

HIV in Pregnancy

19 August 2021

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Intro

- HIV has been a global health issue for more than 20 years now
- Sub-Saharan Africa with the highest prevalence
- Africa also has poor maternal and perinatal outcomes
- HIV has contributed to the worsened outcomes
- However PMTCT/EMTCT interventions seem to be turning the tide.

Where we come from...

- No PMTCT interventions till 2001
- sdNVP initially, guideline change to AZT from 14/42-2008
- Lifelong triple therapy for life for those whose CD4 count <350
- Pregnant mothers with CD4 >350 were allowed to discontinue ARVs after delivery and breastfeeding
- Breastfeeding always been a controversial issue
- 2013- FDC(TEE) and same day initiation & life-long treatment for all
- 2015 we changed from PMTCT to EMTCT

4 pillars of PMTCT

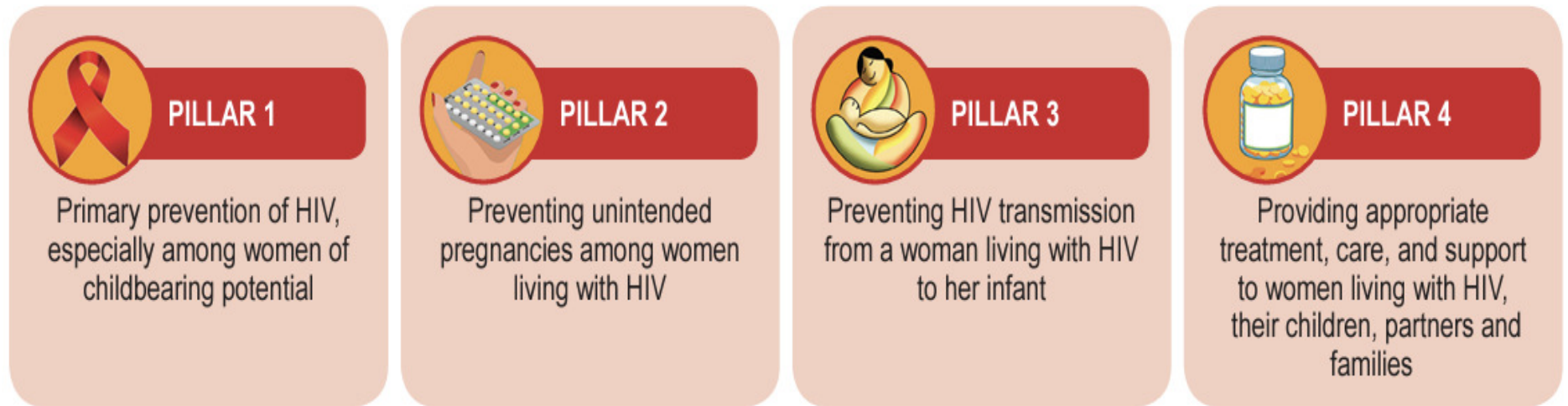


Figure 2 *The Four Pillars of PMTCT for HIV*

Impact on Maternal Mortality

- Maternal mortality ratio in HIV infected women was 10 times higher
- NPRIs remain the largest category of maternal death
- TB is the most common cause of death in this category

International Journal of Gynecology and Obstetrics 119 (2012) S26–S29



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Contents lists available at [SciVerse ScienceDirect](#)

International Journal of Gynecology and Obstetrics

journal homepage: www.elsevier.com/locate/ijgo



IMPROVING MATERNAL HEALTH

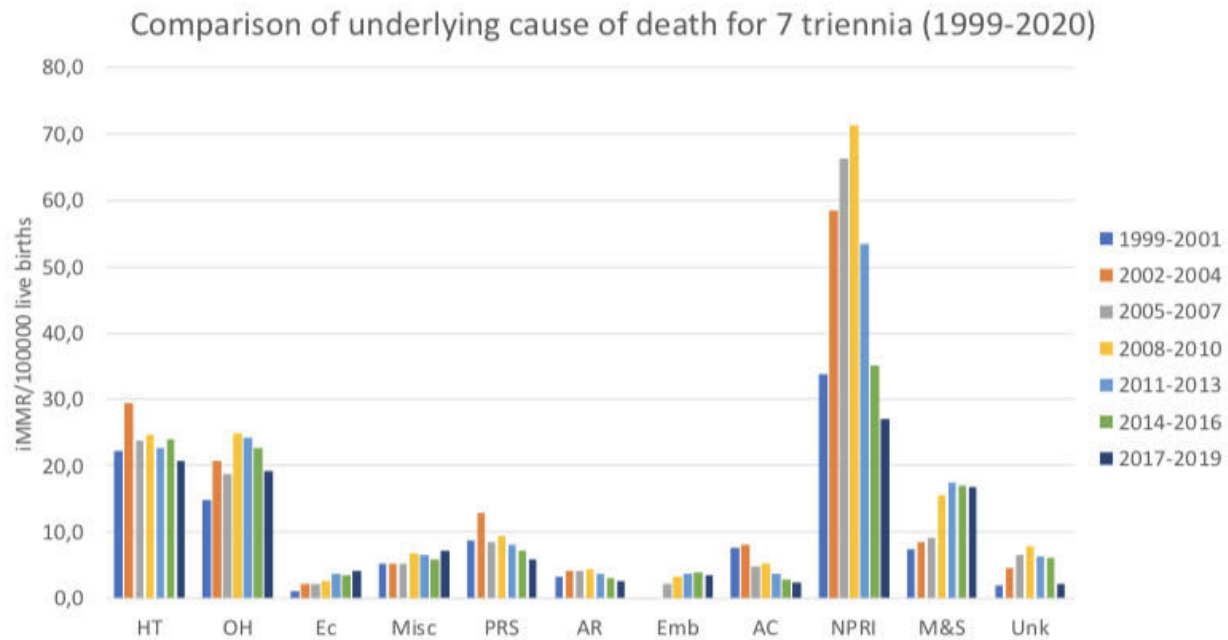
The effect of HIV infection on maternal health and mortality

