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Propedeutics in Hepatology

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History

History is the first and basic examination method that has the highest diagnostic yield

- **FH** – genetic disease in family – hemochromatosis, M.Wilson., infectious hepatitis
- **PH** – infectious disease – EBV,CMV, hepatitis, vaccination, risky sexual intercourse travelling history, digestive disorders, diabetes mellitus, hypertension
- **PA**: drug type, NSAID, ATB, hormonal treatment, immunosuppressants, chemotherapy, anesthesia, steroids, natural preparations – herbs, mushrooms!!
- **Habits**: smokes from - to, how many cigarettes a day, how long, date of giving up alcohol – beer, wine, spirits, how much per day on average, regularity of consumption
- **GA** - menstruation – from - to, regular, irregular, hormone replacement therapy IVF, hormone contraceptives
- **SH** – risk at workplace – chemical industry, laboratory etc.
- **FF** - urination – dark urine?, stool color – pale/black, weight +/-, skin color, appetite

Clinical examination

- **SUBJECTIVELY**

tiredness, yellowing of skin and whites, gastric and intestinal dyspepsia - anorexia, nausea, feeling of fullness, sleep disorders, irregular menstrual cycle, loss of libido, abdominal volume increase, pruritus, nonspecific pain in the right hypochondrium

- **OBJECTIVELY**

in the early stages of liver disease asymptomatic, manifestations with more extensive disability

- **observation** – spider nevi located in the upper part of the trunk, palmar erythema, disappearance of hair on the chest, dilated veins in the abdominal wall - sometimes called caput Medusae, icterus, ascites, muscle hypotrophy, swelling, tremor
- **palpation** – enlarged liver (size, margin, consistency, pain), enlarged spleen, tension ascites, hepatojugular reflux
- **percussion** – importance in determining liver size
- **auscultation** – friction murmurs, so-called "scratching" - application stethoscope to proc. xiphoideus and craniocaudal scratch the medoclavicular line on the skin - determination of liver size



Laboratory examination

- **Tests reflecting hepatocyte disorders** - ALT, AST, AST elevation prognostically more severe, ALT and AST elevation 3-20x - acute and chronic hepatitis, toxic damage, alcohol liver damage, acute ischemia, circulatory shock, "De Ritis Ratio" index – AST / ALT more than 2 - alcoholic liver disease
- **Tests reflecting disorder at the level of bile ducts and canalicular system** - ALP, GGT, isolated GGT value - chronic alcohol abuse etc.
- **Synthetic activity of liver** - albumin, prealbumin, cholinesterase, coagulation factors
- **Blood count** - anemia, macrocytosis, thrombocytopenia
- **Bilirubin, bile acids**
- **Examination of autoantibodies** - when autoimmune hepatitis is suspected (ANA, ASMA, AMA, LKM ..)
- **Serological examination** - if viral hepatitis is suspected
- **Specific examinations** - urine collection / 24h for Cu in Wilson's disease, iron metabolism in hemochromatosis (Fe, sat Fe, ferritin), alpha1 antitrypsin

Imaging methods

- **Abdominal ultrasonography** - noninvasive method, easily available, basic examination method in differential diagnosis of hepatopathy (steatosis, cirrhosis, liver lesions)
- **CEUS – contrast-enhanced ultrasound of liver disease**- ultrasound using contrast medium (gas microbubbles) to improve visualization and characterization of anatomic structures and lesions
- **Elastography of the liver** – the latest method, noninvasive, nonpainful, measuring the degree of stiffness (fibrosis) of liver tissue, event. biopsy replacement
- **CT liver (computed tomography)**- disadvantage - radiation exposure, application of iodinated contrast media with risk of allergic reaction and nephrotoxicity
advantage - evaluation of liver lesions, vascular supply of liver
- **MR liver** - noninvasive, radiation-free, contrast media have lower nephrotoxicity, allergy is rare, evaluation of liver lesion lesions, MR 80-100% sensitivity, lesions specificity over 96% (like CT)
- **MRCP (magnetic resonance cholangiopancreatography)** - diagnosis of primary sclerosing cholangitis according to the typical bile duct imagine, event. ERCP PET / CT,
- PET / MR – detection of liver metastases of GIT tumors, used in oncology care

Endoscopic methods in hepatology

- **Gastroscopy** - used in the diagnosis and treatment of portal hypertension (esophageal varices, portal gastropathy...)

