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EDITORIAL

This HTB leads with a special report by Polly Clayden into the response to the recent safety alerts concerning dolutegravir (DTG) and its use preconception and a related article on balancing the risks and benefits of changing treatment for pregnant women who are currently stable on DTG-based ART.

In addition to summarising the current knowledge and the implications for women, it includes an analysis of serious structural problems for collecting data on the populations that are most likely to need new drugs. This commonly includes women, use during pregnancy and people with TB coinfection.

This topics will be the focus of sessions at the 22nd World AIDS Conference (AIDS 2018) which will be held this year in Amsterdam from 23–27 July.

We include a brief summary of the highlighted late-breakers and news about the early programme. HTB will post daily reports during the conference.

<http://i-base.info/htb/34473>

Also included in this short pre-conference issue, we include news that the FDC bictegravir/F/TAF received approval in the EU.

We also recommend an excellent review on why U=U in relation to sexual transmission, cannot be taken to cover the risk from breastfeeding, even if viral load is undetectable (in both plasma and breast milk).

An antiretroviral pipeline report is included as a supplement to this issue of HTB.

This compliments the annual Fit For Purpose review that will be published online on 22 July and launched at AIDS 2018.

Supplement

This issue of HTB includes HIV pipeline 2018 as a supplement.

The report reviews recently approved and pipeline HIV drugs and is linked to the upcoming i-Base Fit for Purpose review on treatment optimisation - due to be launched in 22 July 2018 before AIDS 2018.

<http://i-base.info/htb/34488>

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i-Base 2018 appeal

Last year we launched a funding appeal to help i-Base continue to provide free publications and services.

Your help has been inspiring – and we hope this support will continue during 2018. If 1000 people support us with £5 a month we will be on course to meet our shortfall. All help is appreciated.

<http://i-base.info/i-base-appeal-we-need-your-help>

SPECIAL REPORT

Dolutegravir preconception signal: time is up for shoddy surveillance

Polly Clayden, HIV i-Base

The news in May 2018 of a potential risk of neural tube defects in infants born to women taking dolutegravir (DTG) at the time of conception sent shockwaves through the HIV community.

But, despite massive global investment, aggressive transition plans – as well as calls for years for more systematic recording of outcomes when women receive ART in pregnancy – few prospective birth registries have been established in other settings that can refute or confirm this finding.

Meanwhile, women of child-bearing age, whether they intend to become pregnant or not, are being told that they must stick with (or go back to) efavirenz (EFV) – a drug that, before this news, was in the process of being replaced with DTG.

The Botswana data

On 18 May 2018, the World Health Organisation (WHO) issued a statement after a potential safety signal with DTG was identified relating to neural tube defects in infants who had been exposed to this antiretroviral at the time of conception. [1]

The safety signal was found at a preliminary, unscheduled analysis of an ongoing observational study in Botswana. The Tsepamo study is a birth surveillance programme,

started after the introduction Option B+ (lifelong ART for all pregnant women) in Botswana. When it was designed, there was still some uncertainty about EFV and birth defects.

Tsepamo compares birth outcomes with exposure from conception and/or during pregnancy to the most common ART regimens used in the country since 2014. Surveillance is conducted at eight maternity wards in government hospitals, representing about 45% of all births. Data are extracted from all consecutive births at 24 weeks or more gestational age, using obstetric records. Livebirth and stillbirth outcomes in HIV positive are also compared to those in HIV negative women.

Botswana is an ideal setting to do this analysis. There is high HIV prevalence (about 22%), high uptake of ART in pregnancy (about 90%) and the majority of women (over 95%) deliver in a healthcare facility. Due to changes in national guidelines there has been a variety of regimens to compare since the study began. Botswana began using DTG as preferred first-line in May 2016.

The study had previously reported reassuring data (similar to that with EFV) with DTG started during pregnancy. [2, 3] The most recent figures, published in Lancet Global Health online 4 June 2018, includes 1729 pregnant women who started DTG-based ART and 4593 EFV-based ART in pregnancy. [4] The risk for any adverse birth outcome among women on DTG versus EFV was similar: 33.2% vs 35.0%; aRR 0.95 (95% CI 0.88 to 1.03). As was the risk of any severe birth outcome: 10.7% vs 11.3% (95% CI 0.94 0.81 to 1.11).

