

**GUM taster day 2024:
HIV in pregnancy**

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HIV in pregnancy & postpartum 2024

About me!

- Graduated Edinburgh MBChB 2005
- FY1/2 Dartford / Woolwich (inc 3/12 GUM)
- CMT 1/2 Ashford & St Peter's, Surrey
- ST 3-5 Newham / Barts & the London
- MRC Clinical Research Training fellowship UCL (PhD HIV & pregnancy)
- ST6 Barts & the London until Jul 2018
- Locum consultant HIV Medicine St George's 2018
- Substantive consultant HIV Medicine 2019



HIV in pregnancy & postpartum 2024

About me!

What my current job looks like:

- 50% Clinical: general clinics, HIV pregnancy clinics, weekly WR
- Admissions tutor for MBBS at City, St Georges 1 PA
- Other educational roles: 2 PA
- SW London CMDU Clinical lead 1.25PA

Extra:

Chair BHIVA HIV& Pregnancy guidelines writing group



HIV in pregnancy & postpartum 2024

- Epidemiology in the UK
- Conceiving on ART
- Continuing ART in people who are pregnant
- Managing viral failure in pregnancy
- Other pregnancy outcomes
- Infant postnatal prophylaxis
- Infant feeding

HIV in pregnancy & postpartum: Tania

- 27 year old woman with PHIV
- Longstanding adherence difficulties

- TAF/FTC + DTG 50mg od
- VL < 50 c/ml, CD4 201 cells/micL
- No resistance

- Period 5 days late
- PT positive in clinic



- Older son aged 3, HIV-
- Difficult relationship with partner, live separately
- 1 bedroom flat
- Working part-time

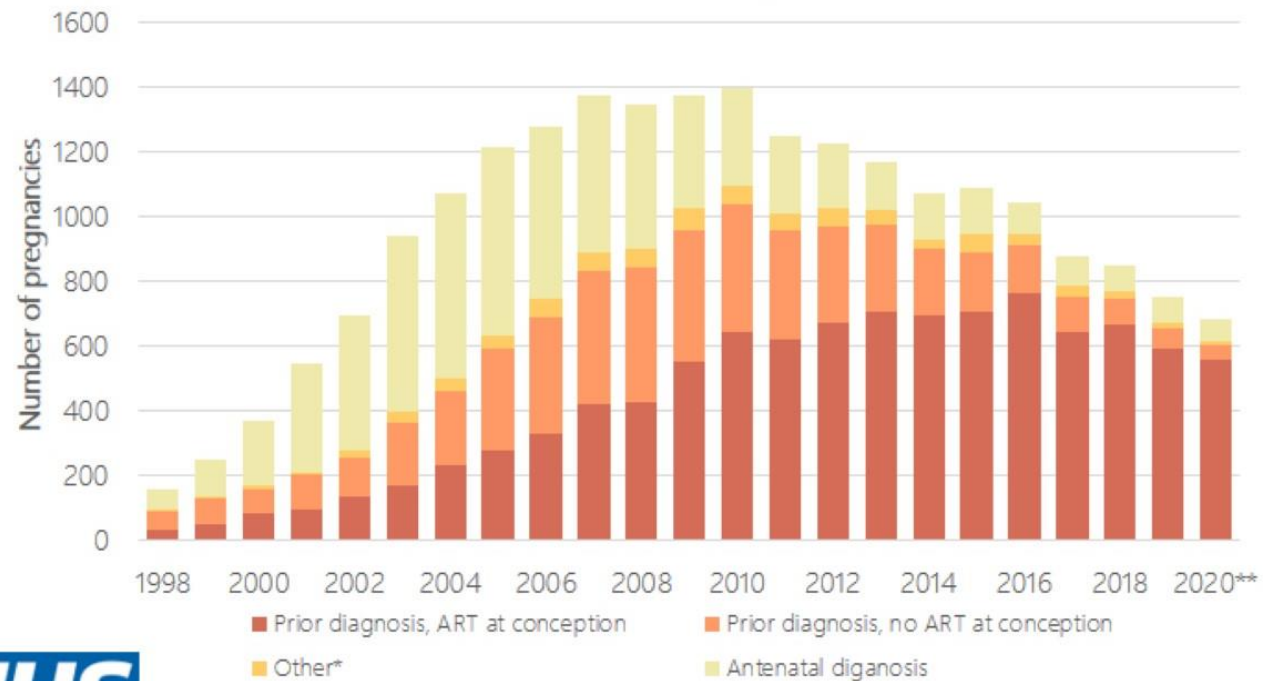
- Prev severe N&V in pregnancy
- Prev CS with son at 39/40 (VL 500 c/ml)
- Formula fed older son

HIV in pregnancy & postpartum: **Epidemiology**

- Universal antenatal HIV screening was introduced in England/UK in 2000 - 2002
- Uptake has exceeded 97% since 2011
- ISOSS (prev NSHPC) collects data on all diagnosed women who become pregnant, and their children
- Currently around 700 pregnancies py in England (85% live births)

