Hepatobiliární trakt a sepse. Pohled patologa

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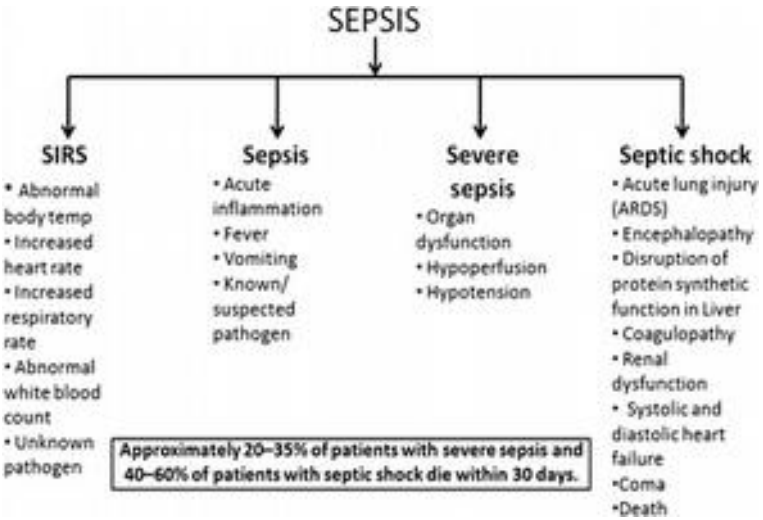
Sepse/patolog

- Klinický údaj/diagnóza – **nová x verifikace**
- **Orgánové postižení** (ledviny, mozek, játra)- makroskopický nález, mikroskopický nález
- **Patofyziologie**
- **Limitace** role patologa



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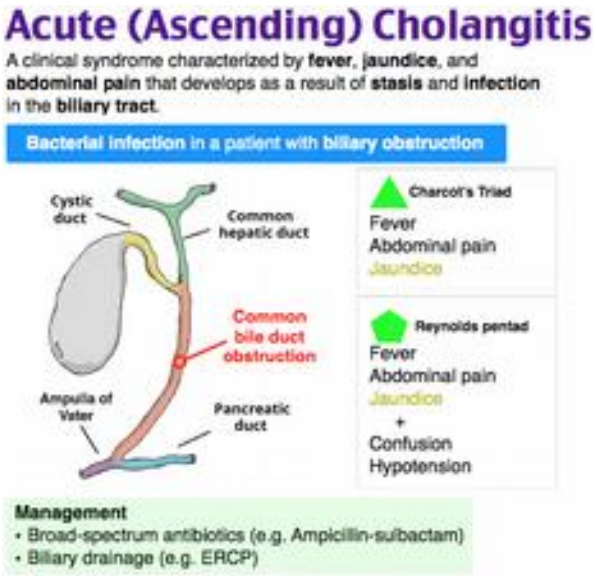
Hepatobiliární sepse

- Častá – **obstrukce** (cholecystolitiáza, tumor) **cholangitis**
- Celkem **24%** intraabdominálních sepsí (pacienti nad 65 let - 12% intraabdominálních sepsí)



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Sepse/játra

„Liver – guardian, modifier and target of sepsis“

- **Orgánová dysfunkce** – komplikace sepse (**host response** – ***double sword*** – odstranění bakterií/toxinů x poškození orgánu)
- Sepse indukuje **reprogramování jaterního transkriptomu** (biotransformace, kanalikulární transport, porucha exkrece)

