

# \* VIRAL INFECTIONS

## Classification of major virus groups & Virus diseases:

### \* RNA viruses:

(a) Orthomyxovirus

i) Influenza

(b) Paramyxovirus

i) measles

ii) mumps

(c) Rhabdovirus:

i) Rabies

ii) Hemorrhagic fever

(d) Arenavirus:

i) Lymphocytic choriomeningitis

ii) Lassa fever

(e) Calicivirus

(f) Corona virus

i) upper respiratory infections

(g) Bunyavirus

(h) Picornavirus

i) poliomyelitis

ii) Coxsackie disease

iii) common cold

iv) Foot & mouth disease

v) Encephalomyocarditis



J. Reovirus

J. Togavirus

i. Rubella

ii. Yellow fever

iii. St. Louis encephalitis

e) Retrovirus (RNA tumour virus)

### \* DNA viruses:

a) Herpes virus -

i. Herpes simplex virus 1, Gingivostomatitis, keratoconjunctivitis, genital & skin lesions.

ii. Herpes simplex virus - 2

iii. Varicella-zoster virus

iv. Cytomegalovirus

v. Epstein-Barr virus

vi. Human herpes virus 6

vii. Human herpes virus 7

viii. Human herpes virus 8

ix. Simian herpes virus

(d) parvovirus

(e) Iridovirus

f) papovirus

i. Human warts

ii. Tumour virus in animals

b) pox virus -

i. small pox

ii. Molluscum contagiosum

c) Adenovirus

i. pharyngoconjunctival fever

ii. epidemic keratoconjunctivitis



## \* Herpes simplex virus:

- human reservoirs only
- 2 types structurally similar, antigenically & histologically different
- HSV-1,  $\alpha$ -herpes virus, is a ubiquitous virus above the waist - face, lips, oral cavity, upper body, skin
- HSV-2 - below the waist - genital lesions

### pathogenesis:

- Human-only natural hosts
- sources - saliva, skin lesions, respiratory secretions
- transmission - close contact
- Virus - enters through the defect in skin & mucous membranes locally, cell to cell spread
- Enters - enter nerve fibers - intraaxonally to the ganglia centrifugal migration - from ganglia to skin & mucosa cutaneous & mucosal lesions
- virus remains latent in ganglia - Trigeminal & cranial nerves

### primary herpes simplex:

Acute herpetic gingivostomatitis:

- most common pattern of symptomatic primary HSV infection



- Incidence of primary HSV-1 increases after 6 months of age

- peak of incidence - 2 & 3 yrs of age

- Incidence of HSV-2 - doesn't increase until sexual activity begins

- Clinical features:

- many primary infections are subclinical

- symptomatic disease preceded by prodromal fever, headaches, malaise, pain, vomiting & (E)

- oral lesions - 1-2 days after prodromal, 1-2mm

pinhead vesicles - collapse - numerous small red lesions -

enlarge - central area of ulceration with yellow fibrin

ulcers with coalesce - larger shallow irregular ulcers -

heal 10-14 days

- Satellite vesicles - perioral skin - common

Gingiva:

- self inflammation - inoculation - fingers, eyes, genital area

- children - generalised initial - maculae later - purpura

cutaneous rash

- Adults - pharyngotonsillitis - sore throat, fever, malaise - head

ache initial symptoms

- numerous small vesicles - tonsils
- mild - resolve - 5-7 days
- Rare complications - keratoconjunctivitis  
oesophagitis  
meningitis  
encephalitis

### Herpetic infection:

- site - Adjacent areas of epithelium
- Recurrence of HSV-1 → lips - herpes labialis
- prodromal signs. 6-24 hr before lesion develops
- pain, burning, itching, tingling, localized warmth, erythema of involved epithelium
- multiple, small erythematous papules - clusters of fluid filled vesicles - rupture - crust (2 days)
- Immunocompetent patient - keratinised mucosa - attached gingiva & hard palate & dorsum of tongue

### management

pain control  
 d/ nelsons lidocaine  
 0.5% diphenhydramine  
 systemic analgesic  
 benzocaine

