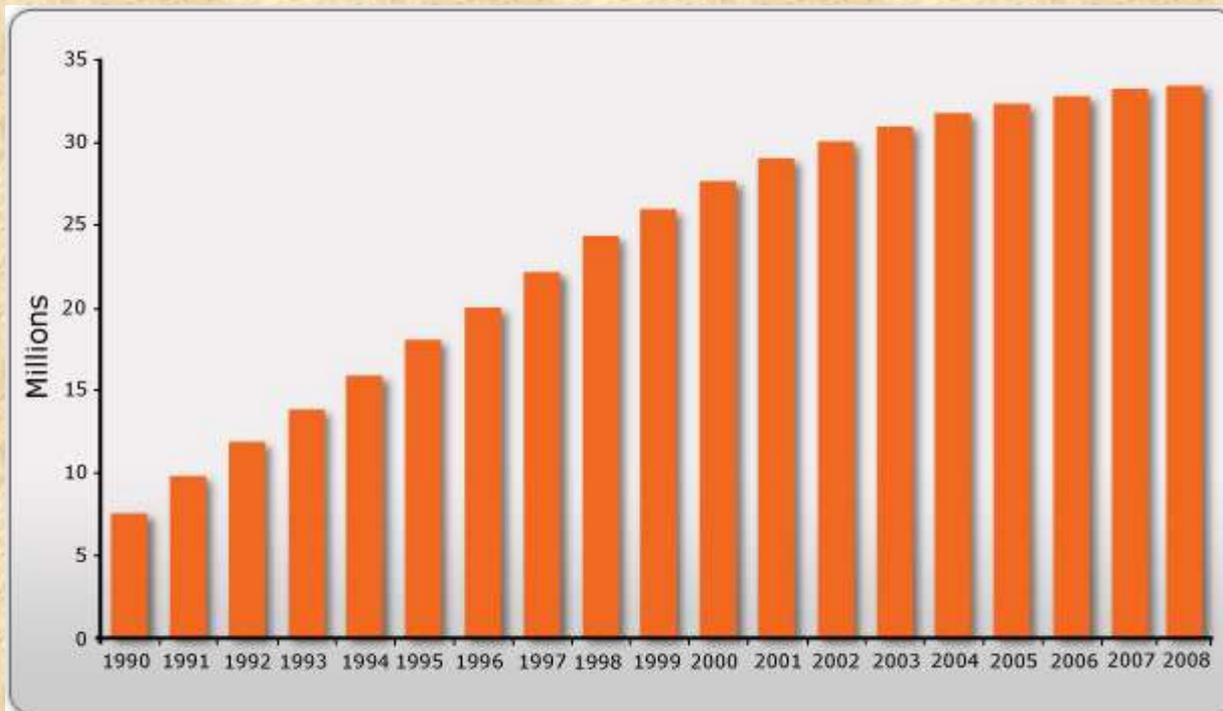

SEMINAR ON HIV/AIDS



DEFINITIONS

INCIDENCE



GLOBAL:

Global HIV/AIDS Estimates, End Of 2008:

People living with HIV/AIDS in 2008	33.4 million	31.1-35.8 million
Adults living with HIV/AIDS in 2008	31.3 million	29.2-33.7 million
Women living with HIV/AIDS in 2008	15.7 million	14.2-17.2 million
Children living with HIV/AIDS in 2008	2.1 million	1.2-2.9 million

People newly infected with HIV in 2008	2.7 million	2.4-3.0 million
Children newly infected with HIV in 2008	0.43 million	0.24-0.61 million
AIDS deaths in 2008	2.0 million	1.7-2.4 million
Child AIDS deaths in 2008	0.28 million	0.15-0.41 million