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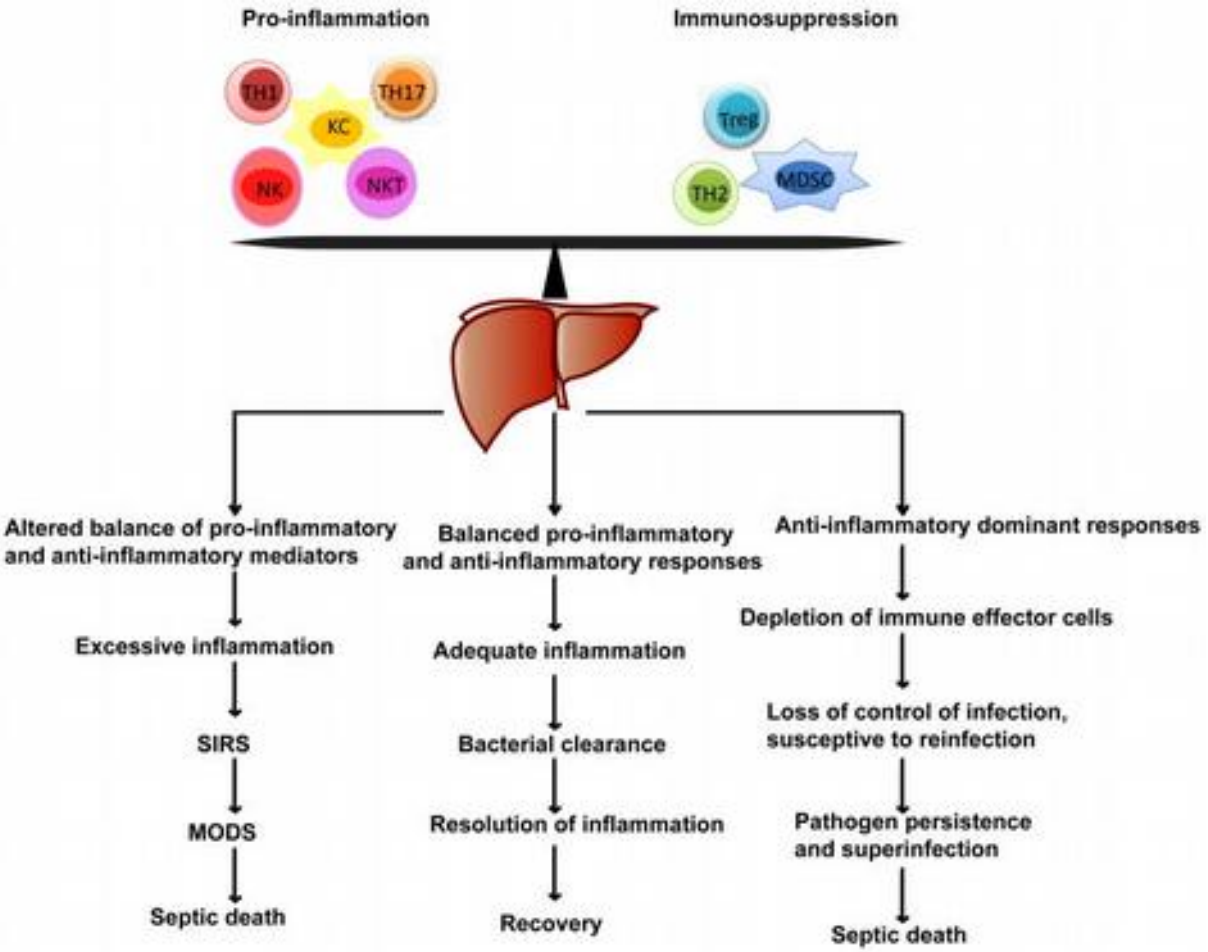

Sepse/játra

„Host response“ zprostředkována

- **Kupferovy bb (uvolnění cytokinů, ROS, NO – indukce poškození hepatocytů a LSEC)**
- **Neutrofily (uvolnění chemokinů, cytokinů – indukce poškození hepatocytů a LSEC)**
- **Hepatocyty – poškození – porucha transportu**
- **LSEC (Liver Sinusiodal Endothelial Cells)**

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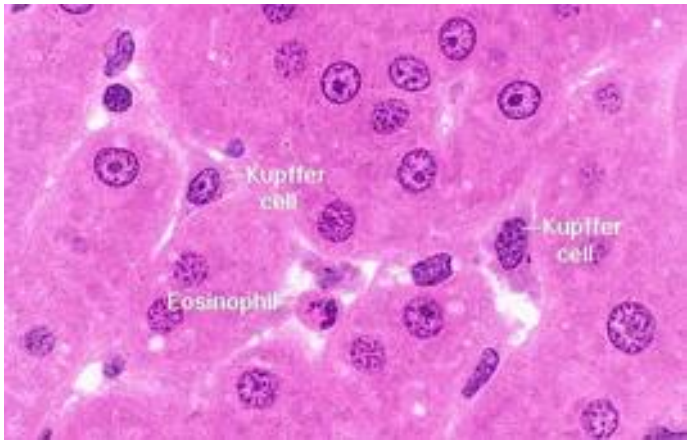