HIV in pregnancy & postpartum: Epidemiology

Timing of diagnosis & ART at conception, England 1998-2020



Conception on ART
20.1% in 2000-2004
75.5% in 2015-2019

* contains pregnancies lacking information on precise timing of diagnosis and/or ART use

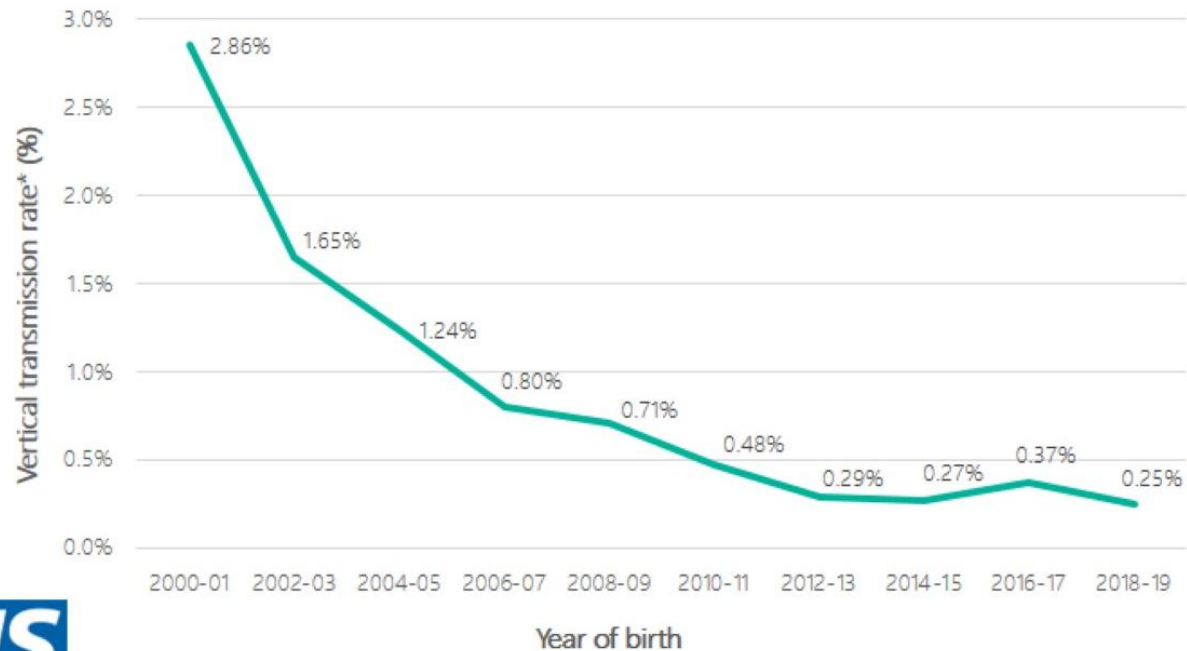


England pregnancies (all outcomes) reported to ISOSS by December 2022



HIV in pregnancy & postpartum: Epidemiology

Vertical transmission in England, 2000-2019



* among infants born to women diagnosed with HIV by the point of delivery

HIV in pregnancy & postpartum: Current context

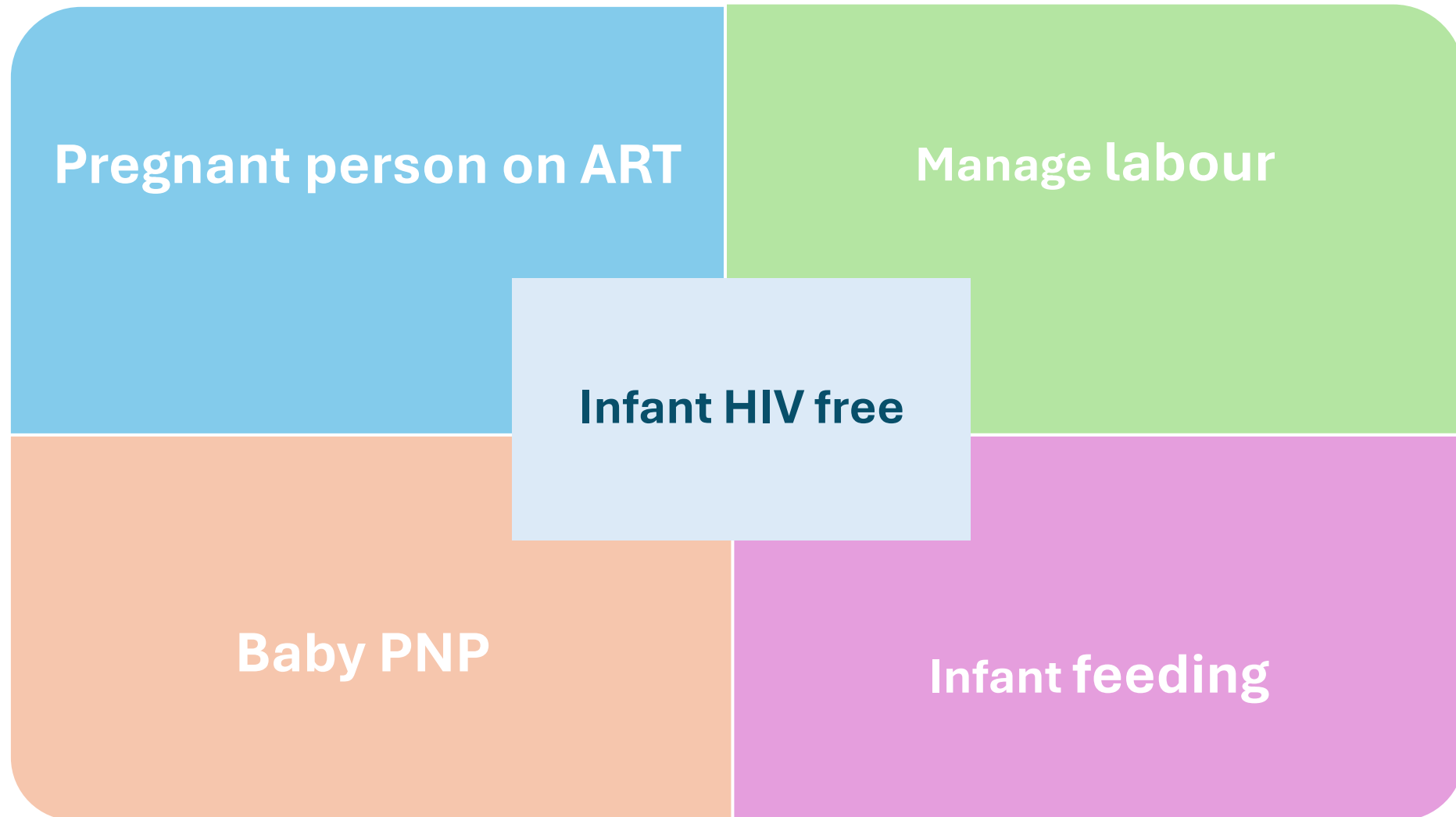
- Health & wellbeing of pregnant/postpartum women/people living with HIV and their infants goes much further than undetectable viral load
- Evolution of knowledge/experience to improve health & wellbeing of people living with HIV continues at pace
- Most new ART approved for use without dosing and safety data in pregnancy
- Pregnant women/people should be ‘protected through’ rather than ‘protected from’ research¹
- Ensure access to best available ART for health and wellbeing, within the constraints of pregnancy safety data

1. Lyerly et al. Ending the evidence gap for pregnancy, HIV and co-infections: ethics guidance from the PHASES project. [J Int AIDS Soc.](#) 2021 Dec; 24(12): e25846.

HIV in pregnancy & postpartum: Current context

- Pregnancy is a happy time for the majority
- Physical, social and psychological challenges in context of marginalization and long-term conditions such as HIV
- Importance of holistic care, effective MDT working and sharing of knowledge and experience.