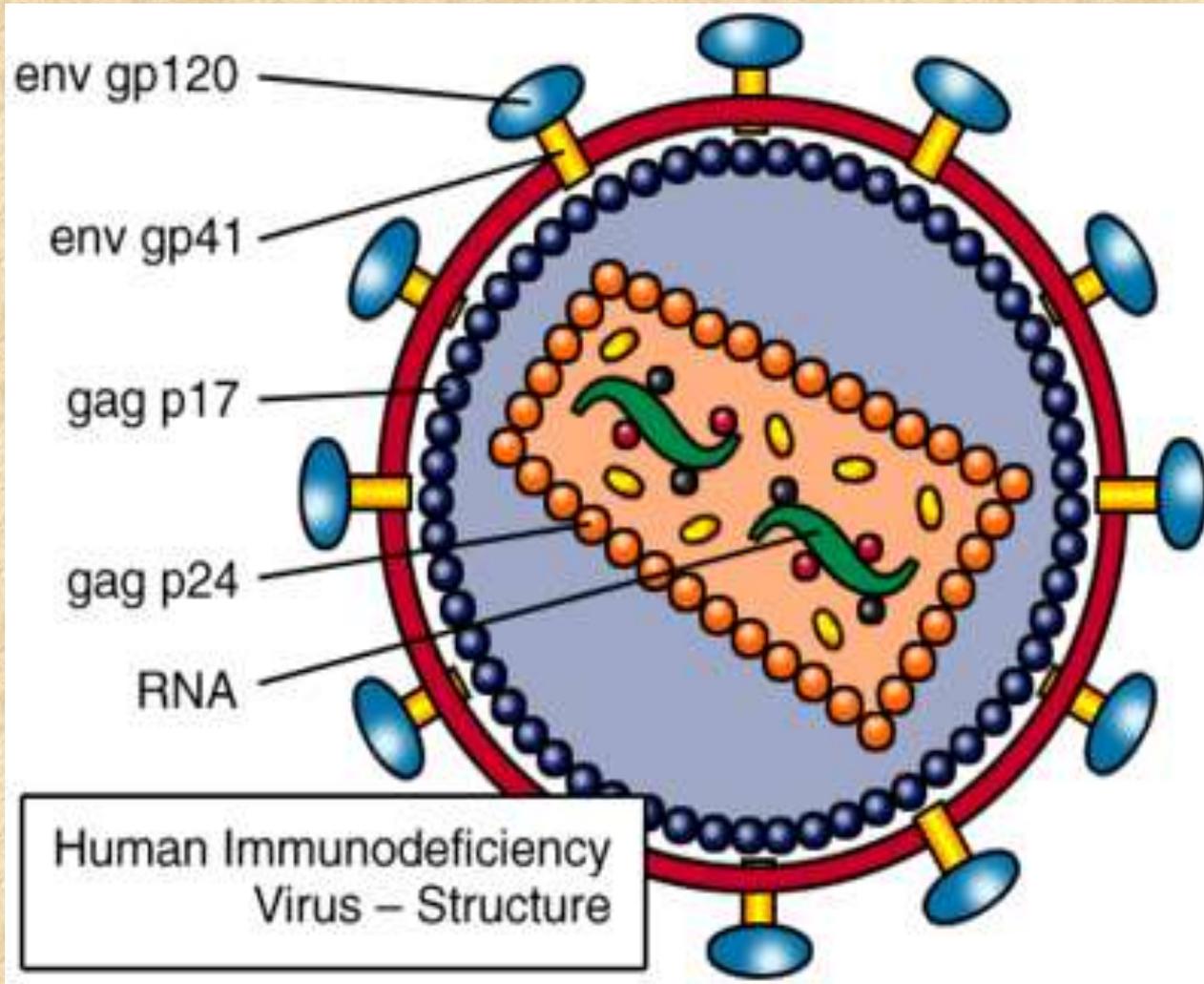
INDIA:

People living with HIV/AIDS (2009)	2.47 million
Adult (15 years or above) HIV prevalence (2008)	34%
HIV positive women (2008)	39.3%
HIV positive pregnant women (2008)	19,986 (out of 4.1million tested)
HIV positive children (2009)	52,973

ANDHRA PRADESH:

People living with HIV/AIDS (2009)	5 lakh
HIV positive children (2009)	5,712

EPIDEMIOLOGY:



➤ **RESERVOIR OF INFECTION**

➤ **SOURCE OF INFECTION:**

The source of infections is the:

- Infected blood
- Semen
- CSF

➤ **Lower Concentrations Have Been Detected In:**

- ❖ Breast milk
- ❖ Saliva
- ❖ Tears
- ❖ Urine
- ❖ Cervical and vaginal secretions

➤ The most important sources
are:

- Blood
- Semen

➤ MODE OF TRANSMISSION:

- ❑ Vertical transmission (90%) from infected mother to fetus or from infected mother to child.
- ❑ Transmission may occur in uterus (30-35%),
- ❑ During delivery (60-65%),
- ❑ Through breastfeeding (1-3%).
- ❑ Horizontal transmission occurs for only 10 to 15 percent cases of HIV/AIDS in children.