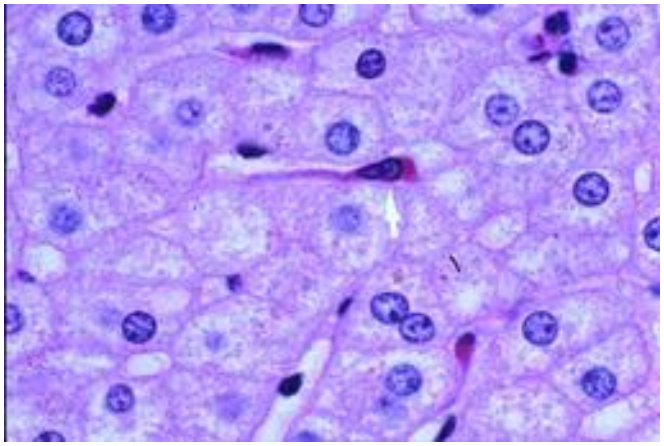

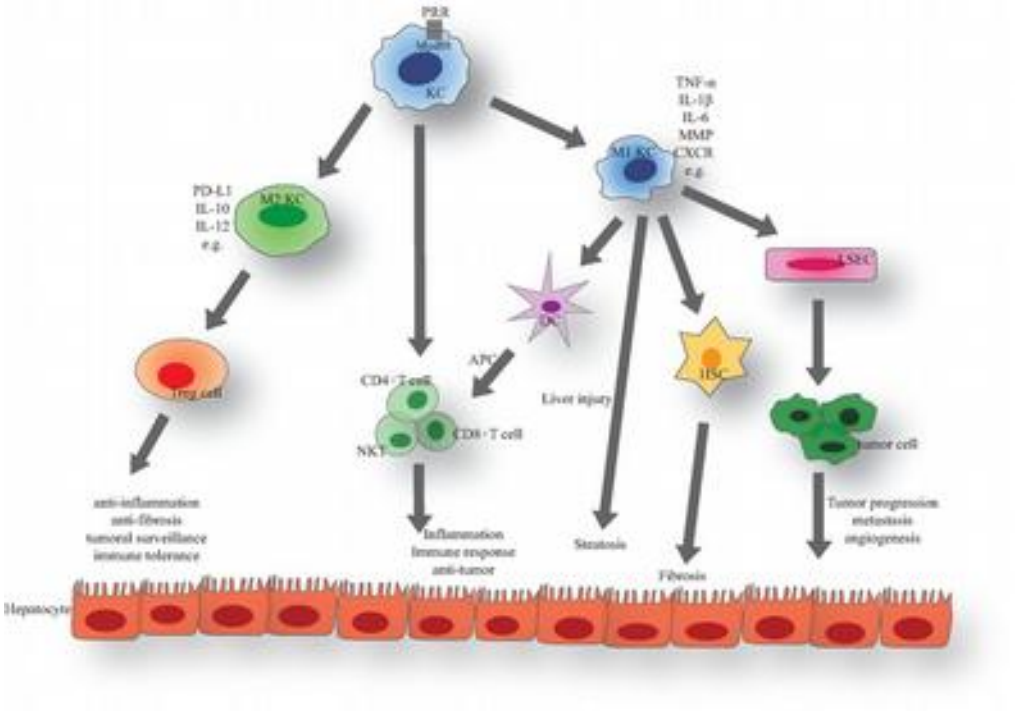

