

PREGNANCY AND HIV



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Aspects of HIV in pregnancy

Aspects

- Primary prevention of HIV infections of parents to be and during lactation.
 - Prevention of unwanted pregnancies.
 - Prevention of viral transmission from mother to child as part of antenatal care and during lactation.
 - Prevention of reinfection with HIV in a woman who is already HIV positive.
 - Treatment of sexually transmitted infections.
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Routes vertical transmission

In utero (high risk period)

- Transplacental passage in utero
- Invasive procedures done during pregnancy
- Infections such as chorioamnionitis

During delivery

- Ascending infection
- Breaks in the skin of the baby and thus the direct exposure to infected blood
- Ingesting maternal blood

Postpartum

- Breast milk, depends on the presence and duration of breastfeeding.
- 30-40% of HIV transmissions in developing countries are through breast feeding.

Factors associated with increased risk

- High maternal viral load
 - Viral characteristics
 - Advanced disease
 - Immune deficiency
 - Maternal seroconversion during pregnancy
 - Maternal HIV infection acquired during breastfeeding or during pregnancy
 - Poor adherence to antiretroviral therapy
 - Being breastfed
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Factors associated with increased risk

- Prematurity
 - Breastfeeding
 - Procedures that increase exposure of infant to maternal blood
 - Prolonged rupture of membranes
 - Mastitis in breastfeeding women
 - Thrush or oral ulceration of a baby
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Proven effective interventions

- Antiretroviral therapy
- Universal precautions at delivery
- Delay rupture of membranes

Counselling pregnant women

All pregnant women attending antenatal clinics should

- Be given information on HIV and other sexually transmitted diseases.
- Be offered on site HIV testing with pre- and post-test counselling.
- Information on how to take care of a newborn.

Assess the HIV pregnant woman for

Factors to assess

- gestational age and obstetric risk factors
 - risky sexual behaviour
 - STDs
 - support structures (family, NGOs, church)
 - history of current or previous antiretroviral therapy
 - nutrition history
 - signs and symptoms of opportunistic infections
 - the degree of immunodeficiency (CD4 count)
 - risk for disease progression (viral load)
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Counselling

- Behavioural changes in relation to substance abuse
- Safe sexual practices including avoiding unprotected sex with multiple partners during pregnancy
- Common pregnancy complications in HIV infected woman
 - urinary tract infections
 - chest infections
 - infected episiotomy
 - postpartum sepsis
 - caesarean wound sepsis

Counselling

- Nutrition
 - Feeding methods available to her infant and the risks involved.
 - Woman should be given an opportunity to make an informed choice.
- Education about family planning and available contraception.

Invasive procedures

Avoid!!

- Amniocentesis
- Chorion villus sampling
- Cordocentesis
- External cephalic manoeuvring

All of above may increase the risk of mother to child transmission.

Prophylaxis HIV positive infected woman

- Haematinics – iron and folate
 - Multivitamins
 - Tetanus toxoid
 - TB prophylaxis: Isoniazid 300mg/day *plus* pyridoxine 50mg/day
 - PCP: co-trimoxazole 960mg/day
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Maternal follow-up visits

- Visit schedule
 - Once a month until 28 weeks of pregnancy
 - Thereafter every fortnight until 34-36 weeks
 - Subsequently weekly until delivery.
 - At each follow-up visit assess for
 - opportunistic infections
 - foetal growth monitoring
 - screen for STIs
 - check urine for asymptomatic bacteruria.
 - Institute appropriate management if complications arise.
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Foetal monitoring

- An ultrasound is indicated in uncomplicated pregnancies with a baseline scan at 20 weeks of pregnancy.
 - Should the pregnancy be terminated an earlier scan may be needed to determine gestation.
 - Preterm delivery and low birth weight are common in HIV positive pregnant women.
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Intrapartum

- No current indication for routine Caesarean section. C/section may be considered for standard obstetric indications. The midwife/obstetrician should adhere to universal precautions.
- Avoid artificial rupture of membranes
- Avoid prolonged rupture of membranes
- Use a partogram
- Invasive scalp electrode monitoring and blood sampling should be avoided as this increase the risk of transmission.
- Avoid episiotomy except when there is a strong obstetric indication.

