

Epstein Barr Virus (EBV)

Replicate in **lymphoid tissue** lymphotropic (B-cell nasopharynx)
It has oncogenic properties;
Burkitt's lymphoma.
Nasopharyngeal carcinoma.

Epidemiology

Worldwide.

Transmission:
Saliva (kissing disease).
Blood (rarely).
Age:
Low SE class → early **childhood**.
High SE class → **adolescence**.

Clinical features (immunocompromised host)

***Asymptomatic** → children.
***Infectious mononucleosis [glandular fever](MCQ):**
IP = 4-7 weeks
Young adults, **fever**, pharyngitis, malaise, LAP, hepatosplenomegaly & abnormal LFT.
Rash may follow **ampicillin**.
Last 2- 3 weeks.
Complications: acute air way obstruction, splenic rupture, CNS inf).
***Chronic EBV infection.**
***Lymphoproliferative disease (LD).**
***Oral hairy leukoplakia (OHL).**

Diagnosis

Hematology → ↑ **Atypical lymphocytosis** (WBC).
Serology:
Non-specific AB test ;
Heterophile Abs +ve
Paul-Bunnell or mono-spot test
EBV-specific AB test:
IgM Abs to EBVirus capsid antigen
EBV Ags & EBV-DNA.

Prevention

No vaccine

Treatment

Antiviral drug is not effective in IMN.
Steroid in severe cases.

Yellow Fever virus

Flaviviridae
Reservoir: Mammals
Vector: **Mosquito**
Transmission: bite of infected mosquito.
Asymptomatic to Jaundice, fever(±), hemorrhage(±), renal failure.
Epidemiology: Tropical Africa & South America.
Two types: Jungle Yellow Fever & Urban Yellow Fever.

Lab

1.Isolation (Good standard):
Samples: blood, CSF, Viscera .
Cell culture →CPE.
→Identify by IF.
2.**IgM** -AB⁺ - EIISA, IF (**most used**).
3.Arbovirus RNA by RT-PCR.

Prevention

1.Vector Control:
Elimination of vector, Avoidance contact with vectors.
2.Vaccines: Important: Yellow Fever vaccine.

Hepatitis Virus

Both viruses are **non-enveloped**,
Icosahedral, single (+) sense stranded
RNA & have one serotyped.

Hepatitis A → Hepatovirus (Picornaviridae)

Hepatitis A Epidemiology

Worldwide, endemic in tropical countries.

Transmission

Fecal-oral route → contaminated food & water.
Sexually.
Blood transfusion.

Pathogenesis

Cross GIT mucosa → liver cells & excreted through bile into GIT (Stable) → damage hepatocyte → ↑ ALT, AST & bilirubin.

Clinical manifestation

IP 2-6 weeks.
Pre icteric phase:
Pain RUQ, **fever**, fatigue, N & V.
Icteric phase: **dark urine**, pale stool, **jaundice** & symptomatic illness with age.
Anicteric Infection: asymptomatic, common in children, **fulminant hepatitis** (0.1%), → 50% mortality.

Diagnosis

↑ Aminotransaminases.
Anti-HAV-IgM → **Current** Infection.
Anti-HAV IgG → **Previous** Infection or immunity (**MCQ**).

Prevention

Vaccination:
High risk of infection.
Combined **with HBV** vaccine (0,1 & 6 months).
IG.

Hepatitis E → Hepevirus (Hepeviridae)

Transmission

Waterborne, foodborne & perinatal.

Clinical features

IP = 4-8 Weeks.
Similar to HAV
Can lead to Fulminant disease.
Mortality rate 10x HAV.

Diagnosis

Anti-HE IgM by ELISA
PCR.

Prevention

Same as HAV but no IG or vaccine

Cytomegalovirus CMV

Its replication cycle is **longer**.
Infected cell enlarged with multinucleated cells.
Latent in **monocyte** & **lymphocyte**.

Epidemiology

Worldwide.

Transmission

Transplacenta, birth canal, breast milk.

Young children → saliva.

Later in life → sexual.

Blood transfusion & organ transplant.

Acquired infection

Immunocompetent host:

Asymptomatic, self-limited illness, hepatitis, **Infectious mononucleosis like syndrome** [Heterophile AB is -ve]

Immunocompromised host:

Primary or recurrent.

Pneumonia, Hepatitis, Encephalitis, Retinitis, Esophagitis, Colitis.

✓ Could be **Congenital infection**.

Diagnosis

Histology: Intranuclear inclusion bodies → Owl's eye.

Culture: In human fibroblast:

1-4 wks → CPE

Shell Vial Assay → 1-3 days.

Serology:

AB → IgM: 1 or R inf.

→ IgG: previous exposure

Ag → CMV pp65 Ag by IFA

PCR.

Prevention

Screening.

Leukocyte-depleted blood.

Chemoprophylaxis:

Ganciclovir.

Immunoprophylaxis: CMVIG.

No vaccine.

Treatment

Ganciclovir.

Foscarnet.