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Saving Mothers 2017-2019



Saving Mothers Report 2017-2019

- Majority of pregnant, HIV + women died despite ART, 18% were not on treatment, 73,1% were on FDC
- Problem of ART failure emerging-need to manage it better
- Anaemia an important association with NPRIs, OH,PRS

HIV transmission to infant

- Can occur in-utero, intra-partum and through feeding practices
- Transmission rates without PMTCT was up to 40%
- Transmission rates 2008-2011, dropped 9,6%- 2,8%
- Transmission down to 1,6% by 2016 (early MTCT risk), 4,3% by 18 months of age

Factors contributing to transmission to infant

- High maternal VL
- Maternal HIV seroconversion during pregnancy
- Maternal viral resistance
- Maternal immune & clinical status
- Prolonged rupture of membranes
- Intrapartum haemorrhage
- prematurity

Effects of HIV on pregnancy outcomes

- Little or no effect in the developed world
- African studies have revealed differently:
 - spontaneous abortion,
 - higher rates of ectopic pregnancy- related to concurrent STIs,
 - bacterial pneumonia,
 - UTIs,
 - preterm labour, PPRM,
 - abruptio placentae,
 - LBW but may be due to prematurity,
 - increased SB rates,
 - infections in the post-partum period

Does pregnancy have an effect on natural hx of HIV infection?

- In pregnancy immune function is suppressed both in HIV infected & un-infected women
- Concern that these normal changes could accelerate progression of the infection
- Studies both in Africa and the developed world- no rapid progression of disease during pregnancy, however

women with advanced disease who fall pregnant are more likely to have HIV complications.

HIV and TB co-infection in pregnancy

- Hypertensive disorders in pregnancy and adverse fetal outcomes are higher in women diagnosed with TB and even higher in TB/HIV co-infection
- TB symptoms often masked by pregnancy ailments- TB screening mandatory for all pregnant women in TB endemic areas, to reduce maternal and fetal health complications

Current Hypertension Reports (2020) 22: 104
<https://doi.org/10.1007/s11906-020-01114-5>

PRECLAMPسيا (V GAROVIC, SECTION EDITOR)



The Association of Tuberculosis Mono-infection and Tuberculosis-Human Immunodeficiency Virus (TB-HIV) Co-infection in the Pathogenesis of Hypertensive Disorders of Pregnancy

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Accepted: 10 October 2020 / Published online: 7 November 2020
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Abstract

Purpose of Review This review highlights the impact of TB mono-infection and TB-HIV co-infection on the pathogenesis of adverse maternal outcomes such as hypertensive disorders of pregnancy (HDP) and adverse fetal outcomes such as recurrent spontaneous abortion (RSA), fetal growth restriction (FGR), and low birth weight.

Recent Findings Research has shown that HDP, such as severe pre-eclampsia (PE) and eclampsia, as well as adverse fetal outcomes such as recurrent spontaneous abortion, fetal growth restriction, and low birth weight, are higher in women diagnosed with TB mono-infection and even higher in TB-HIV co-infection compared to those without TB. This is speculated to occur due to exaggerated activation of both angiogenic factors such as vascular endothelial growth factor (VEGF), nitric oxide (NO),

The goals of ARVS in pregnancy

- Maximally and durably suppress plasma HIV RNA
- Restore and preserve immunologic function
- Reduce HIV-associated morbidity & prolong the duration and quality of survival
- Prevent HIV transmission

Challenges in the Mx of HIV in pregnancy

PILLAR 1- Primary prevention

- Counselling of safe sex practices
- Counsel about PrEP
- Repeat HIV testing of women who initially test neg in pregnancy.

High HIV incidence during pregnancy: compelling reason for repeat HIV testing

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Objective: To determine the incidence of HIV during pregnancy as defined by seroconversion using a repeat HIV rapid testing strategy during late pregnancy.

Design: Cross-sectional study nested in a prevention of mother-to-child transmission program

Methods: Pregnant women were retested between 36 and 40 weeks of gestation, provided that they had been tested HIV negative at least 3 months prior.