HIV in pregnancy & postpartum: Preventing PHIV



HIV in pregnancy & postpartum: Tania

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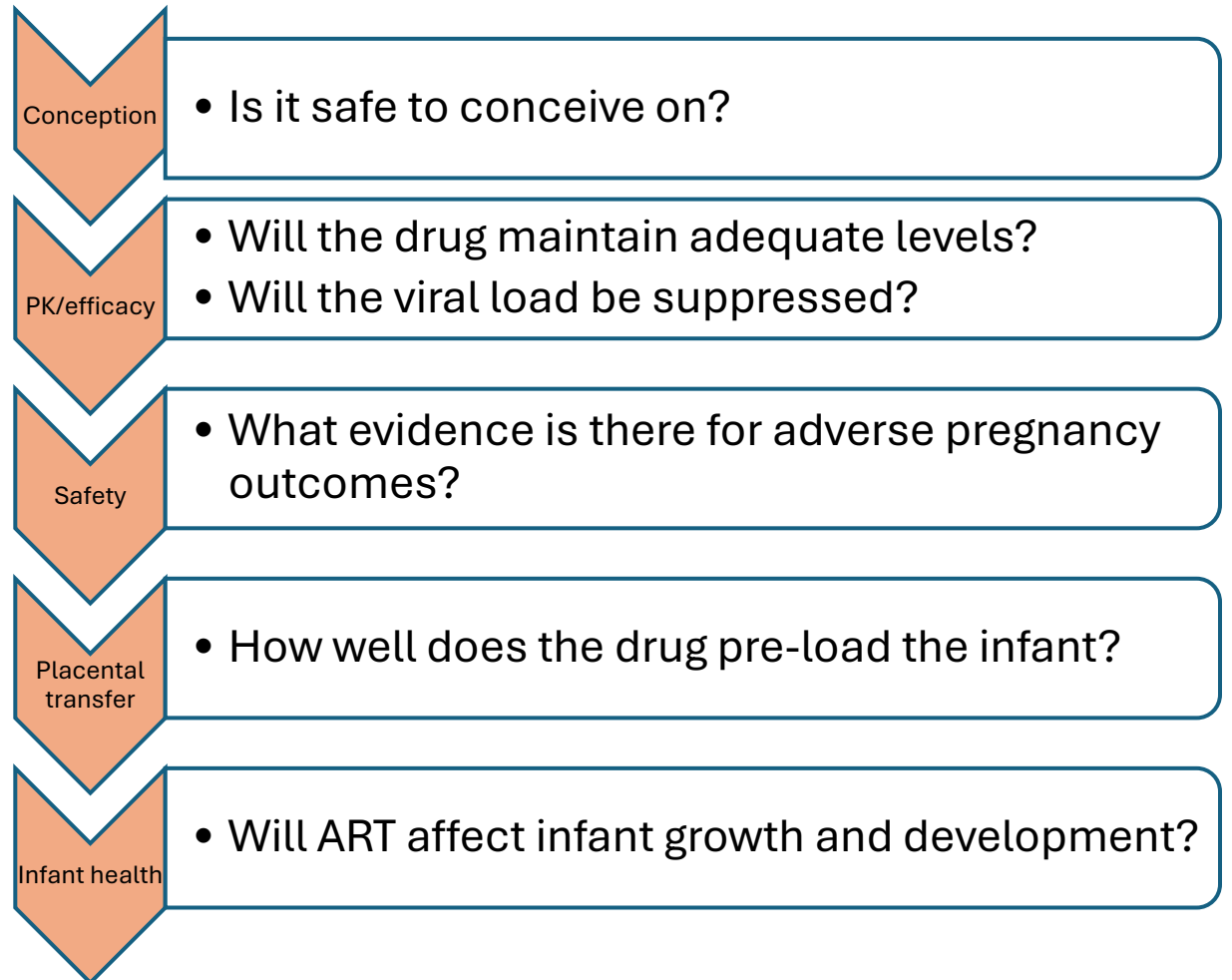
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Should I switch my ART?

HIV in pregnancy & postpartum: Preventing PHIV

Pregnant person on ART



HIV in pregnancy & postpartum: data gap

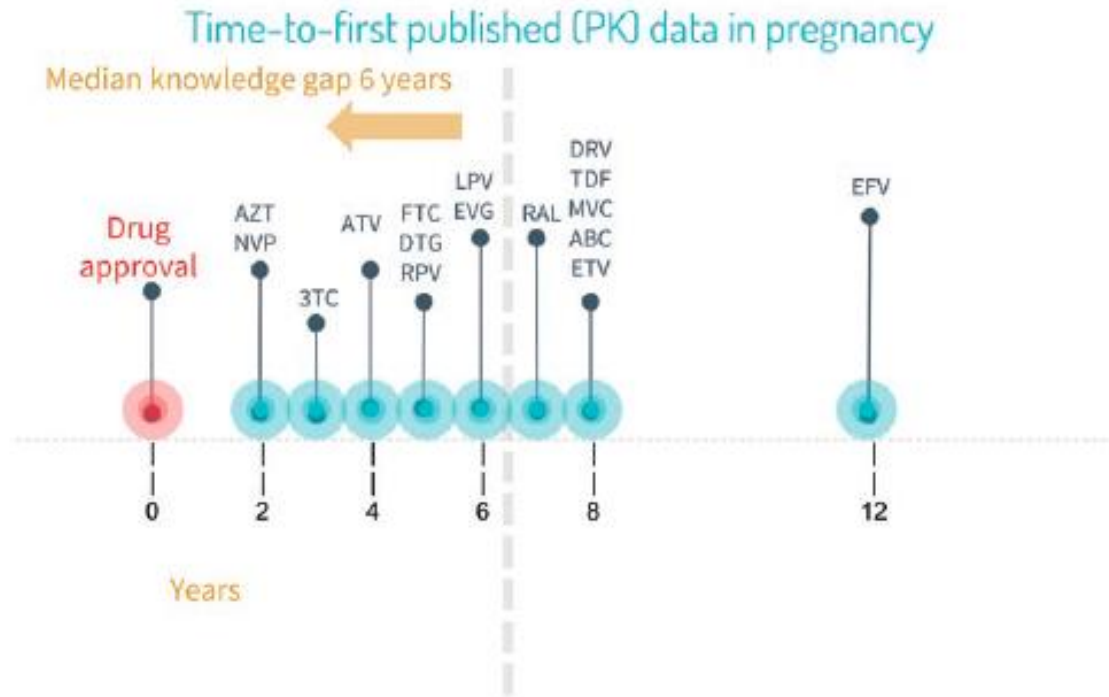


Figure 1. Years between US Food and Drug Administration approval and publication of pregnancy data for different antiretroviral drugs. Abbreviations: 3TC, lamivudine; ABC, abacavir; ATV, atazanavir; AZT, zidovudine; DRV, darunavir; DTG, dolutegravir; EFV, efavirenz; ETV, etravirine; EVG, elvitegravir; FTC, emtricitabine; LPV, lopinavir; MVC, maraviroc; NVP, nevirapine; PK, pharmacokinetic; RAL, raltegravir; RPV, rilpivirine; TDF, tenofovir disoproxil fumarate.