❖ Children may get infection other than perinatal transmission through:

- ❑ Blood and blood products
- ❑ Organ transplantation
- ❑ Contaminated needle prick
- ❑ Use of contaminated instruments during surgical procedures
- ❑ Any skin piercing instruments during ear piercing, tattooing, acupuncture and circumcision.

HIV is not transmitted by:

- Food
- Water
- Mosquito bites
- Casual contact like social kissing, hand shaking, hugging, sharing feeding articles
- Using public toilets etc.

➤ INCUBATION PERIOD:

- ❑ It may vary from few months to 6 years or more to develop AIDS from HIV infection.

RISK FACTORS:

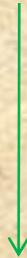
The risk factors of pediatric HIV/AIDS include:

- ❖ Mother using IV drugs
- ❖ Indulging in promiscuous sexual behavior
- ❖ Having heterosexual or bisexual sex partners
- ❖ History of blood and blood products transfusion in case of thalassemia and hemophilia
- ❖ Neonates born to mothers with risk factors can be infected with HIV/AIDS.

PATHOPHYSIOLOGY



✘ HIV infection is primarily the immune system disorder with depletion of CD4⁺ helper 'T' lymphocytes.



✘ When the virus multiplies, the infected T helper cells are destroyed. Depletion of CD4⁺ lymphocytes in blood and lymphocytes are the important characteristics of AIDS.



✘ There is reversal of helper/suppressor T cell ratio which tends to persist.



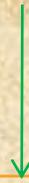
✘ As the disease progress, the functional abnormalities of T cells may result as abnormal response of lymphocytes to antigens, mitogens and allogeneic cells and failure to produce normal amount of interleukin-2, interferon and other lymphokines.



✘ T cell leads to defect in B cell activity resulting polyclonal hypergammaglobulinemia (raised IgA, IgG, and IgM) leads to failure to form antibody to antigens



✘ There is disturbance of complement and phagocytic activity along with widespread lymphoid infiltration.



- ✘ Initially, after 1 to 3 weeks of infection, there is viremia and in long term, there is steady decline in the number of CD4⁺ cells.

decline of CD4⁺ cells



- ✘ Opportunistic infections usually occur when CD4⁺ cells fall below approximately 200 to 400/ml. death may occur due to infections, neoplasms and cachexia.