- diagnostic - screening – patients with liver cirrhosis

- therapeutic -

- a) acute - finding the source of bleeding + endoscopic treatment (sclerotization, esophageal varices ligation)

- b) elective - preventive treatment for patients at risk of bleeding



cs.wikipedia.org

- **Colonoscopy, rectoscopy, enteroscopy** - used in the diagnosis of pathologies resulting from portal hypertension (eg rectal varices, colopathy in portal hypertension, etc.)

- **ERCP** – diagnostic and therapy of biliary obstruction

Special examination in hepatology

Ascites puncture - miniinvasive method, ascites puncture under ultrasound control or by percussion using a thin puncture needle

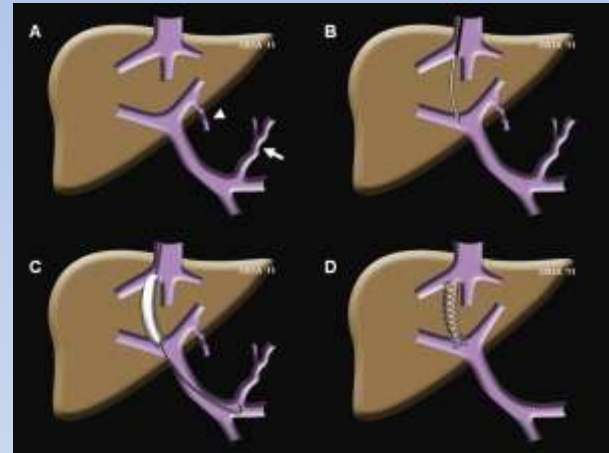
- diagnostic - removal of small amounts of ascitic liquid- ideally straw-yellow liquid
 - neutrophil count, higher than $0.25 \times 10^9 / l$ - spontaneous bacterial peritonitis
 - cytological examination – presence of malignant cells
 - amount of protein - transudate / exudate
 - microbiological examination
 - biochemical examination (eg ascites amylase)
- therapeutic - so-called paracentesis, to drain off the fluid from abdomen to make the patient more comfortable and reduce swelling

Liver biopsy - is a procedure in which a small needle is inserted into the liver to collect a tissue sample for histological examination, local anesthesia

- non-targeted biopsy – in patients with suspected parenchymal liver disease, such as chronic hepatitis or cirrhosis, dry matter of Cu and Fe
- targeted biopsy - to a specific lesion, such as a suspected tumor

Therapeutic methods

- **TIPS (transjugular intrahepatic portosystemic shunt)**
 - is an artificial channel within the liver that establishes communication between the inflow portal vein and the outflow hepatic vein
 - performed by an intervention radiologist,
 - miniinvasive procedure - transjugularly
 - it is used to treat portal hypertension which frequently leads to intestinal bleeding
 - risk of worsening liver encephalopathy



ANDREWS, MD, R. Torrance. Tips schematic. In: *Wikipedia* [online]. 2011. Dostupné z: https://upload.wikimedia.org/wikipedia/commons/c/c9/Tips_schematic.JPG

Percutaneous Transhepatic Drainage (PTD)

- malignant / benign biliary stenosis, that cannot be solved endoscopically
- short-term external drainage - palliative treatment to reduce bilirubin
- long-term external-internal drainage - lifetime of the drain about 6-12 weeks, necessary regular changes and regular flushing
- putting a stent (plastic or metallic) in malignant biliary stenosis