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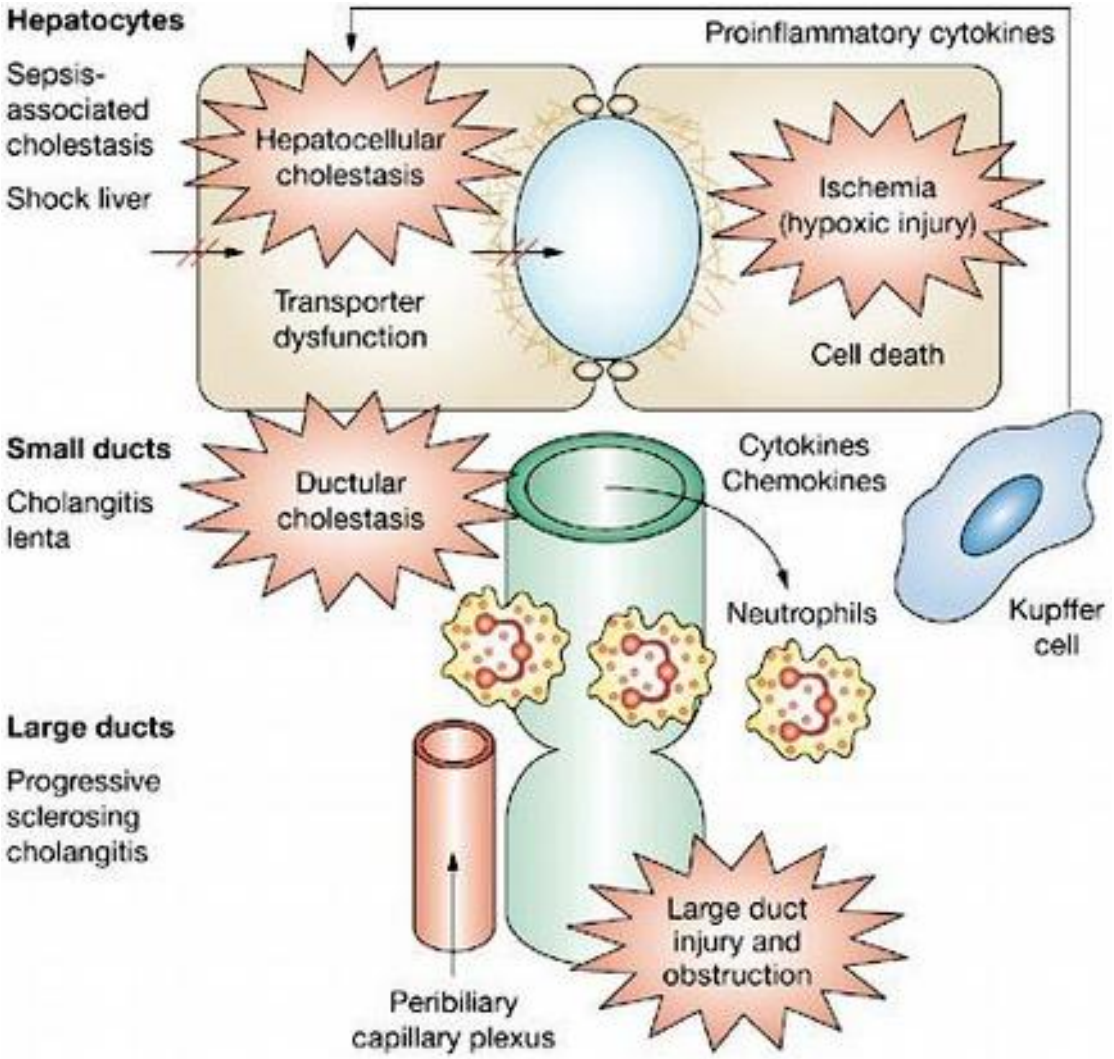
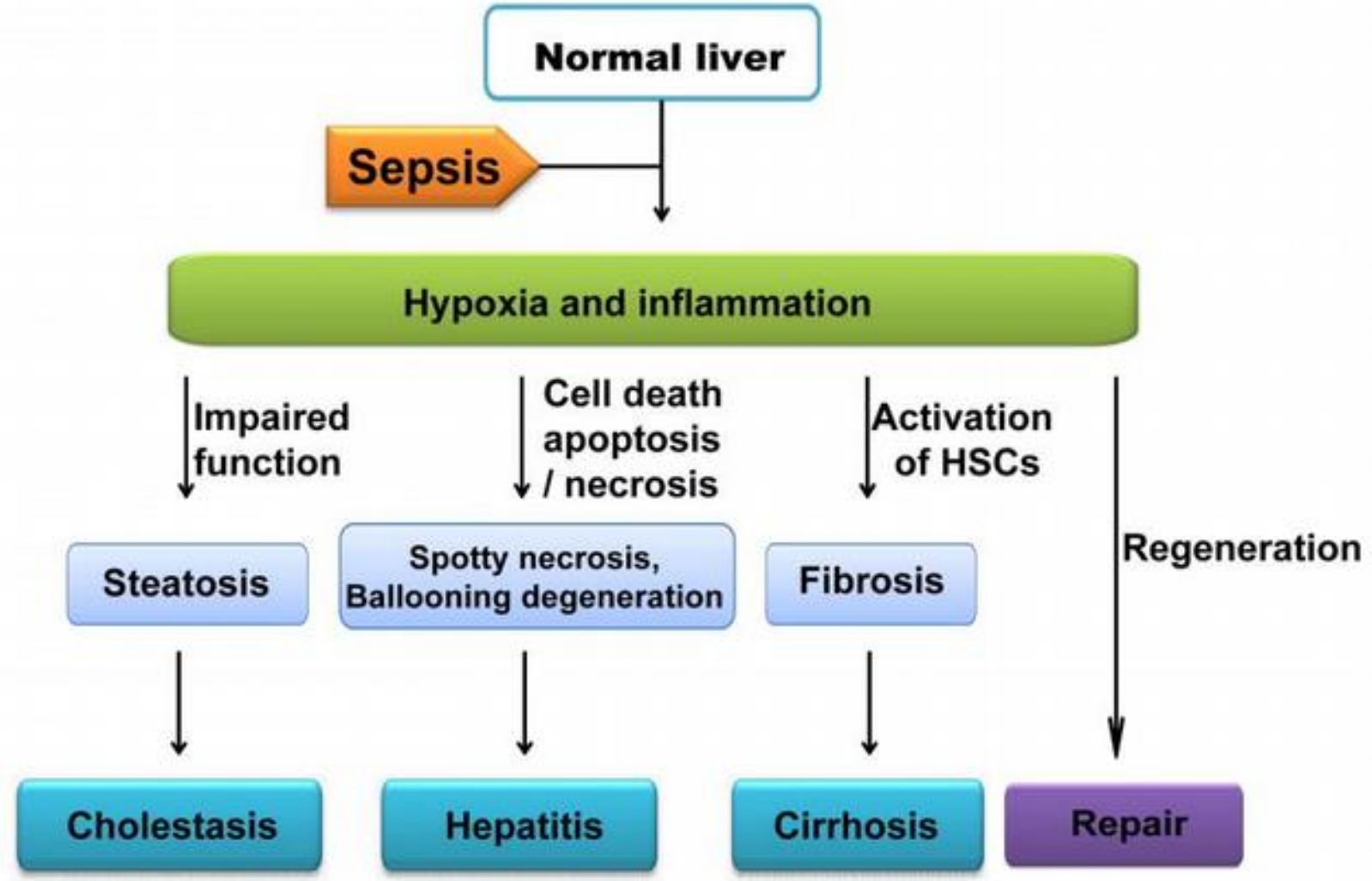