But adverse pregnancy outcomes among HIV positive women continue to be elevated compared with HIV negative women, despite ART. When these data were released the Tsepamo investigators emphasised that the findings were reassuring but not the whole story. And that birth outcomes with DTG exposure from conception still needed to be evaluated.

The preconception analysis revealed four cases of neural tube defects (spina bifida, anencephaly, encephalocele/iniencephaly) out of 426 births to women who became pregnant while taking DTG.

This rate of approximately 0.9% compares with a 0.1% risk of neural tube defects in infants born to women taking other ARVs at the time of conception.

Confusing communications

WHO's May statement was followed by several others, including from US President's Emergency Plan for AIDS Relief (PEPFAR), US Food and Drug Administration (FDA), European Medicines Agency (EMA), US Department of Health and Human Services (DHHS), as well as a Dear doctor letter from ViV Healthcare [5–9]. The recommendations suggest varying degrees of caution.

The WHO statement advises that pregnant women who are already taking DTG should not stop ART and should speak with their health provider for additional guidance. For women of childbearing age starting ART, including pregnant women, it says, treatment should be based on drugs for which adequate efficacy and safety data are available; an EFV-based regimen is a safe and effective first-line regimen. DTG might be considered in cases where consistent contraception can be assured (if other first-line ART cannot be used in women of childbearing age).

PEPFAR encourages countries to continue with their transition to tenofovir disoproxil fumarate, lamivudine, and DTG (TLD), but states that transition times might be altered to allow for the use of EFV-based regimens for certain women. Until further data are available, it recommends that women with HIV who wish to become pregnant should take EFV-based regimens. Any mention of contraception for women who do not wish to become pregnant is notable by its absence.

The EMA advises avoiding DTG for women who are trying to become pregnant and contraceptive use for those who are not. But they add that if pregnancy is confirmed in the first trimester while a woman is taking DTG, switch to an alternative treatment unless there is no suitable alternative. This last recommendation seems a little overcautious, unless the pregnancy is recognised extremely early, given that the risk window for neural tube defects is 0–28 days. Both the Southern African Clinicians Society and the British HIV Association (BHIVA) have also taken this approach. [10, 11]

Many low- and middle-income countries have already begun to transition (or are in the process of transitioning) to DTG-based regimens and are reviewing their policies based on this new information. It appears that several countries are taking a conservative approach and giving all women of reproductive age EFV-based first-line irrespective of their circumstances. The Kenyan Ministry of Health has pretty much banned DTG for women aged 15–49. [12]

WHO is working with many stakeholders worldwide to follow pregnant women with preconception DTG exposure to ensure more information is available to inform countries' recommendations. [13]

Table 1: Number of women in ViiV dolutegravir studies

Study	Design	Results	Women DTG arm (n)
SINGLE	Phase 3 DTG + ABC/3TC vs EFV/ TDF/FTC 833 ART naive participants 144 weeks	DTG arm superior (driven by lower rate of discontinuation)	67

SPRING-2	Phase 3 2NRTI + DTG vs 2NRTI + RAL 822 ART naive participants 96 weeks	DTG non-inferior	63
FLAMINGO	Phase 3b 2NRTI + DTG vs 2NRTI + DRV/r 484 ART naive participants 96 weeks	DTG superior	31
SAILING	Phase 3 OB + DTG vs OB + RAL 719 treatment experienced participants 48 weeks	DTG superior	107
STRIIVING	Phase 3b 2NRTI/DTG vs current ART 551 suppressed participants, switch 24 weeks	DTG non-inferior	77
SWORD 1+2	Phase 3 RPV + DTG vs current ART 1024 suppressed participants, switch 48 weeks	DTG + RPV non-inferior	120
ARIA	Phase 3b DTG/ABC/3TC vs ATV/r + TDF/FTC 495 treatment naive women 48 weeks	DTG non-inferior	250
DAWNING	Phase 3b 2NRTI + DTG vs 2NRTI + LPV/r 627 experienced participants 48 weeks	DTG superior Week 24 data and large subsets from weeks 36 and 48	116
INSPIRING	Phase 3b 2NRTI + DTG twice daily vs 2NRTI + EFV with RIF- based co-treatment 113 participants 48 weeks	DTG 50 mg twice daily with RIF safe + effective at 24 weeks	36
TOTAL			867