Intrapartum

- Washing of the birth canal with chlorhexidine in water at each vaginal examination in labour
 - may reduce MTCT in women with membranes ruptured more than 4 hours and
 - will reduce the risk of puerperal sepsis to the mother.
- Antibiotic cover should be given for women with rupture of membranes for more than 4 hours.
- Avoid foetal trauma at delivery
 - assisted delivery (except for strong obstetric indication)
 - vigorous suctioning newborn

Postpartum

- Comprehensive care and support services within family and community context.
 - The mother should be supported and assisted to provide the infant feeding option decided upon in the ANC.
 - Family planning should be discussed again before discharge.
 - Health care workers should be aware of the common postnatal infections – urinary tract infections, chest infections, infected episiotomy, postpartum sepsis and caesarean wound sepsis.
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Postpartum

- Education about breast and perineal care and disposal of soiled infected sanitary material.
- The mother needs to be re-evaluated in the post partum period and referred for HAART if qualifies.
- Pap smear is done at 6 weeks postpartum.

General principals ART in pregnancy

- Although drug here is increasing experience with the use of ARV, safety data is not complete. Does not mean we shouldn't use it.
 - Recommendations for the use of ARV in pregnancy should be considered against potential short and long-term effects of the ARV drug therapy on the foetus and infant.
 - Informed decision by woman after getting all the info.
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General principals ART in pregnancy

- First trimester organogenesis
 - Potential for teratogenicity, mutagenicity and carcinogenicity
 - Placental passage
 - Adverse effects
 - Anaemia
 - Vomiting
 - Protease inhibitors and hyperglycemia.
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Big question

When all the information is available the following question need to be asked:

Does the pregnant woman need antiretroviral drugs because her immune system is compromised, or does she only need antiretrovirals during pregnancy for MTCT prevention, because her immune system is still “coping”?

Optimal ART in pregnancy

- Use optimal ARV for the individual woman in her specific circumstances.
- Optimal ARV may vary considerably, from triple drug combinations in pregnancy to single nevirapine dosage to the mother and baby.
- It depends on the human resources and infrastructure available.
- Guidelines change as new information come to light and infrastructure is strengthened.
- Women who are in the first trimester of pregnancy should consider delaying initiation of ARV therapy until after 10-12 weeks of gestation.

Drug monitoring

Drugs contraindicated in pregnancy

- Efavirenz for congenital abnormality.

Monitor for side effect of ARVs

- Stavudine for lactic acidosis.
- Didanosine for lactic acidosis
- Nevirapine for liver toxicity
- Zidovudine for anaemia

HIV positive pregnant women ARV naïve, CD4 count is below 200

She is eligible for ARVs. Question: Is there an ART site operational nearby?

- If Yes: refer ASAP to start ARV, but before 34 weeks. Start Stavudine, lamivudine, nevirapine
- If No: MTCT programme
 - Mother takes a 200mg nevirapine pill when she goes into labour.
 - Nevirapine syrup (2mg/kg) is administered by the healthcare workers to the baby within 72 hours of delivery.

Modified formula feeding through MTCT programme. – both formula and breastfeeding are offered – exclusivity is emphasised.

HIV positive pregnant women ARV naïve, CD4 count is above 200

Several effective ARV regimens are available. New WHO MTCT Guidelines include:

- Single dose of nevirapine (200mg orally) at onset of labour
plus

single dose of nevirapine (2mg/kg orally) for the infant within 72 hours of delivery.

Transmission rate 5-10%.

- In future, extended and multiple drug regimens may become the standard of care in the public sector.

HIV positive pregnant women ARV naïve, CD4 count is above 200

- Zidovudine in women starting at 28 weeks
 - plus*
 - intrapartum intravenous zidovudine in women (1mg/kg/h IV constant infusion)
 - plus*
 - 1 week of zidovudine for the infant (0.4ml/kg bd)
 - plus*
 - single dose nevirapine (2 mg/kg)
 - Zidovudine in women starting at 28 weeks (or as soon as possible thereafter), continue in labour and 1 week postpartum
 - plus*
 - 1 week zidovudine + lamivudine in infants.
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HIV-infected women already on ARVs during the current pregnancy

- If pregnancy is identified after the first trimester, continue with the ARV therapy.
- Pregnancy discovered during the first trimester, counsel and review continuation of ARV.
- If ARV stopped during the first trimester, it must simultaneously be stopped and reintroduced to avoid drug resistance.
- It is not recommended that ARV be stopped, rather any teratogenic drug should be replaced by a more appropriate drug. In situations where an alternative drug is not available, the woman should be counseled on the possible effects of the drug on the unborn baby, and all options available to her including termination of pregnancy should be discussed.

