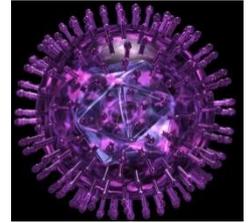


VIRAL SKIN INFECTIONS

By:

Prof. Dr. Ghada Fahmy Helaly

Herpes Simplex Virus (HSV)



- **HSV-1 and HSV-2 are distinguished by two main criteria: antigenicity and location of lesions.**



Diseases:

- HSV-1: acute gingivostomatitis, recurrent herpes labialis (cold sores), keratoconjunctivitis (keratitis), herpetic whitlow and encephalitis.
- HSV-2: herpes genitals, neonatal herpes, and aseptic meningitis.



- Enveloped - Icosahedral nucleocapsid- Linear ds.DNA.

- **HSV1:** Saliva or direct contact

- **HSV2:** Sexual contact , passage through the birth canal.

- ***Pathogenesis:*** Initial vesicular lesions??

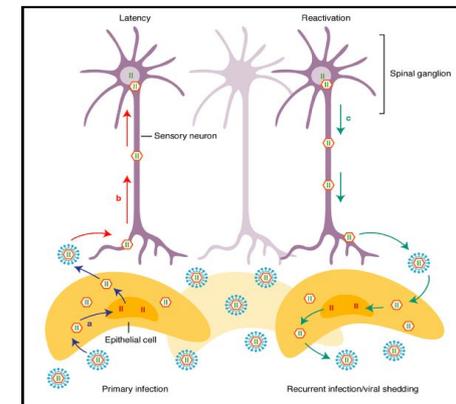
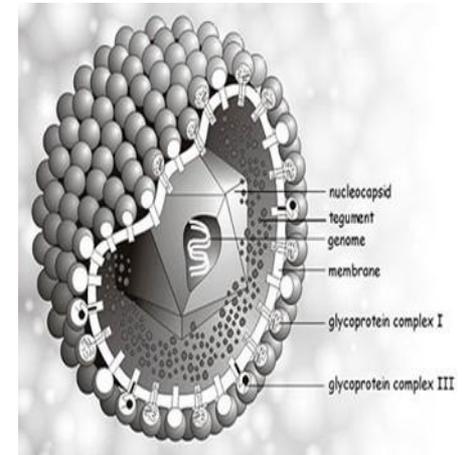
- HSV1 latent in sensory (trigeminal) ganglia.

- HSV2, latent in sensory (lumbar or sacral)

ganglion cells.

- Recurrences occur in skin innervated by affected sensory nerve.

- Dissemination to internal organs(depressed CMI).



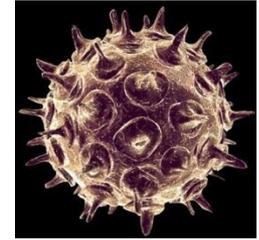
Laboratory Diagnosis:

- Cytopathic effect (CPE) in cell culture.
- Tzanck smear ??
- A rise in antibody titer (primary infection).
- HSV encephalitis ---- a PCR assay.

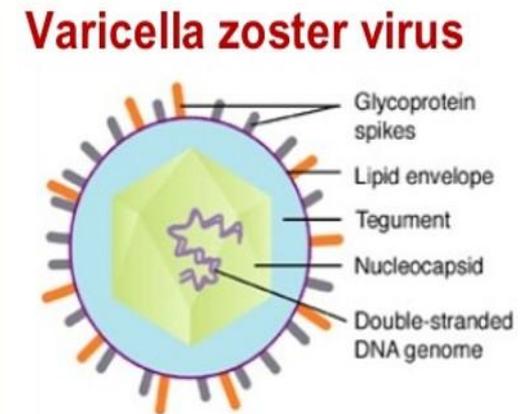
Treatment and Prevention:

- Protection from exposure to vesicular lesions.
- Avoiding the specific inciting agent.
- Acyclovir.
- Neonatal infection ---cesarean section.
- No vaccine.

