Immunochemical test of blood in stool

Template:Zkontrolováno thumb|Pozitivita FOBT – guajakový test × imunochemie

Immunochemical detection of blood in stool (iFOBT) is intended, in contrast to the guaiac screening test (Haemoccult, gFOBT), to exclude gastrointestinal bleeding. The test is based on the immunochemical detection of hemoglobin by reaction with a monoclonal antibody against human hemoglobin. Sensitivity and positive detection are also significantly affected by the different degradation of both hemoglobin components with respect to the proximodistal gradient in the gastrointestinal tract. Globin is degraded much faster, and the positivity of immunochemical tests almost eliminates the detection of bleeding in the upper gastrointestinal tract. Hemagglutination, latex immunoprecipitation, radial immunodiffusion and immunoaffinity chromatography tests are based on the immunochemical principle. Detection of protein (human hemoglobin) by a monoclonal antibody eliminates the possibility of influencing by another source of hemoglobin (food), no interference from chemicals, no special diet is necessary. The sensitivity of immunochemical tests is significantly higher; depending on the technique i <0.1 mg hemoglobin per gram of stool. Immunochemical tests include, for example, the Hemolex latex test, the Heme-Select reverse passive hemagglutination principle, the ImmoCare immunoaffinity chromatography, the Dialab FOB test, the Hexagon OBTI, the Actim test and others.

Performing the test

thumb|Imunochemické testy – FOBT Immunochemical tests vary considerably depending on the type of technique used. Recently, the most common variant is immunoaffinity chromatography. The patient takes 1 stool sample into a collection container with a stabilizing solution. However,stool sampling involves a significant risk of preanalytical error. Laboratory processing consists of applying a drop of extract to the test and reading 1 or 2 colored strips that detect the presence of only an antibody with a colored marker (negative test, 1 colored strip) or the formation of an antigen-antibody complex (positive test, 2 colored strips). The evaluation is again only qualitative.

Studies in recent years have tested several immunochemical analyzers for the quantitative determination of hemoglobin in stool (qi-FOBT), most of which are Japanese-made. ROC curves show 95.3% specificity for advanced adenomas at a sensitivity of 100 ng Hb / mL.

Links

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References

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