HIV in pregnancy & postpartum: Pharmacokinetics

Parameter	Consequences
Delayed gastric emptying and increased gastric pH	Altered drug bioavailability and delayed time to peak levels after oral administration
Increased cardiac output	Increased hepatic blood flow; increased elimination for some drugs
Increased total body water, extracellular fluid	Altered drug disposition; increased V_d for hydrophilic drugs
Increased fat compartment	Decreased elimination of lipid-soluble drugs; increased V_d for hydrophobic drugs
Increased renal blood flow and glomerular filtration rate	Increased renal clearance
Decreased plasma albumin concentration	Increased free fraction of drug
Altered CYP450 and UGT activity	Altered oral bioavailability and hepatic elimination

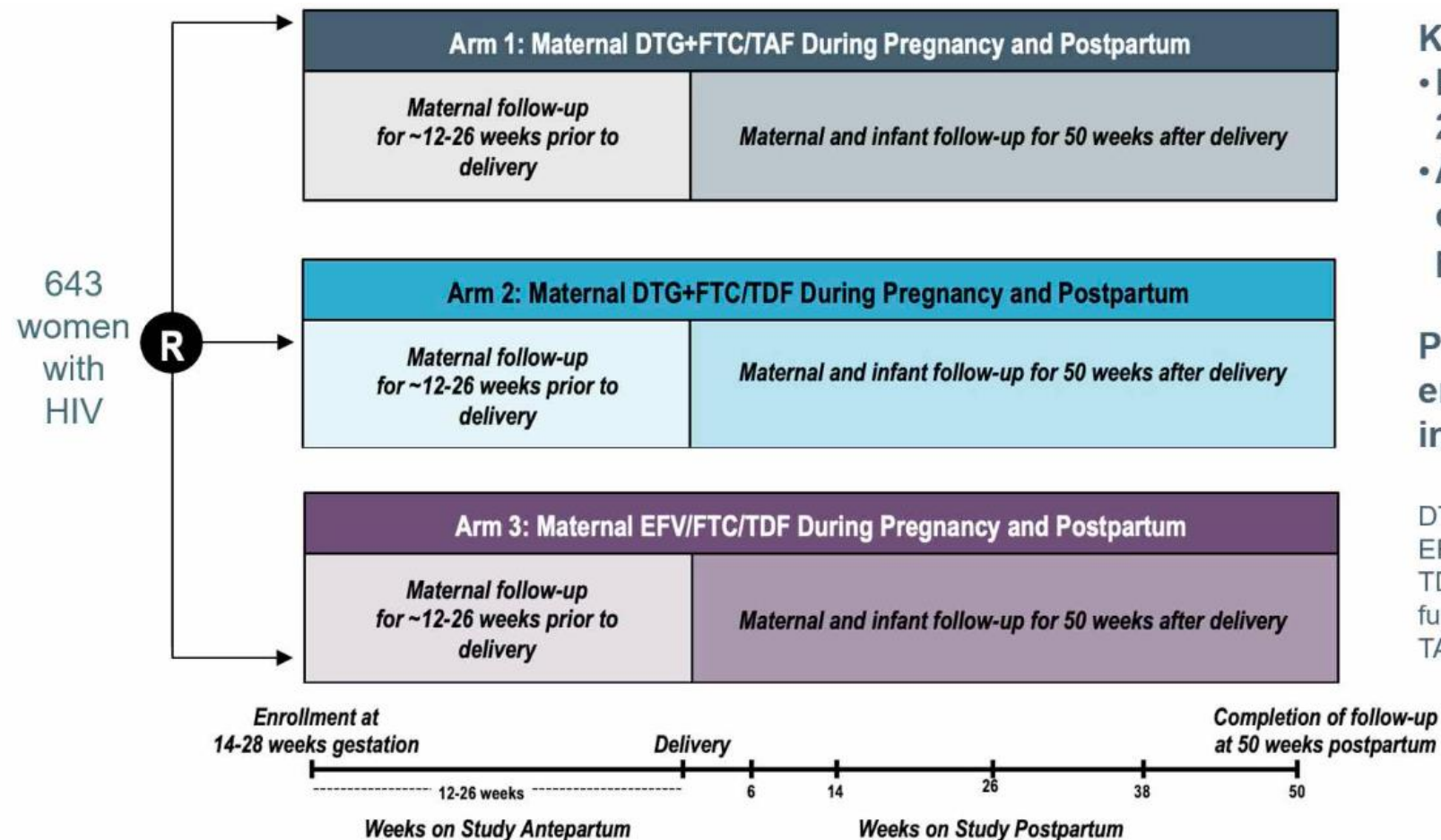
UGT, uridine diphosphate glucuronosyltransferase; V_d , volume of distribution.