Hepatocytes
Proinflammatory cytokines
Sepsis-associated cholestasis
Shock liver
Hepatocellular cholestasis
Ischemia (hypoxic injury)
Transporter dysfunction
Cell death
Small ducts
Cholangitis lenta
Ductular cholestasis
Cytokines
Chemokines
Neutrophils
Kupffer cell
Large ducts
Progressive sclerosing cholangitis
Large duct injury and obstruction
Peribiliary capillary plexus

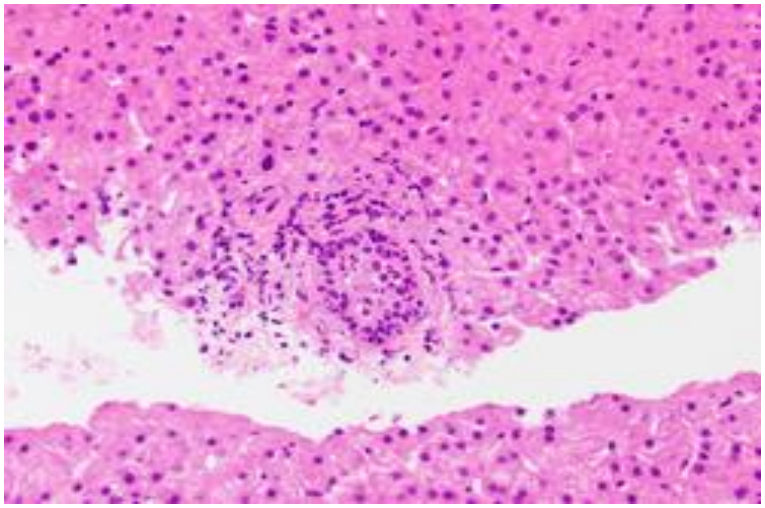


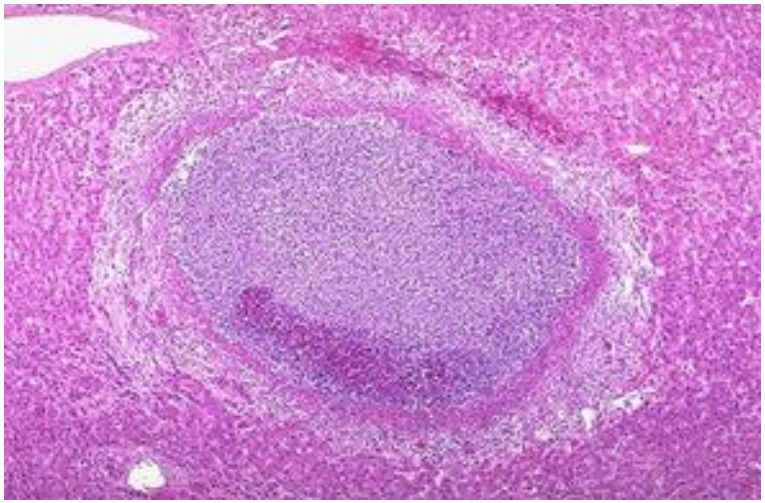
Hepatobiliární sepse
Mikroskopie

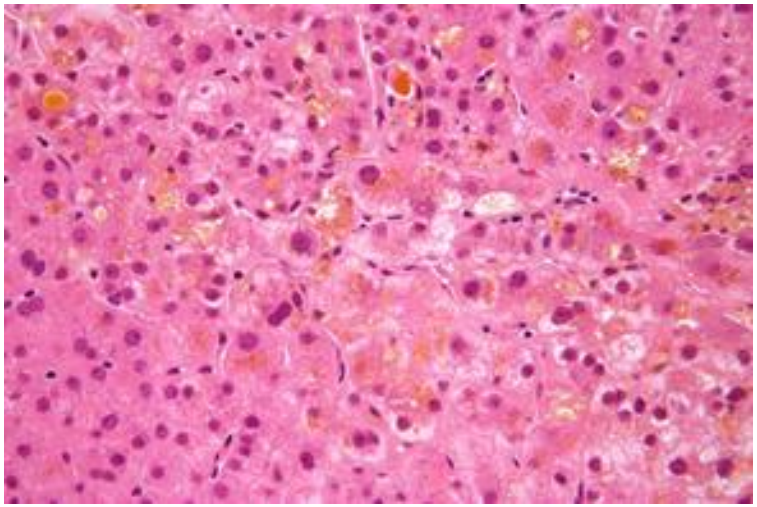
- Biopsie (kontraindikace?)
- Pitva
- Histologicky nález – steatoza, cholangioitis, **cholestaza** (intrahepatocytární)

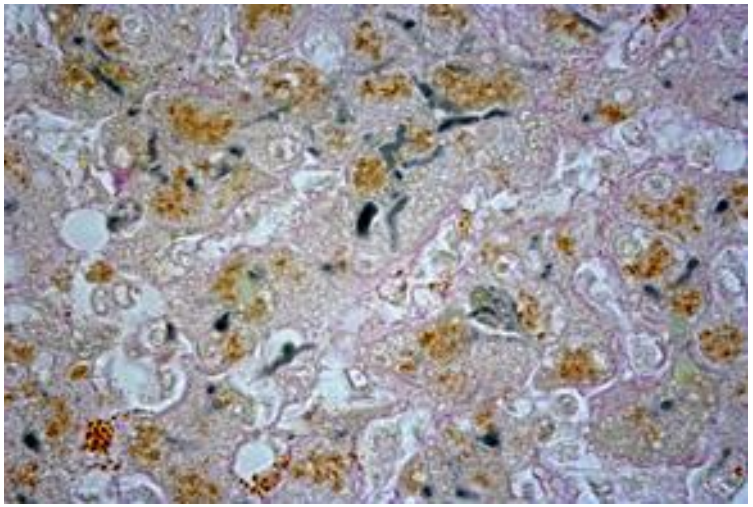
- **MICROSCOPIC:**

SEPTIC SHOCK	OTHER TYPES OF SHOCK
Leukostasis of neutrophils in sinusoids	Leukocytic infiltration of the acinocentral areas
Formation of intrasinusoidal fibrin aggregations	
Intraparenchymal haemorrhages	Liver cell necrosis (Hypovolemic/ traumatic shock)
Cholestatis without demonstrable extrahepatic obstruction	
Enlargement of Disse spaces with swelling of Kupffer cells	









Hepatobiliární sepse
Makroskopie

- **Chudá!**

- **GROSS:**
- ✓ Enlarged with tense capsule and rounded edges
- ✓ Spotty haemorrhages (DIC)

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Hepatobiliární sepse

Kultivace žluči – autopsie - nový podnět?

