Liver pathology 5
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Wilson disease

Laboratory findings:↓ serum ceruloplasmin, ↑ urinary exc. of Cu, ↑ hepatic content of copper

Liver:
Fatty change/ Acute hepatitis/ chronic hepatitis/ cirrhosis/ massive hepatic necrosis

Brain:
Toxic injury to basal ganglia esp. the putamen causing atrophy & cavitation

Eye:
kayser- fleischer rings: depositis of Cu. in descemet membrane in the limbus of the cornea (hepatolenticular degeneration)

-Most common presentation is acute on chronic hepatitis
-Neuropsychiatric presentation:
Behavioral changes/ Frank psychosis/ Parkinson disease- like syndrome

Autosomal recessive disorder of Cu metabolism

Mutation in ATP7B gene on chr. 13 which encodes an ATPase metal ion transporter in Golgi region

Defective function of ATP-7B

Failure of Cu. excretion into bile & inhibits secretion of ceruloplasmin into the plasma

↑Cu. Accumulation in the liver reults in:
1-Production of free radicals
2-Binding to sulfhydryl groups of cellular proteins
3-Displacement of other metals in hepatic metalloenzymes

By the age of 5yrs. Cu. Spills over to circulation causing hemolysis & involvement of other organs as brain & cornea also kidneys, bones joints & parathyroid glands
**Presentation > 6 yrs of age

α-1-Antitrypsin Defeciency

pi M contribute in producing 50% normal A1AT. So, in pi.MM→ there is 100% normal A1AT (50%+50%)

pi.Z → contribute in producing 10% normal A1AT. So, in pi ZZ there is 15-20% normal A1AT, leading to high risk of lng/liver disease

In pi.ZM→ ther is 60% normal A1AT, leading to some risk of lung/liver disease

Morphology: Intracytoplasmic globular inclusions in hepatocytes which are acidophilic in H&E sections (mallory bodies)/ The inclusions are PAS+ve & diastase resistant/ Fatty change

Clinical features: Neonatal hepatitis with cholestatic jaundice (10 – 20%)/ Attacks of hepatitis in adolescance/ HCC in 2- 3 % of Pizz adults +- cirrhosis/ Neonatal hepatitis cholestasis & fibrosis

α-1-antiryrpsin is a protease inhibtor as elastase, cathepsinG , proteinase 3 which are released from neutrophils at the site of inflammation

Autosomal recessive disorder, the gene is located on chr. 14

The most common genotype is pi.MM present in 90% of individuals (pi.M is normal allel)

pi.Z is mutated/diseased allel, produse misfolded α-1AT→ A1AT will stick in ER of hepatocytes → death of hepatocytes

-The accumulated α-1ATZ is not toxic but the autophagocytic response stimulated within the hepatocytes appear to be the cause of liver injury
-8-10% of patients develop significant liver damage

Reye's Syndrome

Encephalopathy and liver failure associated with salicylaye use in children (< 4 yr) with viral infection

3 – 5 days after viral illness

Pathogenesis: Derangement of mitochondrial function along or in combination with viral infection & salicylate

Morphology:
*Absent inflammation
*Microvesicular steatosis
*Sk. Muscles, heart, kidneys – fatty change

Clinical features:
*↑liver & abnormal LFT
*Vomiting & lethargy
*25% may go into coma
*Brain edema

Budd – Chiari Syndrome

Morphology:
Swollen liver, red with tense capsule/ centrilobular congestion & necrosis/ Fibrosis/ Thrombi

Clinically:
***Hepatomegaly/ Wt.gain/ Ascitis/ Abdominal Pain**
***Mortality rate is high if not treated**

Thrombotic occlusion of the hepatic vein

Causes:
1-PCV 2-Pregnancy 3-Postpartum 4-Oral contraceptive 5-PNH 7-Mechanical obstruction 8-Tumors as HCC 9-Idiopathic in 30% of the cases