doi:10.1371/journal.pmed.1002160.t001

Pregnancy-Associated Changes in Pharmacokinetics: A Systematic Review. Gali Pariente, Tom Leibson, Alexandra Carls, Thomasin Adams-Webber, Shinya Ito, Gideon Koren. PLOS November 1, 2016

HIV in pregnancy & postpartum: ART

IMPAACT 2010 'VESTED'



Key Eligibility Criteria

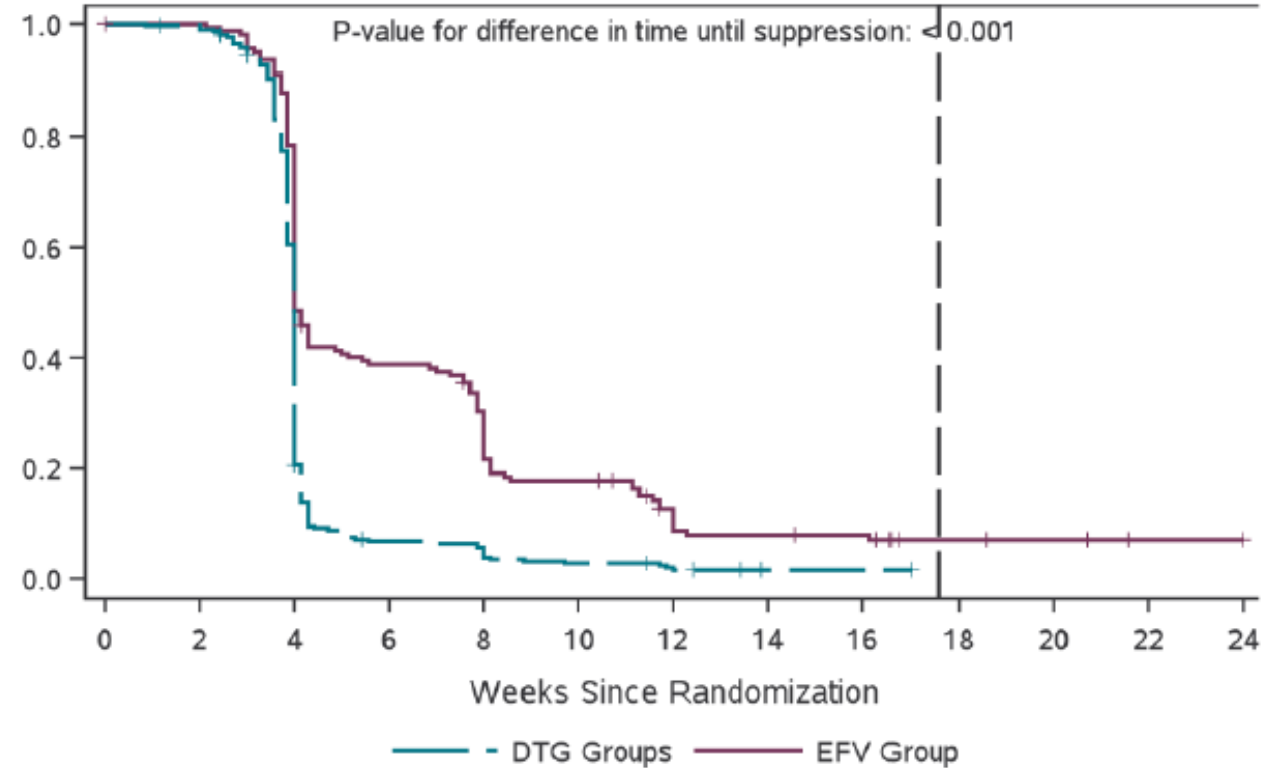
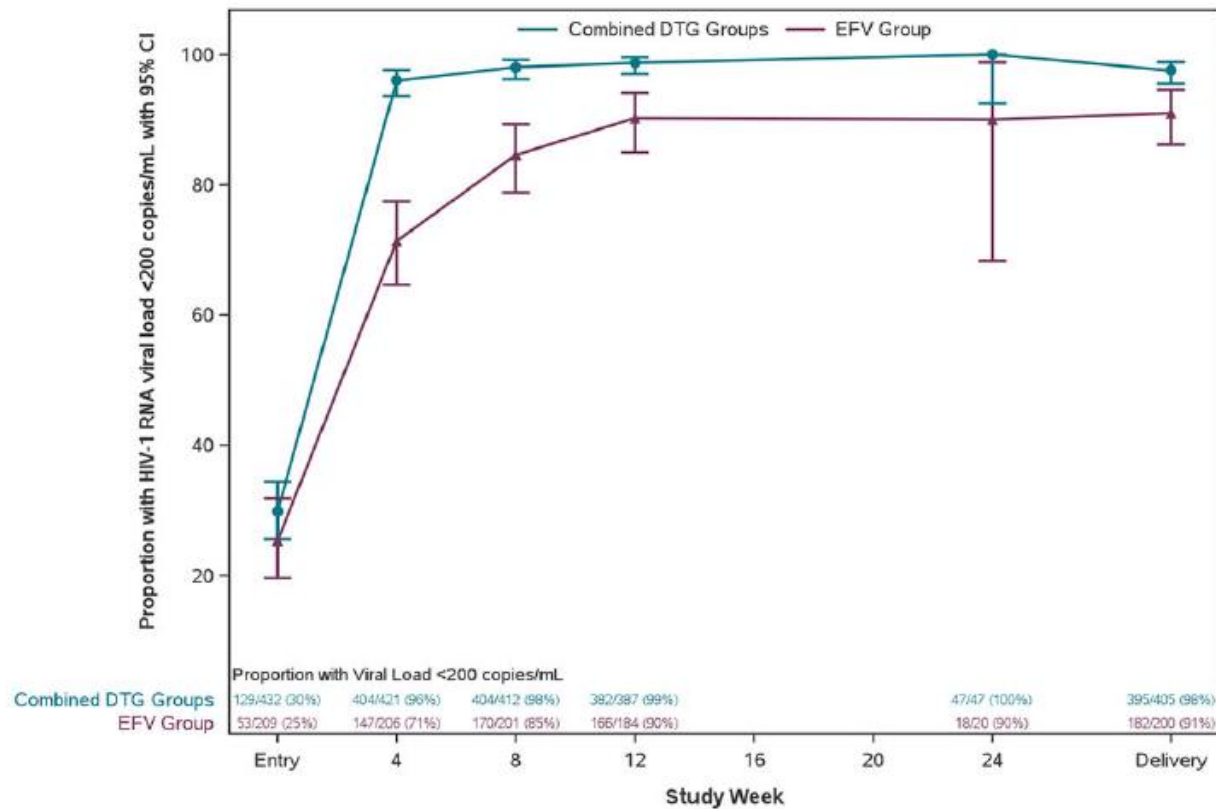
- Pregnant WLHIV 14-28 weeks gestation
- ART-naïve (up to 14 days ART in current pregnancy allowed)

