# Problems of Protection
## HIV/AIDS

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## HIV vs. AIDS

## Who's at risk

- 75% Men
- 45% African Americans
- 35% Whites
- 17% Hispanics

## HIV Transmission

- Blood
- Semen
- Vaginal Secretions
- Breast Milk

## Transmission vs. Exposure

- Large amounts of virus must enter
- Duration and frequency of contact
- Volume of fluid
- Virulence and concentration of organism
- Host immune status

## Pathophysiology

- CD4
- RNA
- Cellular DNA

## Stages of HIV Infection

- Acute Retroviral Syndrome
- Chronic HIV infection
- Intermediate Chronic Infection
- Late Chronic Infection

## Early Chronic Infection

- Seroconversion
- Asymptomatic phase or
- Acute retroviral syndrome (ARS)

## Intermediate Chronic Infection

- CD4 T-cell count drops below 200-500 cells/mm
- Viral load increases
- HIV advances to a more active stage.

## Late Chronic Infection/AIDS

- CD4 count drops below 200
- Immune system is severely compromised
- Development of opportunistic disease

## Opportunistic Infections

- Candidiasis of bronchi, trachea, esophagus
- Invasive Cervical Cancer
- Coccidioidomycosis (valley fever)
- Cryptococcosis
- Cryptosporidiosis
- Cytomegalovirus
- Encephalopathy

## Opportunistic Infections cont.

- Herpes Simplex
- Histoplasmosis
- Isosporiasis
- Kaposis Sarcomav
- Lymphoma
- Mycobacterium Avium Complex
- Tuberculosis

## Opportunistic Infections cont.

- Pneumocystis Carinii pneumonia
- Pneumonia (recurrent)
- Progressive multifacal leukoencephalopathy
- Salmonella Septicemia (recurrent)
- Toxoplasmosis of the brain
- Wasting Syndrome due to HIV

## Prevention of Opportunistic Infections

- Antiretroviral therapy
- Prophylaxis

## HIV Transmission Prevention Via Sexual Route

- Risky activities
- Safe sex
- Risk –reducing activities
- Condoms
- Barriers
- Activities

## HIV Transmission Prevention via Drug route

- Needle Sharing
- Works
- Altered Judgment

## HIV Transmission Prevention via Blood route

- Contaminated Blood
- Seroconversion
- Work exposure: Needle sticks/splash

## HIV Transmission Prevention via Perinatal routes

- Testing
- Pregnancy
- Delivery
- Infant
- Breastfeeding

## Diagnostic Studies

- Enzyme Immunoassay (EIA) test
- Rapid HIV antibody test
- Western Blot test
- Polymerase Chain reaction test

## Laboratory Studies

- CD4/T-Cell Counts
- Viral Load
- WBC

## Polymerase Chain Reaction Test

- PCR used to test babies
- PCR used to test blood supplies
- PCR used to measure Viral Loads.

## Pharmacological Therapies

- Antiviral drugs: ART/HAART
- When to start
- Adherence
- Prophylactic drugs:

## Pharmacological Classification

- Non-nucleoside Reverse Transcriptase Inhibitors (NNRTI)
- Nucleoside Reverse Transcriptase Inhibitors (NRTI)
- Nucleotide Reverse Transcriptase Inhibitors (N+RTI)
- Protease Inhibitors (PI)

## General Clinical HIV Manifestations

- Psychosocial
- Physical: Hyperlipidemia
  - Hyperglycemia
  - CAD
  - Lactic acidosis
  - Fat Distribution

## Pneumocystic Carinii Pneumonia

- Infection caused by pneumocystis Jiroveci
- 2/3 children have it by 2-4years
- Airborne
- S/S
- Tx. & RN interventions
- Drug interactions

## Cytomegalovirus

- Transmitted from human urine
- Retinits, most common
- Reactivation of latent infection
- S/S
- Tx. & Intervention

## Mycobacterium Avium Complex

- Ubiquitous in the environment
- Transmission via many routes
- S/S
- Tx. & RN interventions
- Drug interactions

## Kaposi's Sarcoma

- Neoplasm caused by HHV8
- Transmission
- S/S
- TX. & RN interventions

## Mycobacterium Tuberculosis

- High risk populations
- S/S
- Tx. & RN interventions
- ART & TB drug interactions

## Toxoplasmosis of the brain

- Toxoplasma Gondii Encephalitis
- Protozoan
- Reactivation of latent infection
- S/S
- Tx. & RN interventions

## Nursing Intervention

- Education
- Health promotion/Illness Prevention
- Lifestyle changes
- Vaccinations
- Therapeutic Management