Varicella-Zoster Virus



- Varicella (chickenpox) in children and zoster (shingles) in adults.
- Enveloped , icosahedral nucleocapsid and linear double-stranded DNA. No virion polymerase.
- One serotype.
- Varicella □ respiratory droplets.
- Zoster ??
- Oropharynx □ blood □ the skin.
- latent in the sensory ganglia.



Diagnosis: Clinically.

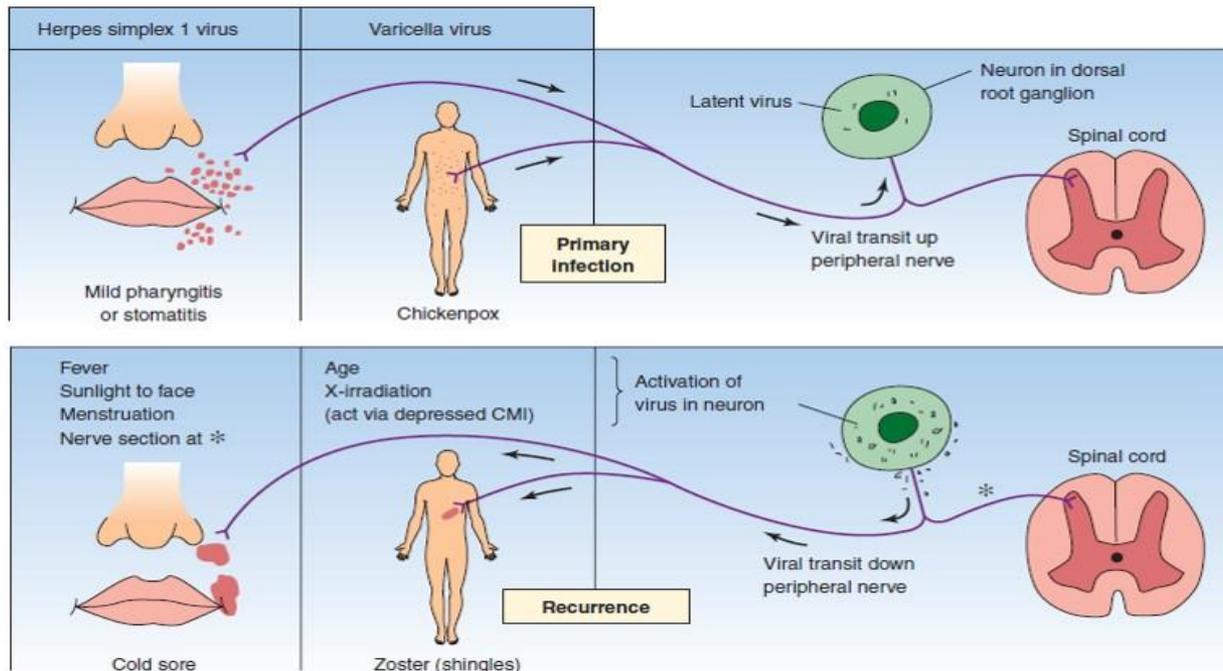
CPE in cell culture

Smear.??

A four-fold or greater rise in Ab. titer.

Treatment and Prevention: - Live, attenuated vaccine
- VZIG.??

Acyclovir -- immunosuppressed individuals



Human herpes viruses 6 and 7

- **Exanthem subitum (roseola)** in young children between 6 months and 2 years old
- Rapid onset fever and an immune-mediated generalized rash.

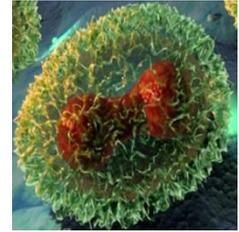


Human Herpes virus 8

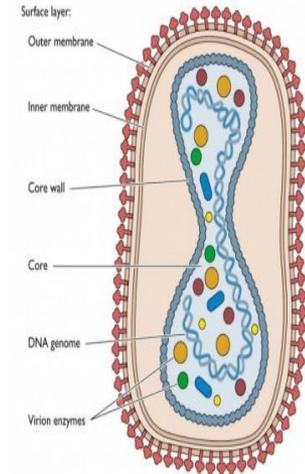
- Kaposi's sarcoma, especially in AIDS patients.
- Transmitted sexually.