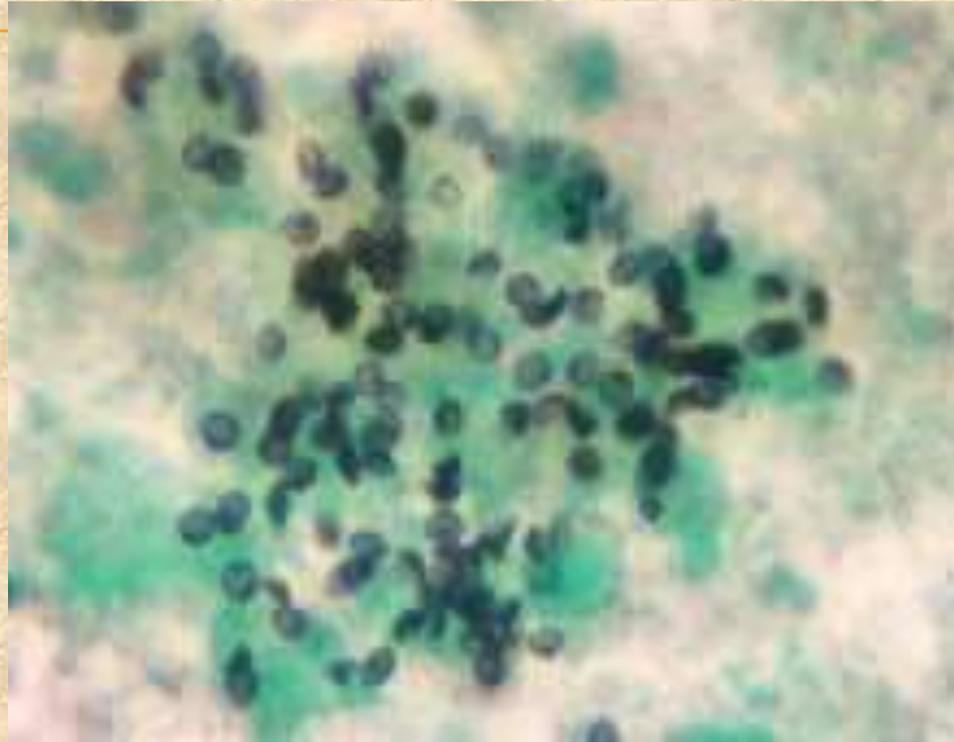
CLINICAL MANIFESTATIONS



The infants born to mothers with risk factor HIV infected may present with:

- ❑ Low birth weight
- ❑ Failure to thrive
- ❑ Microcephaly
- ❑ Hepatosplenomegaly
- ❑ Lymphadenopathy
- ❑ Pneumocystic carinii pneumonia
- ❑ Recurrent otitis media

- ❑ Chronic sinopulmonary infection
- ❑ Oral thrush
- ❑ Chronic diarrhea
- ❑ Chronic parotid swelling
- ❑ Unexplained anemia
- ❑ Thrombocytopenia
- ❑ Recurrent infection
- ❑ Cardiac or kidney disease
- ❑ Kaposi sarcoma is uncommon in childhood AIDS.



Pneumocystis carinii jirovecii cysts from bronchoalveolar lavage



KAPOSI SARCOMA



Intraoral Kaposi's sarcoma lesion with an overlying candidiasis infection

Transfusion associated AIDS in children may present:

- ❖ Pneumocystic carinii pneumonia
- ❖ Kaposi sarcoma
- ❖ Chronic lymphadenopathy with recurrent pyrexia
- ❖ Night sweats
- ❖ Weight loss
- ❖ Chronic diarrhea
- ❖ Hepatosplenomegaly
- ❖ Other viral infections (E-B virus, hepatitis 'B' virus).

WHO CRITERIA FOR DIAGNOSIS OF PEDIATRIC AIDS

Major criteria:

- ✘ Weight loss or abnormally slow growth
- ✘ Chronic diarrhea for over one month
- ✘ Prolonged or intermittent pyrexia for over one month

Minor criteria:

- ✘ Generalized lymphadenopathy
- ✘ Oropharyngeal candidiasis
- ✘ Recurrent common bacterial infections
- ✘ Persistent cough for over one month
- ✘ Generalized dermatitis
- ✘ Confirmed HIV infection in the mother

Clinical staging

Stage 1:

- ✘ Asymptomatic
- ✘ Persistent generalized lymphadenopathy

Stage 2:

- ✘ Unexplained chronic diarrhea
- ✘ Severe persistent or chronic candidiasis outside the neonatal period
- ✘ Weight loss or Failure to thrive
- ✘ Persistent fever
- ✘ Recurrent severe bacterial infections

Stage 3:

- ✘ AIDS defining opportunistic infections
- ✘ Severe failure to thrive
- ✘ Progressive encephalopathy
- ✘ Malignancy
- ✘ Recurrent septicemia or meningitis

LABORATORY INVESTIGATIONS



HIV DIAGNOSIS IN CHILDREN < 18 MONTHS:

- ✘ HIV DNA PCR at 6 weeks and 6 months (where available). HIV antibody testing at 12 and 18 months.