Common microorganisms isolated from bile cultures among patients with acute biliary infections

Isolated microorganisms from bile cultures	Proportions of isolated organisms (%)
Gram-negative organisms	
Escherichia coli	31–44
Klebsiella spp.	9–20
Pseudomonas spp.	0.5–19
Enterobacter spp.	5–9
Acinetobacter spp.	–
Citrobacter spp.	–
Gram-positive organisms	
Enterococcus spp.	3–34
Streptococcus spp.	2–10
Staphylococcus spp.	0[a]
Anaerobes	4–20
Others	–

Modified from the 2018 Tokyo Guidelines PMID 29090866

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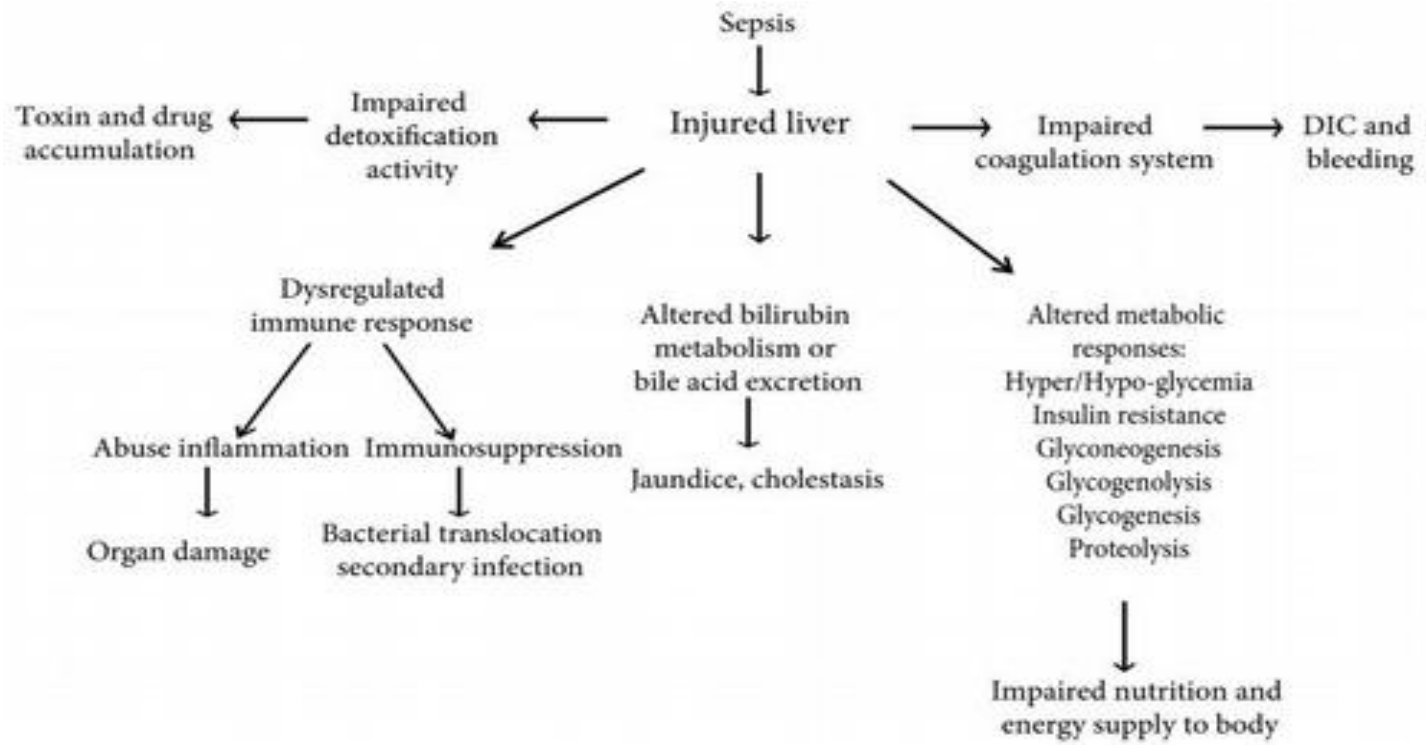
Take home message



- **Yan J *et al.* The role of the liver in sepsis. Int. Rev. Immunol. 2014**
- **Strnad P *et al.* Liver – guardian, modifier and target of sepsis. Nat. Rev. Gastroenterol. Hepatol. 2017**

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