Key: ABC, abacavir; ART, antiretroviral treatment; ARV, antiretroviral; ATV/r, atazanavir/ritonavir; DTG, dolutegravir; DRV/r, darunavir/ritonavir; EFV, efavirenz; FTC, emtricitabine; LPV/r, lopinavir/ritonavir; NRTI, nucleos(t)ide reverse transcriptase inhibitor; OB, optimised background; RAL, raltegravir; RIF, rifampicin; RPV, rilpivirine; TDF, tenofovir disoproxil fumarate; VL, viral load; 3TC, lamivudine

Data from clinical trials

New antiretrovirals are usually introduced with major gaps in information on their safety in pregnancy. [14, 15] In low- and middle-income countries women of child-bearing age make up nearly half (44%) of the population who are on ART, or need to be so, and might become pregnant. [16]

Typically, pregnant women are excluded from registration and strategic trials of new drugs and even data from non-pregnant women are scant when approval is sought or a drug is recently approved. See Table 1 for numbers of women in DTG registrational and post marketing studies.

There are data from a few women who became pregnant in DTG phase 3 trials and post marketing but these are not in sufficient numbers to pick up a rare adverse event such as a neural tube defect, nor have a comparator. [17–19]

Preclinical safety data did not show developmental toxic effects or teratogenicity – although these categories are no longer used, DTG is FDA category B. [20, 21]

In their excellent soon-to-be-published tour de force, HIV treatment in pregnancy, Bailey et al raise the important question of whether more regulatory push is needed to make sure that pharmaceutical companies expedite appropriate studies to generate pregnancy data (similar to that for paediatrics) [16]

Beyond regulatory trials, strategy trials of new drugs should also follow up women who become pregnant within the study remaining on the study drug unless there is a good reason not to. [22]

Other registries and studies

Currently there is a flurry of activity to try and determine whether the safety signal from Botswana was a chance finding.

There are about 600 more pregnant women who started DTG before conception in Tsepamo who are being followed, and data should be available within the next 9–12 months.

As far as other “early adopter” countries are concerned, similar programmes to Tsepamo are in place in Uganda and Malawi. [23] But the transition to DTG is only just beginning so neither country will have much to report yet.

Brazil has been using DTG in its national programme since early 2017, and has an excellent reporting system, but it is unlikely that the numbers of exposures will be substantial. [24]

Data from high-income countries are frequently collected and there has been longer term DTG use – although far fewer women with HIV.

This includes reports to the Antiretroviral Pregnancy Registry (APR). [25] APR is an international (although largely US), voluntary, prospective registry that monitors prenatal antiretroviral exposures to detect potential increases in the risk of birth defects. The APR produces twice-yearly reports.

Antiretroviral exposure is classified by earliest trimester, which means starting ART any time in the first three months. Due to the narrow exposure window of interest for neural tube defects, the current interim report through to 31 January 2018 (published June 2018) included supplementary information on preconception DTG exposure. Only a small number of exposures (121) have been reported to date among which there were no neural tube defects. [26]

The European Pregnancy and Paediatric HIV Cohort Collaboration (EPPICC) is a network of cohort and surveillance studies conducting epidemiologic research on pregnant women and children with HIV and children exposed to HIV during pregnancy.

Data for 81 infants presented in 2017 reported defects in four infants – these are from any pregnancy exposures (55 mothers ART preconception) and not neural tube defects. [27, 28] EPPICC is currently analysing preconception exposures to date across participating European countries.

Most European countries have their own surveillance, some like the UK and Ireland NSHPC (National Study of HIV in Pregnancy and Childhood) and the Swiss MoCHiV (Mother and Child HIV Cohort Study) contribute to EPPICC. Others like the French Perinatal Cohort do not.