Women with unknown HIV status in labour

- All women should be offered HIV testing already in the antenatal clinic. It should be the exception rather than the rule to counsel and test pregnant women in labour for HIV.
 - It is recommended that counseling and testing can be offered in early labour.
 - Counselling and testing should be deferred until post delivery in women with advanced labour.
 - Women testing HIV positive should be offered nevirapine followed by single dose nevirapine to the baby.
 - The woman should also have access to assessment of her CD4 count and viral load to determine her health status and whether ARVs are indicated.
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Infants born to HIV mothers who have received no ARV during pregnancy or intrapartum

- Single dose Nevirapine should be given to the baby ASAP after delivery.
 - Alternatively the six week neonatal zidodvudine component (0.4ml/kg bd) of the prophylaxis regimen can be discussed and offered to the mother of the newborn infant. The regimen should be initiated ASAP, preferable 12-24 hours after birth.
 - The woman should also have access to assessment of her CD4+ count and viral load to determine her health status and whether ARV therapy is indicated.
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TB in HIV positive pregnant women

The outcome of pregnancy is not altered in pregnant women on anti-tuberculosis drugs.

Maternal TB and HIV co-infection increases the risk of the baby acquiring congenital TB infection.

TB in HIV positive pregnant women

- Diagnosis
- Suspect it
- Investigate

More extrapulmonary TB

TB treatment in HIV positive pregnant women

The use of anti-TB drugs and antiretrovirals in pregnancy is complicated by the drug-drug interactions between these two groups of drugs as well as their potential teratogenicity.

TB treatment takes priority over ARV therapy, and should never be compromised. If a patient is diagnosed with TB, they must be started immediately on treatment. Rather delay or replace ARV therapy if there are drug interactions, and not the TB treatment

TB treatment in HIV positive pregnant women

- Efavirenz is contraindicated in pregnancy, especially during the first trimester, because of its potential for birth defects of the CNS. However, if there is no other alternative drug available, Efavirenz should only be used after the first trimester.
 - Streptomycin is contraindicated in pregnancy because it can cause permanent deafness to the baby.
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TB treatment in HIV positive pregnant women

- Nevirapine and Rifampicin should not be used together, because rifampicin is a potent inducer of liver enzymes and lowers the nevirapine blood levels. Dose adjustments for coadministration have not yet been established.
- Concern about the hepatotoxicity of both the Nevirapine and anti-TB drugs when used together. Nevirapine, therefore, is not used in patients receiving a rifampicin-based anti-TB regimen.

TB treatment in HIV positive pregnant women

- TB treatment with DOTS should be initiated immediately in a pregnant woman diagnosed with active TB, irrespective of whether she is on antiretrovirals or not.
- The WHO recommended first line regimen for a pregnant woman receiving both anti-TB drugs and antiretroviral is stavudine, 3TC and Saquinavir.
- Saquinavir 400mg bd *plus* Ritonavir 400mg bd
Or
- Kaletra (133.3/33 mg) 3 bd *plus* Lopinavir 100mg 3 bd
= lopinavir/ritonavir 400/400

Co-trimxazole prophylaxis neonate

To prevent *Pneumocystis carinii* pneumonia, all infants born to HIV-infected women should receive prophylaxis from 6 weeks of age, until their HIV status is determined by HIV Elisa or HIV PCR testing.

Breast feeding

For many years health care workers strove to promote breast-feeding. This was however before the reality of the HIV/AIDS pandemic.

The additional risk of vertical transmission through breastfeeding is +/- 14%, with a higher risk of transmission with increased duration of, or prolonged exposure, to breast-feeding.

Women should be counselled on infant feeding, choices, risks and benefits to be able to make an informed choice.

Breast feeding

It is of the ultimate importance that women receive ongoing counselling and support whatever their feeding choice may be.

Women will ultimately make a choice depending on

- their personal circumstances
- including elders and partners
- fear of stigmatisation
- social circumstances
- finances.

Pregnancy

You can help a mother
and a baby all in one!!!