Participants were enrolled at 22 sites in 9 countries

DTG = dolutegravir
EFV = efavirenz
TDF = tenofovir disoproxil fumarate
TAF = tenofovir alafenamide

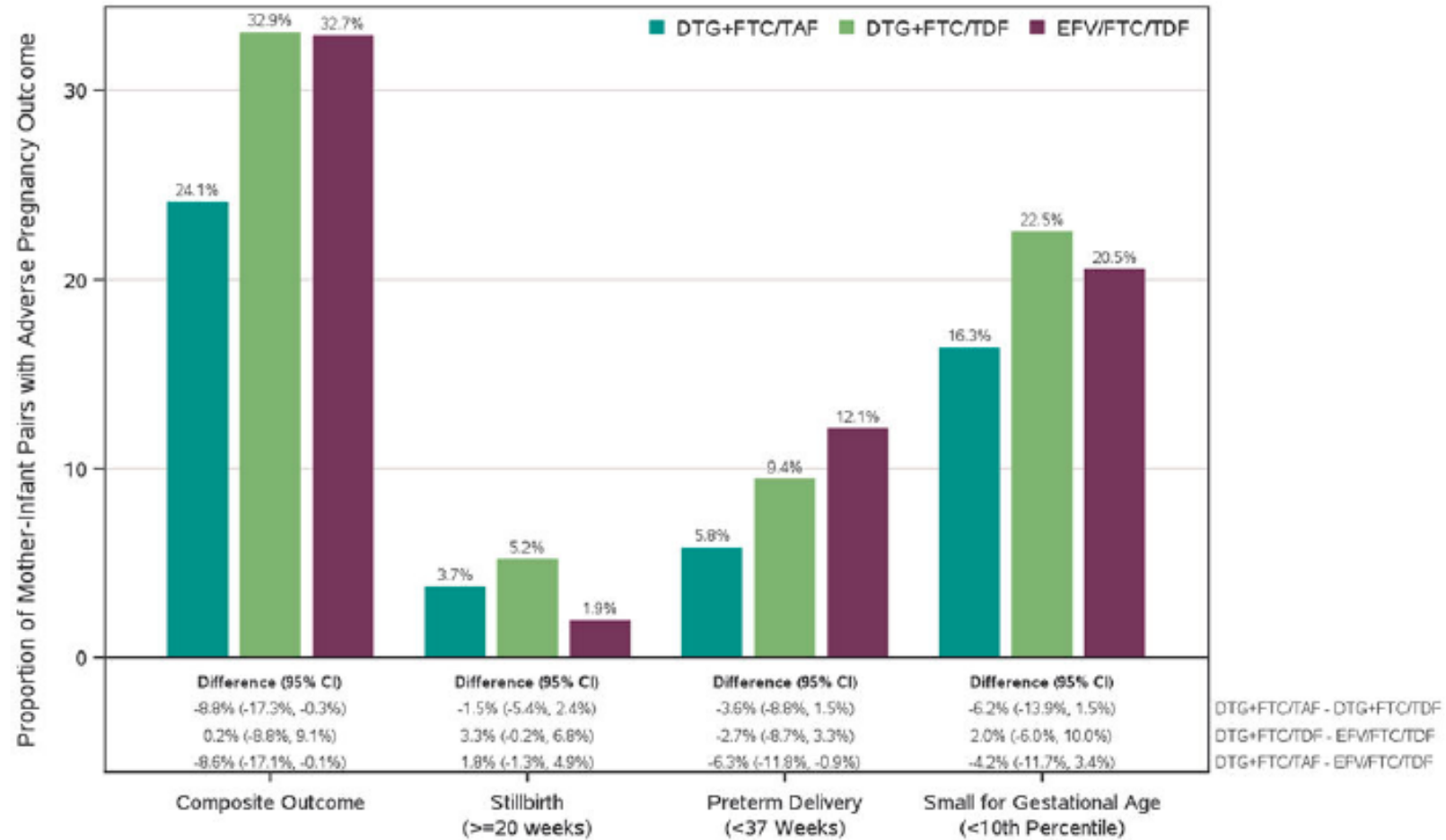
HIV in pregnancy & postpartum: ART

IMPAACT 2010 'VESTED'

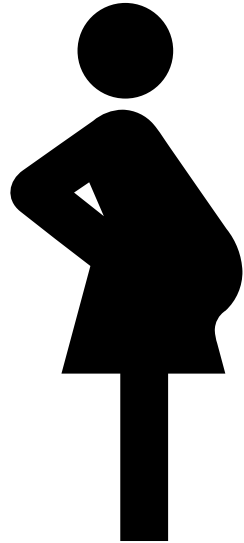


HIV in pregnancy & postpartum: ART

IMPAACT 2010 'VESTED'



HIV in pregnancy & postpartum: Tania



Tania comes back to clinic at 28 weeks gestation and her viral load is 2380 copies/ml.

HIV in pregnancy & postpartum: Managing detectable VL



- Review adherence (including a full exploration of potential impacting factors)
- Review DDIs
- Perform resistance test if appropriate
- Consider therapeutic drug monitoring (TDM)
- Optimise to best regimen
- Adherence support
- Psychological/peer support

HIV in pregnancy & postpartum: Postnatal prophylaxis

Basic principles:

1. Further reducing unnecessary drug exposure for infants at minimal risk of acquiring HIV;
2. Ensuring full combination ART as early as possible for those at highest risk of acquiring HIV;
3. Ensuring ongoing minimisation of vertical transmission risk.

HIV in pregnancy & postpartum: Infant feeding

- Very limited data on transmission risk via human milk in high-income countries
- 203 women supported to breastfeed 2012-2021 in the UK, with no reported transmissions so far¹
- Outcomes in a small cohort 25 woman-infant pairs reported in Switzerland with no reported transmissions
- RCT data from LMIC suggests U does not equal U