Most impenetrable are adverse event reporting systems. Accessing FAERS (AERS) data (data within the FDA's drug Adverse Event Reporting System) requires the investigative skills of a sleuth (plus US \$420 for a drug safety analysis) [29] Obviously, there is no denominator from spontaneous reporting but it is also tricky to work out whether or not events have been reported more than once under different descriptions.

So, despite much global commitment to hunting down neural tube risk data – where registries have not yet been established, numbers are too few or data are impossible to interpret – this might be easier said than done.

C O M M E N T

It is hard to imagine how in 2018 we could be in this situation where women with HIV are being so woefully underserved.

It was not that long ago that analyses were underway to try and work out whether the

risk of neural tube defects, seen in preclinical primate studies with EFV, was similar for humans. [30]

A series of systematic reviews found no evidence of an increased risk of overall or neural tube defects associated with preconception/first trimester exposure to EFV. [31–33] But the authors rated the overall evidence base to be of low quality and each review concluded with a call for well-designed and supported surveillance systems to look at safety of antiretrovirals in pregnancy:

“It is also critical that as efavirenz use increases among women in these countries that support is given to establish adequate pharmacovigilance systems to better define the risk” (2010).

“Prospective surveillance systems particularly in developing countries are needed to improve data reporting and inform the assessment of risk of rare defects” (2011).

“Surveillance planning efforts have recently been established in several countries and such efforts need to be sustained and supported...The data generated from these efforts to improve data collection and reporting will inform future guidelines on the safety of efavirenz and other antiretrovirals in pregnancy” (2014).

Since the EFV signal was first documented, other commentaries with recommendations to set up good surveillance systems are too numerous to mention.

WHO also produced a technical brief – Surveillance of antiretroviral drug toxicity during pregnancy and breastfeeding in October 2013. [34]

This provides an overview of approaches for assessing the safety of antiretrovirals in pregnancy and breastfeeding. It was intended for national HIV programme managers and implementing partners, such as NGOs and academic institutions, *that are responsible for implementing systems to monitor the safety of antiretroviral drugs* (our italics).

It includes information on the development and maintenance of: 1. a prospective pregnancy exposure registry; 2. a birth defect surveillance programme; and 3. a prospective monitoring of cohorts of mother–infant pairs, during the breastfeeding period at sentinel sites. In other words, an instruction manual, for setting up such systems.

So, what needs to be done?

1. Surveillance systems need to be established in countries where DTG and, in the future, other new HIV drugs will be introduced – including long-acting ones that will need extra consideration in pregnancy. This is somewhat after the event for DTG in many places. But HIV is not going to go away for a while, women of childbearing age will likely continue to make up almost half the epidemic, and DTG will not be the last new

HIV drug.

Donors, particularly those supporting aggressive transition, need to ensure that accompanying surveillance programmes are also set up and supported. Those in any doubt about how to approach this need look no further than Botswana’s excellent example – which could be adapted to different settings. And a quick internet search will find WHO’s “how to” document.

- 2. Include more pregnant women in research. PHASES (Pregnancy and HIV/AIDS: Seeking Equitable Study), is a project to develop recommendations for advancing research to address the evidence gaps in pregnant women. [35] The aim is a rigorous evidence base for safer and faster access to new HIV medicines.**
- 3. Regulators need be more demanding. [16] Studies that are mandatory to get full drug approval tend to get done. The potential safety preconception safety signal with DTG highlights the need for large pharmacovigilance studies.**
- 4. Contraception, contraception, contraception. This review has mainly looked at the sorry state of surveillance in pregnancy. But because of this, it is likely that many women who could benefit from DTG might be denied it. If approximately one million pregnant women a year receive ART but over 15 million are of child bearing age and on or in need of ART, [16] a vast number of women remain who do not plan: to have more children, children at that particular time, or children at all.**

The unmet need for effective family planning in many low-income countries is massive and this can be particularly so among HIV positive women. [36] Whether the DTG preconception safety signal is confirmed or turns out to have happened by chance, improving these services would offer huge benefits.

Unfortunately, the global gag rule (more politely known as the Mexico City policy), that blocks US funding, including from PEPFAR, for organisations that use their own non-US funding to for abortion-related activities [37] – and is dramatically expanding under the current administration – is not going to be helpful with improving contraceptive services. Creative solutions will be needed and other more progressive donors need to step up.

