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HIV/AIDS

The acquired immunodeficiency syndrome (AIDS) was first recognised •
in 1981

HIV infections and acquired immune deficiency syndrome (AIDS)

<i>Occurrence:</i>	Worldwide (high concentrations in Africa and other developing countries) (Plate 36)
<i>Organism:</i>	Human immunodeficiency viruses – different strains of HIV-1, HIV-2
<i>Reservoir:</i>	Humans
<i>Transmission:</i>	Sexual contact, blood transfusion, contaminated needles, perinatal infection
<i>Control:</i>	Education, safe blood supplies, counselling of patients, specific chemotherapy



12.3 Factors increasing the risk of transmission of HIV

Common to all transmission categories

- High viral load

Sexual transmission

- STIs, especially genital ulcers
- Cervical ectopy
- Rectal or vaginal lacerations
- Menstruation
- Uncircumcised male partner
- Receptive anal intercourse
- Depot intramuscular progesterone contraceptive use

Injection drug use transmission

- Sharing equipment
- Linked commercial sex
- Intravenous use
- Concomitant cocaine use
- Incarceration

Occupational transmission

- Deep injury
- Visible blood on device
- Needle was in a blood vessel

Vertical transmission

- Prolonged rupture of membranes
- Older gestational age

(STIs = sexually transmitted infections)

Primary HIV infection Primary infection is symptomatic in more than 50% of cases but the diagnosis is often missed. The incubation period is usually 2–4 weeks after exposure. The duration of symptoms is variable but is seldom longer than 2 weeks. The clinical manifestations resemble those of infectious mononucleosis/glandular fever but the presence of maculopapular rash or mucosal ulceration strongly suggests primary HIV infection •

Acquired immunodeficiency syndrome

AIDS is defined by the development of specified opportunistic •
infections, cancers and severe manifestations of HIV itself.

Asymptomatic infection A prolonged period of clinical latency follows primary infection, during which infected individuals are asymptomatic. Persistent generalised lymphadenopathy with nodes typically < 2 cm diameter is a common finding. Eventually, the lymph nodes regress, with destruction of node architecture as disease advances •

Presenting problems in HIV infection

HIV itself is associated with a wide variety of clinical manifestations, and • opportunistic diseases add many more. All body systems can be affected by HIV. The CD4 count is useful in differential diagnosis: opportunistic diseases that may present at higher CD4 counts become increasingly common as CD4 counts decline, so the CD4 count helps to rule out certain disorders. For example, in a patient with a pulmonary infiltrate and a CD4 count of 350 cells/mm³, pulmonary tuberculosis is a likely diagnosis and PJP is very unlikely, but if the patient's CD4 count is 50 cells/mm³, both PJP and tuberculosis are likely. Globally, tuberculosis is the most common cause of morbidity and mortality in HIV-infected patients. Tuberculosis should be considered in the differential diagnosis of most presenting problems in patients from communities where tuberculosis is common

Common presenting symptoms of HIV

1 weight loss •

2 fever •

3 lymphadenopathy •

Sexual

- Sex education programmes in schools
- Easily accessible voluntary counselling and testing centres
- Promotion of safer sex practices (delaying sexual debut, condom use, fewer sexual partners)
- Effective ART for HIV-infected individuals
- Pre-exposure prophylaxis for high-risk groups
- Male circumcision
- Post-exposure prophylaxis

Parenteral

- Blood product transmission: donor questionnaire, routine screening of donated blood
- Injection drug use: education, needle/syringe exchange, avoidance of 'shooting galleries', methadone maintenance programmes

Perinatal

- Routine 'opt-out' antenatal HIV antibody testing
- Measures to reduce vertical transmission (see text)

Occupational

- Education/training: universal precautions, needlestick injury avoidance
- Post-exposure prophylaxis

diagnosis

LABORATORY DIAGNOSIS

Antibody antigen detection Serological tests are widely used to •
detect antibodies.