HIV DIAGNOSIS IN CHILDREN > 18 MONTHS:

1. ELISA test (Enzyme- Linked Immuno Sorbent Assay test) is done for screening test for anti- HIV IgG detection.
2. Western blot test is performed as a confirmatory test.
3. CD4 count

4. T cell ratio and T cells growth factors.
5. HIV culture and HIV antigen test.
6. HIV specific PCR (Polymerase chain reaction) to detect viral nucleic acid.
7. TLC, DLC, platelet count.
8. Qualitative measurement of immunoglobulin levels and circulating immunocomplex testing.

MANAGEMENT



• SPECIFIC THERAPY:

Anti- retroviral agents



•REDUCTION OF VERTICAL TRANSMISSION:

The recommended methods to reduce vertical transmission are:

- Elective caesarean section
- Antiretroviral therapy
- Avoidance of breast feeding

When pregnant women presents during pregnancy, she should be given ART as follows (to prevent MTCT):

✘ **Antepartum** –

Oral AZT 300mg BD from 28weeks gestation or as soon as feasible.

✘ **Intrapartum-**

AZT continues as 300mg at onset of labor and 300mg every 3hrly till labor. Also 3TC 150mg every 12hrly till labor. Also single dose NVP 200mg at onset of labor.

× **Postpartum-**

Oral AZT 300mg BD and 3TC 150mg BD for 7days.

× **For the baby –**

NVP single dose 2mg/kg within 72hours of birth and oral AZT 2mg/kg 4imes a day for 7days.

- ***PREVENTION OF PCP (PNEUMOCYSTIC CARINII PNEUMONIA)***
- ***NUTRITION***
- ***OTHER INFECTIONS:***
- ***IMMUNIZATION***
- ***COUNSELING AND SUPPORT***
- ***PSYCHOSOCIAL ISSUES***

FUTURE PROSPECTS

× Gene Therapy

× HIV Vaccine

NURSING MANAGEMENT:



NURSING DIAGNOSIS:

1. Risk for infection related to impaired body defenses, presence of infective organisms.
2. Imbalanced nutrition less than body requirements related to recurrent illness, diarrheal losses, loss of appetite, oral candidiasis.
3. Pain related to advanced HIV diseases.
4. Altered body temperature, more than normal related to HIV infection and secondary infections.

5. Impaired social interaction related to physical limitations, hospitalizations, social stigma towards HIV.
6. Interrupted family processes related to having a child with a dreaded and life-threatening disease.
- 7) Fear and anxiety related to chronic fatal illness of the child.
- 8) Knowledge deficit regarding transmission of HIV infection, care at home and available social support.

PREVENTION OF HIV/AIDS



Four basic approaches to the control of HIV/AIDS include:

1. Prevention by health education to make life – saving choices and avoiding blood-borne HIV transmission,
2. Antiretroviral treatment with combination therapy or post exposure prophylaxis,
3. Specific prophylaxis for HIV manifestations e.g.: Isoniazid for tuberculosis and
4. Primary health care approached with integrated care in MCH, FP and health education.

Measures include:

- ❖ Parent to child transmission can be prevented by avoiding indiscriminate sexual practices of adults and use of condom.
- ❖ Meticulous screening of blood and blood products, avoidance of commercial blood donation, promotion of voluntary blood donors, screening before organ transplant will help to prevent blood route transmission.

Other preventive measures include:

- Sterilization of syringe and needle for injections or immunization.
- Maintenance of aseptic techniques during delivery and in surgical or dental interventions.
- Precautions for exposure to body fluids.
- Motivation to avoid IV drug abuse.
- Unsafe sex among adolescents.
- Creating awareness among traditional practitioners (barber, tattoo maker, quacks) about avoidance of spread of HIV infection.
- Promoting community awareness about transmission of HIV infection by unsafe practices i.e., ear piercing, circumcision etc.

- ❑ Vertical transmission can be prevented by Zidovudine prophylaxis to the infected pregnant women and to the infants till 6 weeks of life, born to the infected mother.
- ❑ Post-exposure prophylactic (PEP) treatment can be given with antiretroviral drugs (AZT monotherapy) for 4 weeks within hours following accidental exposure to the virus by needle stick injury.
- ❑ HIV positive women should be informed and explained about the possibilities of the infection of the future offspring.

IMMUNIZATION OF HIV POSITIVE CHILDREN



SUMMARY

CONCLUSION

RESEARCH STUDIES