

DNA NONENVELOPED VIRUSES

- **ADENOVIRUS**
- **HUMAN PAPILLOMA VIRUS**
- **PARVOVIRUS B19**

ADENOVIRUS

- **Disease**
- **Transmission**
- **Pathogenesis**
- **Laboratory Diagnosis**
- **Treatment**
- **Prevention**

DISEASES

- Adenovirus causes upper and lower respiratory disease
 - Pharyngitis
 - Pneumonia
- Enteric strains cause diarrhea
 - To cause viral Acute Gastroenteritis

TRANSMISSION

- Respiratory droplets [primary]
- Iatrogenic [eye disease]
 - Respiratory fluid rub to eyes
- Fecal-oral [enteric strains]

PATHOGENESIS

- Infects epithelium of [respiratory tract and eyes]
- Then, it causes acute infection
- This will lead to a persistent, low grade virus production in pharynx [asymptomatic]

LABORATORY DIAGNOSIS

- Gold standard: CPE in cell culture
- The virus can be identified by fluorescent antibody or complement fixation test.
- Antibody titer rise in convalescent phase serum is DIAGNOSTIC

PREVENTION

- The live vaccine against types 3,4, and 7 is used in military to prevent pneumonia

HUMAN PAPILLOMA VIRUS

- **Diseases**
- **Transmission**
- **Pathogenesis**
- **Laboratory Diagnosis**
- **Prevention**

DISEASES

- HPV causes papillomas [warts]
 - Trunk and Extremities: Verruca vulgaris
 - Genitalia: Condyloma acuminatum
 - Soles, plantar surface of feet: Verruca plantaris
- HPV causes condyloma acuminata [genital warts]
 - Unlike herpes, vesicles seen in crops
- HPV is associated with carcinoma of cervix and penis

TRANSMISSION

- The virus is transmitted by direct contact of skin or genital lesions

PATHOGENESIS

- Early viral genes [E6 and E8] encode for certain proteins
- These genes inhibit the activity of proteins encoded by tumor suppressor genes [p53 and RB]

LABORATORY DIAGNOSIS

- Diagnosis is made by finding koilocytes in the lesions
 - LPO
 - Hyperkeratosis
 - Papillomatosis
 - Acanthosis
 - HPO
 - Koilocytes
- DNA hybridization tests are available
 - In molecular level
- Viral isolation and serologic tests are not done

TREATMENT

- Treatment varies according to the site OF LESIONS
 - Liquid nitrogen is used for skin lesions
- Podophyllin is used for genital lesions
- Salicylic acid is used for plantar lesions.
- Alpha interferon is also available as treatment
 - Immunocompromised patients

PREVENTION

- A vaccine containing the capsid proteins of HPV types 6, 11, 16, and 18 is available

PARVOVIRUS B19

- **Disease**
- **Transmission**
- **Pathogenesis**
- **Laboratory Diagnosis**

DISEASES

- Parvovirus causes the slapped cheek syndrome [erythema infectiosum]
- Also causes:
 - Aplastic anemia
 - Arthritis
 - Hydrops fetalis

TRANSMISSION

- Via respiratory droplets or transplacental

PATHOGENESIS

- Virus infects erythroblasts
- Leads to aplastic anemia
- Can also form immune complexes
- To cause rash and arthritis
- Can also infect the fetus to cause severe anemia
- Then it could lead to CHF and edema [hydrops fetalis]

LABORATORY DIAGNOSIS

- Serologic tests are used for diagnosis