

# Cirrhosis

**Hepatic cirrhosis** is the reconstruction of the lobular structure of the liver into a nodular structure ( hepatocyte death , replaced by connective tissue, the remaining parenchyma regenerates + forms nodules) as a result of chronic liver disease.

## Etiology

- chronic hepatitis C, B, B + D - **posthepatitic cirrhosis** ,
- alcoholic liver damage - **alcoholic cirrhosis** ,
- long-term biliary obstruction - **biliary cirrhosis** ,
  - *primary* - autoimmune diseases ( antibodies against interlobular bile ducts are formed ) ,
  - *secondary* - due to prolonged biliary obstruction by tumor or concretion ,
  - primary sclerosing cholangitis - autoimmune disease of intrahepatic and extrahepatic bile ducts,
- toxic liver damage ( paracetamol , amatoxin...) - toxic cirrhosis,
- metabolic diseases ( Wilson's disease ,  $\alpha$ 1-antitrypsin deficiency, hemochromatosis , porphyria , CF and others),
- long-lasting venostasis - cirrhosis due to venous congestion,
- unclear etiology - cryptogenic cirrhosis (in 10–15%).

**The consequences of liver cirrhosis** (and underlying complications) are:

- impaired synthetic function of the liver (especially proteosynthesis ) by the death of hepatocytes - liver insufficiency ,
- portal hypertension .

## Complications of cirrhosis <sup>[1]</sup>

thumb|vpravo|300px|Mikronodulární jaterní cirhóza

- portal hypertension - congestion in the Vena portae basin, consequences:
  - esophageal varices - massive bleeding ( hematemesis , melena )
  - ascites - fluid and sodium retention by the kidneys ( hyperaldosteronism - impaired degradation in the liver), hypoproteinemia is less important
  - splenomegaly - platelet sequestration in the spleen - thrombocytopenia

reduced resistance to infection (limited blood flow to the liver eliminates liver RES ) - pneumonia , SBP

- bleeding ( hemorrhagic diathesis ) - insufficient synthesis of coagulation factors , hypersplenism with thrombocytopenia
- jaundice - not always expressed
- **spider nevi** (naevus araneus, extension of the terminal sections of skin arterioles) - especially on the hands, forearms, forehead and front of the chest
- liver failure
- renal failure ( hepatorenal syndrome )
- hepatocellular carcinoma
- hyperestrism - a disorder of the breakdown of estrogen by the liver, excess leads to testicular atrophy and gynecomastia in men, and menstrual disorders and ovarian atrophy in women
- encephalopathy

## Clinical picture

Hepatic cirrhosis can be asymptomatic for a long time and is diagnosed at random (preventive examinations, abdominal surgery, etc.).

### Compensated cirrhosis (latent subclinical)

- very reminiscent of chronic hepatitis
- **subjectively** , patients complain of non-specific symptoms: dyspepsia - feelings of fullness after eating, stool changes; in women menses disorders, hypomenorrhea to amenorrhea
- **objectively** : hepatosplenomegaly , slow-growing portal hypertension , skin symptoms - spider nevi, manifestations of bleeding, mild perimalleolar swelling , nocturia, sudden hematemesis

### Decompensated cirrhosis (advanced)

- varied symptomatology
- *symptoms of parenchymatous liver disorders* (metabolic decompensation) - jaundice , hemorrhagic diathesis , hypoalbuminemia with fluid retention with ascites and edema
- *symptoms of advanced portal hypertension* (vascular decompensation) - ascites, esophageal varices , portosystemic encephalopathy
- **subjectively** - insurmountable fatigue, weakness, exhaustion, loss of appetite, weight loss, abdominal enlargement, swelling; in women menses to amenorrhoea disorders, in men decreased libido and potency, gynecomastia, often arthralgia and spine pain
- **objectively** - patient tired, emaciated (large abdomen, thin limbs), slow reactions (encephalopathy), subfebrile, hypothermia or isothermia, skin pale, often icteric, numerous spider nevi , lips and tongue are red (varnished), palmar erythema on the hands, Dupuytren's contracture , white nails, clubbed fingers , hemorrhagic diathesis (petechiae, hematomas, bleeding from the gums, nose, gynecological), in men the chest hair disappears ( Tail's habitus ), gynecomastia

#### Physical finding:

- *aspects*: arching of the right lower jaw , jaundice, spider nevi, palmar erythema, etc.
- *palpation*: splenomegaly, may be hepatomegaly
- *percussion*: may be hepatomegaly, evidence of ascites (glacial symptom)

## Diagnosis

thumb|350px|Mikroskopický obraz jaterní cirhózy

- **anamnesis and physical examination**
- **laboratory examination**
  - increased AST and ALT , hyperbilirubinemia
  - thrombocytopenia, leukopenia (hypersplenism)
  - hypoalbuminemia, hypergammaglobulinemia, ↑ erythrocyte sedimentation
  - prolongation of prothrombin time
  - decompensation of cirrhosis results in an increase in ammonia and a decrease in uremia
  - in biliary cirrhosis, obstructive enzymes ( ALP , GMT )
  - hepatitis serology
  - autoantibodies in autoimmune cirrhosis
  - AFP in the transition to cancer
- **imaging methods** ( ultrasound or CT of the liver, endoscopy to detect varicose veins)
- **liver biopsy**

## Treatment

1. **influencing the underlying disease** – abstinence in alcoholics , treatment of hepatitis , penicillamine in Wilson's disease
2. **supportive measures** – regime measures (alcohol abstinence, omission of hepatotoxic drugs), administration of vitamins A, D, E, [[vitamin K|K], hepatoprotectants, in autoimmune hepatitis (nowhere else) corticoids are given
3. **liver transplantation**
4. **treatment of complications**:
  - bleeding from esophageal varices (endoscopic sclerosing or ligation + terlipressin (Remestyp), in case of TIPS failure or surgery, after bleeding GIT and ATB lavage , preventive administration of non-selective β-blockers and nitrates)
  - hepatic encephalopathy (restriction of protein intake, lactulose, ATB, administration of branched-chain amino acids )
  - ascites (restriction of fluid and salt intake, diuretics (spironolactone + furosemide), puncture, TIPS, shunt)
  - hepatorenal syndrome (Remestype in combination with iv albumin)
  - hepatocellular carcinoma (surgical resection or radiofrequency ablation, palliative chemoembolism)

## Prognosis

The Child-Pugh score is used to predict liver cirrhosis.

Score used to evaluate the prognosis of a patient with chronic liver failure. MediaWiki:Lékařská kalkulačka/Child-Pugh

## References

### Related Articles

- Pseudolobular cirrhosis (specimen)

## Reference

1. Prof. MUDr. Marie Brodanová, DrSc., MUDr. Tomáš Vaňásek, PhD., odborná společnost hepatologická, Česká lékařská společnost Jana Evangelisty Purkyně, <<http://www.cls.cz/dokumenty2/resitele/t231.rtf>>

## External links

- Cirhóza (<https://www.youtube.com/watch?v=5szNmKtyBW4>) – video na YouTube.com vysvětlující patofyziologii a komplikace cirhózy

## References

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