

1. Long-term complications mainly include the following, except
- A. Recurrent liver diseases
 - B. Acute and chronic rejection
 - C. Adverse effects of immunosuppressive medications
 - D. Infective hepatitis

Answer: D

2. Many of the complications result in morphologic changes in the allografts and are reversible with appropriate therapy. Which of the following is not reversible?
- A. Acute Rejection
 - B. Cholangitis
 - C. Chronic Rejection and Fibrosis
 - D. Viral Hepatitis

Answer: C

3. In living donor liver transplant (LDLT) what is generally the cutoff to accept a right lobe liver
- A. 20% Steatosis
 - B. 40% Steatosis
 - C. 50% Steatosis
 - D. 60% Steatosis

Answer: A

4. Which is a common indication for liver transplantation in primary biliary cirrhosis (PBC)?
- A. Mild pruritus
 - B. Bilirubin over 50 mmol/L
 - C. One episode of variceal bleeding
 - D. Uncontrolled recurrent ascites
 - E. Chronic encephalopathy

Answer: B

5. Key in the pathogenesis of NASH is / are
- A. Insulin resistance
 - B. Hyperinsulinemia
 - C. Abnormal adipocytokine production
 - D. Mitochondrial dysfunction
 - E. All of the above

Answer: E

6. Which is an indication for cadaveric liver transplantation in patients with hepatocellular carcinoma (HCC)
- A. Patients with one nodule ≥ 5 cm
 - B. Only patients with HCC with portal vein thrombosis
 - C. Patients within Milan criteria
 - D. Patients beyond Milan criteria
 - E. Patients with extrahepatic disease

Answer: C

7. One of the major problems in LT is the shortage of donors. What strategy tries to improve this problem?
- A. Use of the so-called marginal livers (advanced age, steatosis)

- B. Use of livers with metabolic disorders or with viral infection without significant liver injury
- C. Use of the split -liver technique
- D. Living donor liver transplantation
- E. All of them are correct

Answer: E

8. Criteria for establishing the diagnosis of acute AMR in liver allografts
- A. Portal microvascular endothelial injury
 - B. Positive serum DSA
 - C. Diffuse microvascular C4d deposition
 - D. Mixed Lobular Inflammation

Answer: D

9. Living-donor liver transplantation:
- A. Does not allow earlier transplant at a lower MELD score
 - B. Has inferior outcomes to deceased donor liver transplants
 - C. Does not work for genetic diseases
 - D. Is currently viewed as experimental
 - E. Can be performed with a right or left lobe graft

Answer: E

10. Living-donor liver transplantation
- A. Can be done with a left lobe graft in most adult patients
 - B. Is associated with higher rates of biliary complications than deceased donor transplantation
 - C. Should be used for transplantation when a deceased donor graft is contraindicated (e.g. acute alcoholic hepatitis)
 - D. Is associated with a mortality rate in the donor of 3 –5%

Answer: B

11. Which criteria are considered as extended criteria for the liver allograft?
- A. Cold ischemia time < 6 hours
 - B. Donor age < 40 years
 - C. Liver steatosis < 20%
 - D. Split liver graft

Answer: D

12. The most effective means to screen for acute cellular rejection is:
- A. Liver biopsy
 - B. Liver function tests
 - C. Hepatic Doppler ultrasonography
 - D. Clinical symptoms
 - E. Cholangiography

Answer: A

13. Which of the following histologic findings are not criteria for diagnosing and grading acute cellular rejection?

- A. Ductopenia
- B. Portal inflammation
- C. Arteriopathy
- D. Venous endothelitis
- E. Bile duct damage and injury

Answer: A

14. Which disease does not recur after transplantation

- A. Autoimmune hepatitis
- B. Wilson disease
- C. Non-alcoholic steatohepatitis
- D. Budd–Chiari syndrome
- E. IgG4 autoimmune cholangitis

Answer: B

15. What is the most common cause of late (after 1 year) liver graft loss in pediatrics?

- A. Chronic rejection
- B. Hepatitis B or C Hepatitis
- C. Hepatic artery thrombosis
- D. Biliary atresia

Answer: D

16. Which is not consistent with Acute cellular Rejection

- A. Endothelitis
- B. Ductulitis
- C. Portal Inflammation
- D. Steatosis

Answer: D

17. Which of the following pathways is responsible for early acute T-cell mediated rejection?

- A) Donor antigen presenting cell presents donor antigens via MHC Class I and II to recipient T cells CD3 receptor with costimulation with B7:CD28 and CD40:CD40L
- B) Recipient antigen presenting cell presents donor antigens via MHC Class I and II to recipient T cells CD3 receptor with costimulation with B7:CD28 and CD40:CD40L
- C) Donor antigen presenting cell presents recipient antigens via MHC Class I and II to recipient T cells CD3 receptor with costimulation with B7:CD28 and CD40:CD40L
- D) Recipient antigen presenting cell presents recipient antigens via MHC Class I and II to recipient T cells CD3 receptor with costimulation with B7:CD28 and CD40:CD40L

