



LESSON OBJECTIVES :

To have an understanding of the magnitude of the problem of Paediatric AIDS

Problems and challenges related to Paediatric HIV/AIDS

INTRODUCTION

HIV is the greatest health crisis the world faces today.

Estimated 40million people living with HIV

2.7 million children under 15 years are estimated to be infected with HIV

Aetiology

Caused by the Human Immunodeficiency virus

Types I and II

Type I - Worldwide

Type II - Common in West African

Transmission

Majority (90%) infected children acquire the infection through MTCT (maternal tract and other maternal causes like breast feeding)

This occurs during pregnancy, delivery and breastfeeding

In absence of any intervention, the risk of MTCT is 15 – 30% in non breast feeding populations

Breastfeeding increases the risk by 5 – 20% to a total of 20 – 45%.

Other Means of Transmission

1. Blood transfusions, blood products and organ/tissue transplants
2. Contaminated needles

Factors Affecting MTCT

(Maternal)

High maternal HIV RNA level

Low maternal CD4+ T-lymphocyte count

Chorioamnionitis

Maternal vitamin A deficiency and malnutrition

Co existing sexually transmitted disease

Urea of antiretroviral therapy

Clinical states of mother

Interpartum hemorrhage

Vaginal delivery

Artificial rupture of membranes

Rapture of membranes >4hours

Fetal scalp monitoring

Episiotomy

Transmission Through Breastfeeding

Risk is 14% if sero conversion occurs before birth

Risk is 29% if during breastfeeding

Highest in the first 6 months of life but continues throughout breastfeeding

Transmission risk increased by

Seroconversion during breastfeeding

Mastitis/breast abscess

Bleeding nipples

High plasma viral load

Oral thrush in baby

Mixed feeding (including breast milk)

Prevention of MTCT

In 1997, a joint WHO, UNAIDS, and UNICEF policy

Statement called for giving women access to

voluntary counseling and testing and information to

allow them make informed decisions regarding infant feeding.

2001 – (WHO) If a woman has tested positive when replacement feeding is affordable, feasible, acceptable, sustainable and safe (AFASS) avoidance of breastfeeding is recommended

Otherwise, exclusive breastfeeding is recommended. It should be short with abrupt cessation

Mixed feeding is discouraged as it promotes transmission

Prevention of MTCT :

Pregnant women who need ARV treatment should receive it in accordance with WHO guidelines

HIV – infected pregnant women who do not have indication for ARV treatment or do not have access to treatment should be offered ARV prophylaxis to prevent MTCT using one of the several regimens known to be safe

ZDV from 28wks of pregnancy + single dose NVP during labour and single dose NVP and one week ZDV for infant.

Nevirapine tab 200mg given to the mother during labour and the syrup 2mg/kg given to baby within 72 hours of life reduces transmission by half

CLINICAL FEATURES

CNS – microcephaly

- progressive neurological deterioration

or spastic encephalopathy

- developmental delay/regression
- predisposition to CNS infections

Respiratory System

- Recurrent infections (pneumonia, sinusitis, otitis media)
- Tuberculosis
- Pneumocystis carinii pneumonia or lymphoid interstitial pneumonitis

CVS – cardiomyopathy with congestive cardiac failure

GIT-

- AIDS enteropathy (malabsorption, infections with various pathogens) leads to chronic diarrhoea resulting in failure to thrive
- Abdominal pains, dysphagia, chronic hepatitis or pancreatitis

Renal – AIDS nephropathy: the most common presentation being nephrotic syndrome

Skin – Eczema, seborrheic dermatitis, candida infections, molluscum contagiosum, anogenital warts

Opportunistic infections

pneumocystis carinii pneumonia

Cryptosporidium

Epstein Barr Virus

- Measles
- Cryptococcus meningitis

Toxoplasmosis

Malignancy

Non Hodgkin's Lymphoma

Primary CNS lymphoma

Kaposi sarcoma

WHO CLINICAL CASE DEFINITION OF PAEDIATRIC AIDS

2 major + 2 minor Criteria

MAJOR

Weight loss or failure to thrive

Chronic diarrhoea > 1 month}

Prolonged fever > 1 month } Major

CDC Immunologic categories based on CD4+ and % Total lymphocyte counts

MINOR SIGNS

Generalised lymphadenopathy •

Oropharyngeal candidiasis •

Recurrent common infections •

Generalised dermatitis •

Recurrent invasive bacterial infection •

Confirmed maternal HIV infection •

Diagnosis of HIV Infection

Diagnosis of HIV infected children over 18months can be made by antibody test (ELISA and confirmatory tests)

Specific diagnosis in children less than

15 -18months can be made by virologic tests

HIV DNA polymerase chain reaction (PCR)

HIV RNA Assay

Standard and immune complex dissociated p24 antigen

Viral culture

TREATMENT MODALITIES

Antiretroviral Therapy

Goal is to maximally suppress viral replication to on detectable levels for as long as possible

The antiretroviral drugs fall under 4 major categories

Nucleoside reverse transcriptase inhibitors (NRTIs)

Zidovudine (ZDV)

Non-nucleoside RTIs, Nevirapine, Efavirenz

Protease inhibitors: Nelfinavir, Ritonavir

Fusion inhibitors: Enfuvirtide

When to initiate ARV

All HIV infected children less than 12 months

Clinical AIDS

Mild to moderate clinical symptoms

Mild to moderate immunosuppression

HIV infection is absent : •

if there are 2 or more negative viral tests between the age 1 month and 6 months •

HIV infection is present if there are 2 positive viral tests on 2 separate blood samples regardless of age •

In the absence of virologic tests

2 or more negative antibody tests performed by the age of over 6 months with an interval of at least 1 month between tests reasonably excludes HIV infection in exposed children ▪

A reactive HIV antibody test at >18 months followed by a positive confirmatory test definitely indicates HIV infection. ▪

Immunization

All HIV-exposed infants should be fully immunized

Infected and symptomatic infants should receive all vaccines including measles and hepatitis B but not BCG or Yellow fever vaccine

Infected and symptomatic children should receive IPV instead of OPV

Outcome Patterns

15-25% : rapid course median survival 6-9mo if untreated

60-80%: median survival 6yrs

<5% : long-term survivors with minimal or no progression,
low viral loads for > 8yrs