1. Francis K et al. Monitoring clinical practice of BHIVA supported breastfeeding guidelines for women living with HIV in the UK, BHIVA. 2023

HIV in pregnancy & postpartum: infant feeding

IMPAACT PROMISE trial

- RCT 14 sites in Africa & India, enrolled 1 week postpartum after negative infant PCR, compared transmission rates with iNVP vs. maternal ART
- 1220 women-infants pairs in maternal ART arm, 75% women baseline VL <1000c/ml; 85% at week 50
- Transmission rate was 0.3% (95% CI 0.1–0.6) at 6 months and 0.6% (95% CI 0.4–1.1), at 12 months
- Two infants acquired vertical infection through breastfeeding despite maternal VL <40c/ml close to the time of transmission

DOLPHIN-2

- Compared DTG vs. EFV ART started late in pregnancy and continued through breastfeeding (n=268)
- One transmission at 72 weeks postpartum with VL<50 copies ml, EFV arm.

HIV in pregnancy & postpartum: infant feeding

Recommendations:

1. The HIV MDT should inform all pregnant women/people that U=U does not apply to breast/chestfeeding, and that the risk of transmission is greatly reduced by ART but is not zero. 1B
2. Exclusive formula feeding removes all risk of postpartum HIV transmission to infants. We therefore recommend that women/parents feed their babies with formula milk (or other alternatives outlined in section 12.3) exclusively if they want zero risk of HIV transmission to their infants postpartum. 1A
3. Women/birthing parents who are virologically suppressed on ART with good adherence, and who choose to breast/chestfeed, should be supported by the HIV MDT to do so. 1D



Questions?

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