Answer: A

18. What is not the feature of Chronic Rejection

- A. Degenerative changes involving small ducts
- B. Intimal/luminal inflammation
- C. loss involving <25% of portal tracts
- D. Intimal inflammation, focal foam cell deposition without luminal compromise

E. Fibrosis

Answer: E

19. Plasma cell–rich rejection shows the following characteristics, which is not true?

- A. severe lymphocytic cholangitis
- B. IgG4+ plasma cell under-representation
- C. Plasma cell–rich central perivenulitis
- D. DSA+
- E. Portal microvascular C4d deposition

Answer: B

20. A 41-year-old male developed fever, anorexia, weight loss, diarrhoea and blood in stools 1 year post transplant. A colonoscopy done showed mucosal inflammation and severe ulceration. A biopsy done showed nucleocytoplastomegaly and large intranuclear eosinophilic inclusions within capillary endothelium. This favours a diagnosis of

- A. Ulcerative Colitis
- B. Cryptosporidiosis
- C. Giardiasis
- D. CMV Colitis

Answer: D

21. Which of the following viral infections typically shows ground-glass hepatocytes on histological examination of a liver allograft?

- A. Cytomegalovirus
- B. Epstein-Barr virus
- C. Hepatitis B virus
- D. Hepatitis C virus
- E. Herpes simplex virus

Answer: C

22. Which of the following findings suggests hepatic artery thrombosis in a liver allograft?

- A. Portal inflammation with lymphocytes
- B. Centrilobular steatosis
- C. Bile duct necrosis and biliary epithelial sloughing
- D. Interface hepatitis
- E. Sinusoidal dilatation

Answer: C

23. What additional clinical finding is MOST important in confirming a diagnosis of antibody-mediated rejection in a liver allograft?

- A. Elevated liver enzymes
- B. Presence of donor-specific antibodies
- C. Fever
- D. Eosinophilia
- E. Elevated bilirubin

Answer: B

24. What is the predominant cell type causing microvascular injury in antibody-mediated rejection?

- A. Cytotoxic T lymphocytes
- B. Helper T lymphocytes

- C. Neutrophils
- D. Plasma cells
- E. Kupffer cells

Answer: C

25. In chronic rejection, what is the characteristic feature of small bile ducts on histology?

- A. Hyperplasia
- B. Dysplasia
- C. Atrophy and eventual disappearance
- D. Mucin metaplasia
- E. Granulomatous inflammation

Answer: C

26. A 3-month-old infant presents with elevated liver enzymes. Labs show AST 45, ALT 50, ALP 401 and total bilirubin of 3.1. Her parents note that she has chronic diarrhea, hearing loss and short stature. GGT is low. RUQ US shows no dilation of intra- or extra-hepatic bile ducts. A liver biopsy is performed and shows bland cholestasis.

Which of the following is the correct diagnosis?

- A) PFIC1, mutation of the ATP8B1 gene
- B) PFIC2, mutation of the ABCB11 gene
- C) PFIC3, mutation of ABCB4 gene
- D) BRIC1, mutation of the ATP8B1 gene
- E) BRIC2, mutation of the ABCB11 gene

Answer. A

27. What is the MOST common pattern of ischemic injury in liver allografts?

- A. Portal-based necrosis
- B. Mid-zonal necrosis
- C. Centrilobular (zone 3) necrosis
- D. Periportal (zone 1) necrosis
- E. Focal random necrosis

Answer: C

28. Which immunohistochemical marker would be MOST useful in identifying recipient-derived T lymphocytes in a case of suspected acute cellular rejection?

- A. CD20
- B. CD3
- C. CD138
- D. CD68
- E. CD31

Answer: B

29. Which pathological feature is most indicative of a bacterial infection in a liver transplant biopsy?

- A) Lymphocytic infiltrates in the portal tracts
- B) Microabscesses with neutrophilic infiltration
- C) Ballooning degeneration of hepatocytes
- D) Ground glass appearance of hepatocytes

Answer: B)

23. Tacrolimus is administered preferentially over cyclosporine as an immunosuppressive agent because:

- A. Cyclosporine is no longer available
- B. Tacrolimus is less expensive
- C. Tacrolimus is more efficacious
- D. Both drugs are equally efficacious

Answer: C