

VIROLOGY LECTURE

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Epstein Barr Virus (EBV)

Virology:

- Herpesviridae
- Enveloped, icosahedral nucleocapsid
- ds-DNA
- Replicate in the nucleus
- Buds from the nuclear membrane
- Remains latent in B-cells

Clinical Syndromes Associated with EBV Infection

- Infectious mononucleosis
- Chronic EBV-infection
- X-linked lymphoproliferative syndrome
- Lymphoproliferative disorders in immunocompromised patients
- Burkett's lymphoma
- Nasopharyngeal carcinoma

Infectious Mononucleosis

Viral etiology:

- EBV

Transmission:

- By close contact, the virus is secreted in saliva

I.P.:

- 4 – 7 weeks

Signs & Symptoms:

- Children infected with EBV, develop no symptoms
- When infection occurs in adolescence, it causes infectious mononucleosis
- The main symptoms are
 - Fever
 - Sore throat
 - Generalized lymphadenopathy
 - Malaise
 - Fatigue
 - Splenomegaly
 - Hepatomegaly
 - Abnormal LFT

Signs & Symptoms: (Continued)

- Lymphocytosis with atypical lymphocytes
- Development of heterophil-Ab to SRBC

Prognosis

- Self-limiting disease, but the virus remains latent in B-cells for life.

Duration

- The disease seldom lasts for more than 4-month
- If the disease lasts for more than 6-months, it is frequently called chronic EBV-infection

Complications:

- Guillain-Barre syndrome
- Meningoencephalitis
- Thrombocytopenia
- Carditis

Lab. Diagnosis:

- Primary infection
 - EBV infection is indicated if IgM-Ab to the viral capsid antigen (VCA) is present and IgM-Ab to EBV-nuclear antigen is absent (EBNA)
- Immunity
 - When IgG-Ab to both VCA and EBNA are present

X- Linked Lymphoproliferative Syndrome

- Approximately half of individuals with this syndrome experience severe life-threatening infectious mononucleosis when they expose to primary EBV-infection.
 - Generalised lymphadenopathy
 - Hepato & Splenomegaly
 - Thrombocytopenia
 - Aplastic anemia
- This disorder is usually fully expressed in males only.

Burkitt Lymphoma (BL):

- A highly malignant tumour of the lymphoid tissue (lymph glands)
- The earliest manifestation is swelling of the lymph nodes in the neck or below the jaw.
- The swollen lymph nodes are often painless and can grow very rapidly.
- It is confined to parts of Africa that endemic with malaria.
- BL is usually curable (90%) if treated aggressively with chemotherapy.
- If the cancer spread to bone marrow and spinal fluid the cure rate drops to about 75%.

Nasopharyngeal carcinoma (NPC)

- NPC is a malignant tumour of the squamous epithelium of the nasopharynx.
- It is prevalent in South china.