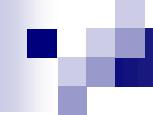


# Examination methods in gastroenterology

- Medical history, physical examination
- Laboratory findings
- Imaging methods
- Endoscopy
- Others



## ■ Mediacial history, physical examination

- Important !
- Helps you to aim next examination to right target

# Laboratory - basic

- Cell blood count
  - Anemia, leukocytosis...
- Coagulation
- Ionts, liver enzymes, glycemia, renal functions (urea, creatinine), CRP, albumin total protein, amylase, pancreatic amylase( acute pancreatitis)
- Acid-base balance

# Laboratory - liver

- ALT(cytosol), AST(cytosol+mitochondria)
  - Acute liver injury
    - viral hepatitis (A, B, C, D, E)
    - ischemia – hypoperfusion (low cardiac output, acute portal vein thrombosis)
- ALP, GGT + elevated bilirubin
  - Cholestasis (hepatal/posthepatal)
    - Bile duct obstruction
    - toxic lesion (drugs, alcohol)
- Bilirubin conjugated/unconjugated
- Coagulation factors (II,V,VII X) – INR + albumin + transferin + cholinesterasis
  - Liver syntetic functions
- cholesterol
  - elevated during cholestasis, NASH (non alcoholic fatty liver disease)
- Amoniac
  - Elevated in patient with liver encephalopathy
- iron, ferirtin, transferin, saturation of transferin
  - Hemochromatosis + alcoholic liver disease
- Copper, celuloplasmin, copper in urine, cooper in liver tissue
  - Willson disease
- Pellet count
  - trombocytopenia - portal hypertension and hypersplenis

# Laboratory- liver

- Serology
  - Viral hepatitis A
    - VHA Ab IgM, IgG
  - Viral hepatitis B
    - HBs Ag, HBe Ag, HBc Ag
    - Anti-HBs Ab, anti-HBe Ab, anti-HBc Ab
    - HBV PCR

# Laboratory - liver

- Viral hepatitis C
  - HCV Ab IgM, IgG, PCR HCV
- Viral hepatitis, D, E
- EBV, HSV, CMV
  - Hepatotropic viral disease
  - serology and PCR
- Porfyrins
  - Urine, stool, blood
- Oncomarkers
  - Alfafetoprotein(AFP) – hepatocellular carcinoma

# Laboratory – special

## ■ Imunology

- Anti-trasglutaminase Ab + imunoglobulins - celiakal sprue
- ANA, ANCA, AMA, ASMA, LKM
  - Autoimmune hepatitis (I+II)
  - Primary biliary cirrhosis
  - Primary sclerosing cholangitis
- ANCA/ASCA – ulcerative colitis/ morbus Crohn (not specific)

# Imaging methods

- X ray
- Ultrasound
- Irrigography
- Baryum swallow X-ray
- Computed Tomography
- Magnetic resonance
  - MR enteroclysis (small bowel)
  - MRCP (cholangio-pancreatico graphy)

# Abdominal ultrasound

- Liver
  - Steatosis, fibrosis, focal lesions ( secondary tumor lesions)
- Bile ducts, gall bladder
  - cholecystitis, cholezystolithiasis, bile duct dilatation
- Bowel
  - Appendicitis, bowel wall thickness extension (tumor, inflammation?)
- Kidney
  - Hydronephrosis (obstruction), focal lesions

# Endoscopic methods

- Gastroscopy
- Colonoscopy
- Enteroscopy
- ERCP (endoscopic retrograde cholangio-pancreaticography)
- Endosonography
- Cholangioscopy

# Gastroscopy

- Diagnostic/therapeutic
- Indications
  - abdominal pain
  - Anemia, suspected neoplasia
  - observation of patients in risk (cirrhosis, Barrett esophagus, post polypectomy...)
  - Acute gastrointestinal bleeding (varices, ulcerations...)
  - Foreign bodies

- Helicobacter pylori detection – gastric mucosa biopsy
  - Histology, cultivation, urease test
- Stomach acidity – congo red stain (forbidden today)

# Colonoscopy

## ■ Indications

- Suspect neoplasia, anemia
- Screening
- Abdominal pain, diarrhea, obstipation
- Suspected inflammatory bowel disease
- Follow up (polypectomy, tumor resections)

# Endosonography

- Depth of lesions  
(esophagus, stomach,  
rectum, sigma)
- Endosonography of  
pancreas

# 24h pH metry, impedance

- Gastroesophageal reflux disease
- 24 h esophageal pH monitoring
- monitoring of impedance ( non acid reflux)

# High resolution manometry

- Esophageal
  - Motility disorders (achalasia, esophageal spasm, peristaltic defects)
  
- Anorectal
  - Malfunction of anorectal sphincter (postpartum, neurologic diseases...)

# Other methods

- Paracentesis – ascitic fluid-(cell count,, albumin, amyasis, microbiology, cytology)
- Liver biopsy, transjugular liver biopsy
- Ocult bleeding test – detection of trace of blood in stool
- Microbiological examination of stool
  - Detection of Clostridium diff. antigen and toxin
- Esophageal scintigraphy
- Breath tests - detection of enzymes in enterocytes (lactose test, xylose test)
- Resorbtion tests (Schiiling test – B12 vit. absorption)
- Defecography
- Splenoportography