ELISA tests are commonly used for screening sera and more specific •
tests (e.g. *Western blot technique*) for confirmation.

Blood cell count : As infection progresses, there is a fall in the blood •
count of the CD4 lymphocytes from the normal level of about 800/mm

Causes of death in HIV patients

Infections common with HIV •

Candidiasis. This is a common fungal infection that's also known as thrush. It can be treated with antifungal medications after a simple visual examination. •

Coccidioidomycosis. This common fungal infection can lead to pneumonia if left untreated. •

Cryptococcosis. This fungal infection often enters through the lungs. It can quickly spread to the brain, often leading to cryptococcal meningitis. Left untreated, this fungal infection is often fatal. •

Cryptosporidiosis. This diarrheal disease often becomes chronic. It's characterized by severe diarrhea and abdominal cramping. •

Cytomegalovirus. This common global virus affects most adults during their lifetime. It often presents with eye or gastrointestinal infections. •

HIV-related encephalopathy. This is often referred to as HIV-related dementia. It can be defined as a degenerative brain condition that affects people with CD4 counts of less than 100. •

Herpes simplex (chronic) and herpes zoster. Herpes simplex produces red, painful sores that appear on the mouth or genital area. Herpes zoster, or shingles, presents with painful blisters on skin surfaces. While there is no cure for either, medications are available to alleviate some symptoms. •

Histoplasmosis. This environmental fungal infection is commonly treated with antibiotics. •

Isosporiasis. This is a parasitic fungus. It develops when people drink or come into contact with contaminated food and water sources. It's currently treated with antiparasitic drugs. •

Mycobacterium avium complex. This is a type of bacterial infection. It often presents in people with severely compromised immune systems (CD4 cell counts of less than 50). If these bacteria enter the bloodstream, it often results in death.

***Pneumocystis carinii* pneumonia (PCP).** This OI is currently the leading cause of death in people living with HIV. Careful monitoring and antibiotic therapies are currently used to treat the person following diagnosis.

Chronic pneumonia. Pneumonia is an infection in one or both lungs. It can be caused by bacteria, viruses, or fungi.

Progressive multifocal leukoencephalopathy (PML). This neurological condition often affects people with CD4 cell counts below 200. While there is no current treatment for this disease, some response has been shown with antiretroviral therapies.

Toxoplasmosis. This parasitic infection commonly strikes people with CD4 cell counts below 200. Prophylaxis treatments are used as a preventive measure for people posting low CD4 cell counts.

Tuberculosis. This disease is most common in low-income areas of the world. It can be successfully treated in most cases if caught early.

Wasting syndrome (HIV-related). This OI causes a total weight loss of more than 10 percent of your normal body weight. Treatment involves dietary management and continued antiretroviral therapy. •

[Kaposi's sarcoma](#). This form of cancer often presents with either oral lesions or lesions covering the skin surfaces. Current treatments include radiation and chemotherapy to shrink the tumors. Antiretroviral therapy is also used to boost the body's CD4 cell count. •

[Lymphoma](#). A variety of cancers frequently present in people living with HIV. Treatment will vary based upon the person's cancer type and health condition. •

[Cervical cancer](#). Women living with HIV are at greater risk of developing cervical cancer. An impaired immune system presents challenges associated with treating this form of cancer. •

i**12.17 Commonly used antiretroviral drugs**

Classes	Drugs
Nucleoside reverse transcriptase inhibitors (NRTIs)	Abacavir, emtricitabine, lamivudine, tenofovir, zidovudine*
Non-nucleoside reverse transcriptase inhibitors (NNRTIs)	Efavirenz*, rilpivirine (only if viral load < 100 000)
Protease inhibitors (PIs)	Atazanavir, darunavir, lopinavir*
Integrase inhibitors	Raltegravir, dolutegravir, elvitegravir
Chemokine receptor inhibitor	Maraviroc
*These drugs are no longer recommended as first-line options in high-income countries due to their toxicity.	

THANKS