

What Is HIV?

- **Human immunodeficiency virus (HIV)** is a type of virus called a retrovirus, which infects the human immune system (the system in the body which is in charge of fighting off illness).
- HIV may cause AIDS (a collection of diseases and symptoms, or problems in the body) by eventually killing the white blood cells, which a healthy body uses to fight off disease.

SOURCE OF INFECTION

High concentration

- Blood
- Semen/Vaginal fluids
(as high as blood)
- Pus from sores
- CSF



Low concentration

- Sweat
- Tears
- Urine
- Saliva
- Breast milk

Where it came from??



- **In 1999 - SIV (Simian Immunodeficiency virus) - chimpanzee - almost identical to HIV**
- **Chimpanzees were the source of HIV-1 - virus - from chimps to humans**
- **More research - how SIV could have developed in the chimps**



Epidemiology

In India first outbreak of dengue was recorded in 1812

A double peak hemorrhagic fever epidemic occurred in India for the first time in Calcutta between July 1963 & March 1964

In New Delhi, outbreaks of dengue fever reported in 1967, 1970, 1982, & 1996

ANALYSIS OF HIV

What Is HIV?

To understand what **HIV** is, let's break it down:

H – *Human* – This particular *virus* can only infect human beings.

I – *Immunodeficiency* – HIV weakens your *immune system* by destroying important cells that fight disease and infection. A "deficient" immune system can't protect you.

V – *Virus* – A virus can only reproduce itself by taking over a cell in the body of its host.

Human Immunodeficiency Virus is a lot like other **Viruses**, but the difference is that, your immune system can clear most viruses out of your body. But can not get rid of HIV. Scientists are still trying to figure out why.

SYMPTOMS

When HIV emerges from latency (the period when someone with HIV shows no signs of it) symptoms can include:

- Dry, flaky skin (Xeroderma)
- Chronic fatigue
- Fever that comes and goes (Pyrexia)
- Diarrhea that lasts more than a week
- Heavy night sweats (Hyperhidrosis)
- Rapid weight loss
- Swollen lymph nodes
- White spots on tongue, mouth & throat



- **Major signs**

- **Weight loss > 10% of body weight**
- **Chronic diarrhoea**
- **Prolonged fever**

- **Minor signs**

- **Persistent cough**
- **Oropharyngeal candidiasis**
- **Generalized lymphadenopathy**



DIAGNOSIS:

Direct tests

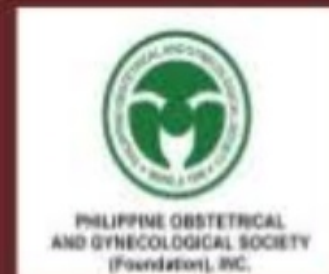
- **ELISA** (enzyme-linked-immunosorbent serologic assay)
- **Viral isolation in culture**
- **Pcr**

Indirect tests

- **CD4 counts**
- **Lymphopenia**
- **Lymphnode biopsy**

TREATMENT:

- **HIV vaccine : preventive measure**
- **Antiretroviral therapy**
- **HIV is treated using a combination of medicines to fight HIV infection.**
- **ART isn't a cure, but it can control the virus**
- **Having less HIV in your body gives your immune system a chance to recover and fight off infections and cancers**
- **By reducing the amount of HIV in your body, HIV medicines also reduce the risk of transmitting the virus to others.**



HIV Screening

Preliminary Counselling Dialogue

Providers of obstetric care should inform the patient that an HIV screening test will be performed as part of the recommended routine antenatal package of tests of infections (HBsAg, RPR/VDRL, rubella IgG, papsmear, urine culture)



I HAVE AIDS
Please hug me



HIV and Pregnancy



- **HIV Perinatal transmission:** During pregnancy, delivery, and breastfeeding
- **Early diagnosis/treatment** for HIV-infected women during pregnancy and continuation of ART after pregnancy
- Women who present in labor with **unknown HIV** status should undergo rapid/expressed **antigen/antibody HIV testing**
- If positive-maternal (IV zidovudine)/infant (combination antiretroviral prophylaxis)
- If negative HIV-RNA test, the maternal and infant ARV drugs should be stopped
- Women with positive initial testing should **not initiate breastfeeding** until HIV infection is definitively ruled out
- Scheduled **cesarean delivery at 38 weeks'** gestation to minimize perinatal transmission:
 - If RNA levels (VL) $>1,000$ copies/mL or unknown HIV levels near the time of delivery
- If HIV -VL $\leq 1,000$ copies/ml, short duration of ruptured membranes- **vaginal delivery**

Pregnant women or in reproductive age – Avoid Sustiva (efavirense-NNRTI)

WHAT IS DENDUE ?

- Dengue is a viral disease
- It is transmitted by the infective bite of female Aedes Aegypti mosquito
- Man develops disease after 5-6 days of being bitten by an infective mosquito
- It occurs in two forms: Dengue Fever and Dengue Haemorrhagic Fever(DHF)
- Dengue Fever is a severe, flu-like illness (Influenza)
- Dengue Haemorrhagic Fever (DHF) is a more severe form of disease, which may cause death
- Person suspected of having dengue fever or DHF must see a doctor at once

Traditional and emerging treatments

- Emerging evidence suggests that mycophenolic acid and ribavirin inhibit dengue replication.
- Brazilian traditional medicine, -cat's claw herb
- Malaysia, -natural medicine. Mas Amirtha and Semalu
- Philippines -tawa-tawa herbs and sweet potato tops juice

SYMPTOMS AND TREATMENT

- Dengue clinical symptoms include high fever, severe headache, with or without rash, and possible bleeding complications.
- The fever can progress to dengue hemorrhagic fever, which can lead to dengue shock syndrome and in rare cases death.
- Severe dengue is a rare event (0.5% of reported cases) and can occur at any infection with one of the four virus subtypes; however, the second infection with dengue is more often associated with worse illness compared to the other infections with the virus.
- There is no specific medication for treatment of a dengue infection.



SIGNS & SYMPTOMS OF DENGUE FEVER

- Abrupt onset of high fever
- Severe frontal headache
- Pain behind the eyes which worsens with eye movement
- Muscle and joint pains
- Loss of sense of taste and appetite
- Measles-like rash over chest and upper limbs
- Nausea and vomiting

Prevention

Personal:

- clothing to reduce exposed skin
- insect repellent especially in early morning, late afternoon. Bed netting important
- mosquito repellants(pyrethroid based)
- coils, sanitation measures

Environmental:

- reduced vector breeding sites
- solid waste management
- public education
- empty water containers and cut weed/tall grass

Treatment

Treatment with corticosteroids shown not to reduce mortality with severe dengue shock

2 studies of 63 and 92 pediatric DHF shock pts treated w/ hydrocortisone 50mg/kg x1 or methylprednisolone 30mg/kg x1 dose vs placebo.

Study of 95 pediatric DHF shock pts treated with carbazochrome sodium sulfate (AC-17) vs B vitamins for 3 days

Ribavirin very weak in vitro and in vivo activity against flaviviruses

Vaccination

No current dengue vaccine

Estimated availability in 5-10 years

Vaccine development is problematic as the vaccine must provide immunity to all 4 serotypes

Lack of dengue animal model

Live attenuated tetravalent vaccines under phase 2 trials

New approaches include infectious clone DNA and naked DNA vaccines