### supportive care

hydration  
 ice-chips  
 soft bland diet

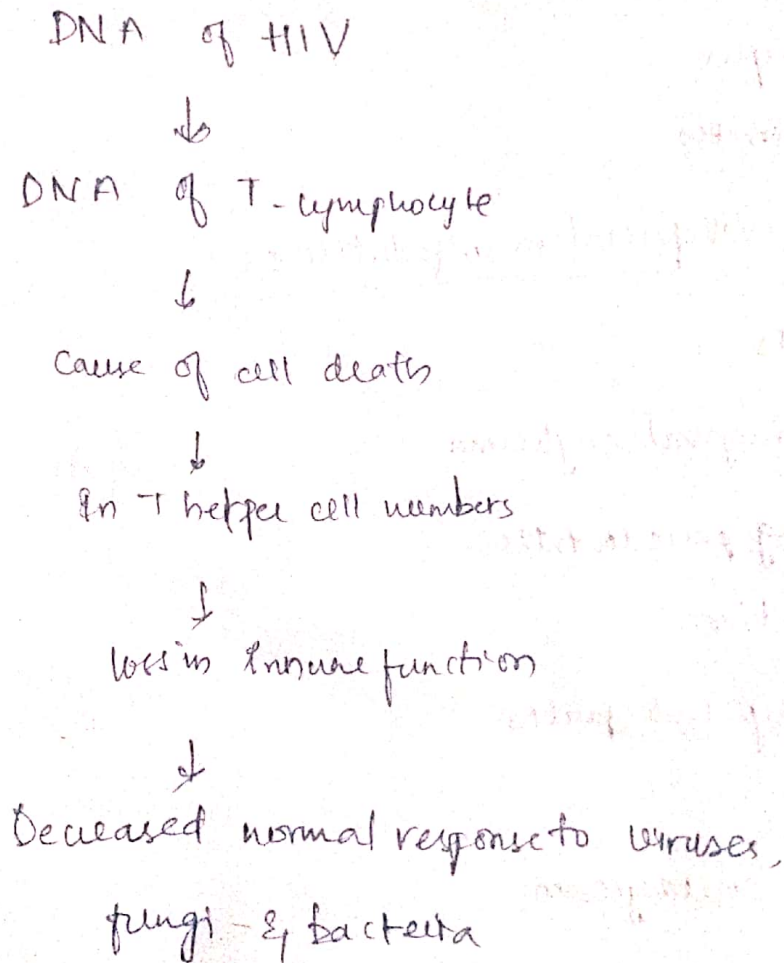


# \* HIV/AIDS

Etymology: HIV1 & HIV2

modes of transmission — sexual transmission  
Blood/ blood products  
Vertical transmission

Pathogenesis:



Course of disease:

- Acute viral syndrome
- Asymptomatic
- AIDS related complex
- Full blown AIDS

## Systemic manifestations:

pulmonary tuberculosis

pharyngeal candidiasis

Herpes zoster

Pinea infections

Gastroenteropathy

Herpes simplex

CMV retinitis

## Oral & Maxillofacial manifestations:

Candidiasis

Linear gingival erythema

Necrotising periodontitis

pigmentation

Oral hairy leukoplakia

Ulcers

molluscum contagiosum

parotitis

Herpes simplex

Herpes zoster

TB lymphadenitis

Kaposi's sarcoma



Candidiasis - pseudomembranous

Erythematous & Atrophic

Chronic hyperplastic

Angular cheilitis

pseudomembranous candidiasis:

Cheese like yellow & white plaques on any oral surface

- can be scraped off

- Erythematous candidiasis

- Red areas on any oral surface

- Atrophic areas

chronic hyperplastic candidiasis:

- white & yellow plaque on any oral surface

- cannot be scraped off

Angular cheilitis:

- occurs at commissures of lip

- Red radiating fissures & linear ulcers

Linear gingival erythema:

- Erythematous gingival band

- minimal & not local inflammation



## Diagnosis:

ELISA

Western blot

Immunofluorescence

Dot blot

PCR

Treatment: Zidovudine

Lamivudine

Didanosine

Zalcitabine

## \* Infectious mononucleosis \*

Synonym - Monoglandular fever, kissing disease  
caused by EBV (Epstein bar virus)

- infection usually occurs by intimate contact through  
direct salivary transfer

Other lesions caused by EBV:

Burkitt's lymphoma

OTL

Nasopharyngeal CA

Clinical features:

Fever, lymphadenopathy, pharyngitis, Hepatosplenomegaly  
Rhinitis & cough

complications: Thrombocytopenia  
Seizures

Oral lesions: petechiae on the hard & soft palate

-ANUG is also fairly common

less frequently -ANUG-like pericoronitis

Diagnostics - mainly by clinical presentation

lab diagnostics - Increased WBC

Reactive lymphocytes

Treatment: symptomatic treatment

-Acyclovir

\* Herpes Zoster (Shingles):

After initial infection with VZV, the virus is transported  
up the sensory nerves & presumed to establish



latency in the dorsal spinal ganglion



After reactivation of virus, clinically evident

Herpes zoster occurs.



## predisposing factors:

Immunosuppression

Treatment with cytotoxic drugs

Radiation

presence of malignancies

Old age

Alcohol abuse & dental manipulation

## Clinical features:

- pain in the area of epithelium innervated by the affected sensory nerve
- Typically one dermatome is affected
- prodromal symptoms → pain  
fever  
malaise  
headache
- Involved skin → cluster of vesicles set on an erythematous base within 3-4 days vesicles become pustular & ulcerate

## Histopathological features:

- keratinocytes - multinucleated, acantholytic with distinct nucleus inclusions - found in follicular epithelium
- late epidermal necrosis on full thickness acantholysis

- Dental nerve inclusions in full thickness acan may exhibit perineural infiltrate of lymphocytes
- Schwann cells hypertrophy & rapid neural necrosis

### Treatment:

Acyclovir

Valacyclovir