Smallpox Virus



- Smallpox. - One serologic type.
- Enveloped virus with linear double-stranded DNA.
- DNA-dependent RNA polymerase in virion.
- Transmitted by Respiratory droplets or direct contact.
- Skin lesions: macule, papule, vesicle, pustule, crust.



Laboratory Diagnosis:

- Cell culture
- “Pocks” on chorioallantoic membrane.
- Electron microscopy
- Viral antigens in the vesicle fluid.

Prevention: vaccine contains live, attenuated vaccinia virus.

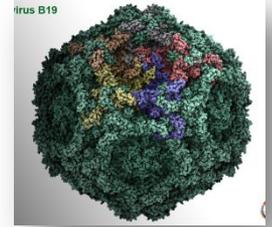
Molluscum Contagiosum Virus

- Causes molluscum contagiosum.
- Pinkish, papular skin lesions with an umbilicated center.
- Transmitted by direct contact.
- Diagnosis: clinically.
- Cidofovir: Extensive lesions in immunocompromised patients.





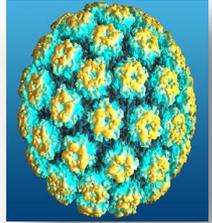
Parvovirus B19



- Usually asymptomatic,
- Can cause slapped cheek syndrome [erythema infectiosum (**fifth disease**)], aplastic anemia, arthritis, and hydrops fetalis.
- Non-enveloped - icosahedral symmetry- ssDNA
- There is one serotype.
- Respiratory droplets and transplacental
- Virus infects erythroblasts.
- **Laboratory Diagnosis:** ELISA for IgM).



Human Papillomavirus



- Papillomas (cutaneous warts)
- Condylomata acuminata (genital warts); Cancer cervix and penis.
- Non-enveloped - icosahedral - circular dsDNA.
- There are at least 60 types
- **By** Direct contact of skin or genital lesions.
- Two early viral genes, E6 and E7??

Laboratory Diagnosis:

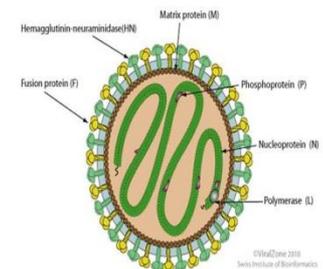
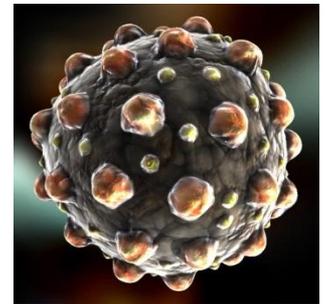
- Clinically
- Finding koilocytes in the lesions.
- DNA hybridization tests.



Measles Virus

Measles: Maculopapular rash , Koplik spots on buccal mucosa. Complications: encephalitis, pneumonia, SSPE

- Enveloped - helical nucleocapsid
- SS negative-polarity RNA. It has a single serotype.
- Transmitted by Respiratory droplets.
- Diagnosis: Clinical - Serologic tests and PCR
- Live, attenuated vaccine.



Rubella Virus



Disease: Rubella: subclinical or symptomatic.

- 3- to 5-day rash and swollen neck and sub-occipital lymph nodes.
- More severe in adults, complicated by arthralgia, arthritis, and encephalitis
- Single serotype.
- Enveloped - icosahedral nucleocapsid - ss positive-polarity RNA.
- Respiratory and trans-placental, first trimester □ congenital malformations . Congenital rubella syndrome
- **Diagnosis:** IgM, IgG antibody, PCR assay.
- **Live, attenuated Vaccine**

