirect functional tests, the function of other bodies or systems involved in the process must be considered in the interpretation.

An example is the **indirect test for exocrine pancreatic function**. The substrate with the PABA marker is administered orally, the pancreatic hydrolysis of the peptide releases the marker, it is absorbed in the small intestine, hydrolyzed in the liver, and finally the analyte is excreted by the kidneys. The laboratory result must be interpreted with knowledge of other functional relationships, especially renal functions, which very often affect the result. For breath tests, it is necessary to know the ventilation conditions, if the analyte is metabolized in the liver, liver function, etc. Comprehensive evaluation and interpretation of functional tests requires close cooperation with the indicating physician.

The technological development of imaging methods in gastroenterology currently offers a combination of morphological imaging and at the same time an evaluation of some functional aspects of the examined organ. ERCP and MRCP methods can also be performed with secretin or cholecystokinin with simultaneous stimulation, resulting in modern combined examination procedures S-MRCP, MRCPQ or ePFT (endoscopic pancreatic function test). An UBT "breath test" can also be performed endoscopically with the administration of 20 mg of labeled urea and the collection of gaseous stomach contents through the biopsy canal of the endoscope.

Links

Related Articles

- Examination methods in gastroenterology
- Laboratory methods in gastroenterology
- Stool examination

Source

- with the permission of the author taken from KOCNA, Petr. *GastroLab: MiniEncyclopedia of laboratory methods in gastroenterology* [online]. © 2002. Last revision 2011-01-08, [cit. 2011-03-04]. <<http://www1.lf1.cuni.cz/~kocna/glab/glency1.htm>>.

References

- LIEB, JG, et al. Pancreatic function testing: here to stay for the 21st century. *World J Gastroenterol*. 2008, vol 14, no. 20, pp. 3149-58, ISSN 1007-9327. PMID: 18506918.
- URITA, Y, et al. Ten-second endoscopic breath test using a 20-mg dose of ¹³C-urea to detect *Helicobacter pylori* infection. *Hepatogastroenterology*. 2007, vol 54, no. 75, pp. 951-4, ISSN 0172-6390. PMID: 17591101.
- GILLAMS, A., et al. Correlation of MRCP quantification (MRCPQ) with conventional non-invasive pancreatic exocrine function tests. *Abdom Imaging*. 2008, vol 33, no. 4, pp. 469-73, ISSN 0942-8925 (Print), 1432-0509 (Electronic). PMID: 17653788.
- GILLAMS, AR, et al. Quantitative secretin MRCP (MRCPQ): results in 215 patients with known or suspected pancreatic pathology. *Eur Radiol*. 2007, vol 17, no. 11, pp. 2984-90, ISSN 0938-7994 (Print), 1432-1084 (Electronic). PMID: 17619882.
- SCHNEIDER, AR, et al. Does secretin-stimulated MRCP predict exocrine pancreatic insufficiency?: A comparison with noninvasive exocrine pancreatic function tests. *J Clin Gastroenterol*. 2006, vol 40, no. 9, pp. 851-5, ISSN 0192-0790 (Print), 1539-2031 (Electronic). PMID: 17016144.
- BALI, MA, et al. Evaluation of somatostatin inhibitor effect on pancreatic exocrine function using secretin-enhanced dynamic magnetic resonance cholangiopancreatography: a crossover, randomized, double blind, placebo-controlled study. *Pancreas*. 2006, vol 32, no. 4, pp. 346-50, ISSN 0885-3177 (Print), 1536-4828 (Electronic). PMID: 16670616.
- STEVENS, T, et al. A randomized crossover study of secretin-stimulated endoscopic and duodenal tube pancreatic function test methods in healthy subjects. *Am J Gastroenterol*. 2006, vol 101, no. 2, pp. 351-5, ISSN 0002-9270 (Print), 1572-0241 (Electronic). PMID: 16454842.
- BALI, MA, et al. Quantification of pancreatic exocrine function with secretin-enhanced magnetic resonance cholangiopancreatography: normal values and short-term effects of pancreatic duct drainage procedures in chronic pancreatitis. Initial results. *Eur Radiol*. 2005, vol 15, no. 10, pp. 2110-21, ISSN 0938-7994 (Print), 1432-1084 (Electronic). PMID: 15991016.