Results: Among the 2377 HIV-negative women retested, 1099 (46.2%) and 1278 (53.4%) were tested at urban and rural health facilities, respectively. Seventy-two women (3%) were HIV-positive (679 woman years of exposure) yielding a HIV incidence rate of 10.7/100 woman years [95% confidence interval (CI) 8.2–13.1]. HIV incidence in pregnancy was higher but not statistically significant at the urban facilities (12.4/100 woman years versus 9.1/100 woman years) and at least two-fold higher among the 25–29 and 30–34-year age groups (3.8 and 4.5%, respectively) as compared with the less than 20-year age group (1.9%). Single women were at 2.5 times higher risk of seroconverting during pregnancy ($P = 0.017$).

Conclusion: HIV incidence during pregnancy is four times higher than in the non-pregnant population reported in a recent survey. Public health programs need to continue to reinforce prevention strategies and HIV retesting during pregnancy. The latter also offers an additional opportunity to prevent mother-to-child transmission and further horizontal transmission. Further research is required to understand the cause of primary HIV infection in pregnancy.

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AIDS 2009, **23**:1255–1259

2377 women who had tested hiv neg 3 months prior were re-tested between 36-40 weeks

CONCLUSION: HIV incidence 4 times higher in pregnancy. Re-testing offers additional opportunity to prevent MTCT & horizontal transmission.

Challenges in the Mx of HIV in pregnancy cont'd

PILLAR 2

- Contraception

- Will reduce unplanned and unwanted pregnancies which contribute to maternal deaths- abortions, ectopic pregnancy & miscarriages
- Allow women to plan pregnancies when virally suppressed which improves pregnancy outcomes and reduces transmission of HIV to infant
- Long acting reversible contraception (LARCs) recommended

Challenges in the Mx of HIV in pregnancy cont'd

PILLAR 3

- Where most of the work is being done with ART and safe maternity practices
- *Viral load monitoring*
- Adherence
- Resistance
- Infant feeding practices

Viral load monitoring

- Been part of the guideline since 2015 at least
- Slow uptake, some still doing CD4 only
- No baseline VL at initiation
- Guidelines clear on how to respond to VL result
- Unsuppressed VL in pregnancy is an emergency, it may be poor adherence and it may be resistance!!


Adherence

- Many factors affecting adherence
 - Non-disclosure
 - Stigma
 - Side-effects
 - Nausea caused by pregnancy
- Important to spend time finding out reasons of non-adherence- most can be dealt with & transient

Clinical Infectious Diseases

MAJOR ARTICLE

HIV/AIDS

Adherence to Antiretroviral Therapy During and After Pregnancy: Cohort Study on Women Receiving Care in Malawi's Option B+ Program

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Downloaded from

Resistance

- An increased uptake of ART has led to the inevitable consequence of HIV drug resistance
- Acquired & transmitted
- About 10% of clients with at least 1 drug resistance mutation
- In our context move away from TEE to TLD
- DTG provides rapid viral suppression, well tolerated improves adherence, high genetic barrier to resistance and has NO interaction with hormonal contraceptives

Challenges in the Mx of HIV in pregnancy cont'd

PILLAR 4

- Post-natal Care and adherence
- Early Infant Diagnosis

HIV and COVID-19



Overview of SARS-CoV-2 infection in adults living with HIV

Juan Ambrosioni*, José Luis Blanco*, Juliana M Reyes-Urueña, Mary-Ann Davies, Omar Sued, Maria Angeles Marcos, Esteban Martínez, Silvia Bertagnolio, Jose Alcamí, Jose M Miro, COVID-19 in HIV Investigators†

Lancet HIV 2021; 8: e294-305

*Contributed equally

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Around 2.5 million deaths and more than 110 million COVID-19 cases have been reported globally. Although it initially appeared that HIV infection was not a risk factor for COVID-19 or more severe disease, more recent large studies suggest that people living with HIV (particularly with low CD4 cell counts or untreated HIV infection) might have a more severe clinical course than those who are HIV-negative. Moreover, the COVID-19 pandemic has disrupted HIV prevention and treatment services worldwide, creating huge challenges to the continuity of essential activities. We have reviewed the most relevant features of COVID-19 in people living with HIV and highlighted topics where further research is required.

Pregnant Women in Low- and Middle-Income Countries Require a Special Focus During the COVID-19 Pandemic

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HIV and Covid 19

1. Not many studies include pregnant women
2. Pandemic may worsen HIV related complications & effects of lockdown on accessing health-care services
3. ART not treatment for Covid
4. Please ensure you don't stop ART whilst treating Covid
5. Be aware of drug-drug interactions when treating Covid and HIV.
6. HIV & Covid pandemics may collectively result in another pandemic of children with no mothers
7. Most clinical trials exclude pregnant women and this needs to be reviewed

Conclusion

1. A lot has been achieved in testing for HIV & initiating treatment in those who need it
2. Guidelines have included the re-testing of HIV neg women & the use of PrEP, however the uptake is lacking.
3. A lot still needs and can be done in maintaining viral suppression
4. Contraceptive counselling and services need to increase
5. Feeding practices still contributing to increase in transmission risk
6. Management of HIV in pregnancy starts before the pregnancy- ideally!