While we wait for further information, more nuanced discussions on provision of DTG to women – rather than a blanket ban for those aged 15–49 – are critical. These discussions need to include women with HIV and their communities, to remember the reasons why DTG was chosen as an optimal antiretroviral in the first place (including improved resistance and side effects profiles), and take broader risk/benefits into consideration.

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CONFERENCE REPORTS

22nd International AIDS Conference (AIDS 2018)

23 – 27 July 2018, Amsterdam

Introduction

The 22nd International AIDS Conference (AIDS 2018) is being held this year from 23–27 July in Amsterdam.

The programme and abstract listings are already online with open access, though the abstracts themselves are not available and will be embargoed until presented.

Also, this year the organisers publicised details of selected late-breaker abstracts three weeks before the meeting, which we include as a bulleted summary as our first pre-conference article.

This is going to be an important conference, with UK researchers involved in many of these important studies. These notably include having sites in both the PARTNER and GEMINI studies and for presenting results of the first randomised kick and kill cure-related study from the RIVER group.

AIDS 2018 programme online:

<http://programme.aids2018.org>

Once the conference starts, early reports will be added to the list of articles below.

Reports included in this issue of HTB.

- AIDS 2018: Programme online and late-breaker highlights announced three weeks before the conference.

AIDS 2018: Programme online and late-breaker highlights announced three weeks before the conference

Simon Collins, HIV i-Base

Three weeks ahead of the upcoming International AIDS Conference (AIDS 2018) the meeting organisers have posted the schedule and programme online.

<http://programme.aids2018.org>

The pre-conference publicity has also announced their pick of late-breaker highlights.

- **PARTNER2** – as follow-up to the landmark PARTNER study, additional evidence will be presented from the extension study that continued to enroll and follow gay couples
- **GEMINI studies** - Results from two large phase 3 studies randomising treatment-naïve participants to either dolutegravir plus lamivudine dual therapy of triple therapy
- **Dolutegravir and pregnancy:** late breaking findings, interpretations and implications
- **ANRS PREVENIR study:** using daily and “on demand” PrEP in men who have sex with men
- **PrEP and hormone therapy:** findings relevant for transgender women
- **UK RIVER study:** results from the first randomised controlled trial of a “kick and kill” approach to HIV reservoirs
- **Prevention and treatment studies** in key countries, including results from the Namibia Population-Based HIV Impact Assessment (PHIA)
- **SEARCH study** on HIV “test-and-treat” using a multi-disease approach and streamlined care in Kenya and Uganda
- Cost-effective strategies that could halve HIV infections and deaths in Ukraine

C O M M E N T

These highlights show that IAS 2018 will be a focus for important research with implications for current treatment and prevention strategies.

This is the first time that so much material has been released so far ahead of the actual meeting.

It is essential to wait for the presentations, even when title of the presentations are less than neutral for the results of each study.

Reference

IAS press release. AIDS 2018 programme online
<http://programme.aids2018.org>

ANTIRETROVIRALS

Bictegravir/FTC/TAF (Biktarvy) approved in Europe

Simon Collins, HIV i-Base

On 25 June 2018, the European Medicines Agency (EMA) approved a new integrase inhibitor-based fixed dose combination (FDC) of bictegravir 50mg/emtricitabine 200 mg/tenofovir alafenamide 25 mg; BIC/FTC/TAF.

This is a single pill, once-daily, low milligram formulation that can be taken with or without food and has no baseline CD4 count or viral load restrictions.

The indication is for starting or switching treatment in HIV positive adults who do not have mutations associated with integrase inhibitors and although resistance testing is rarely routinely provided, this caution would be interpreted from treatment history that included viral failure with other drugs in this class.

Approval is based on results from four phase 3 studies: two in treatment-naïve participants and two switch studies in people already on stable ART with undetectable viral load. Viral efficacy was high with no cases of drug resistance to bictegravir over 48 weeks in the limited number of cases with viral failure.

No dose adjustment is required in patients with estimated creatinine clearance (CrCl) \geq 30 mL/min.

Drug interactions include magnesium/aluminium-containing antacids or iron supplements under fasted conditions. These can be avoided by taking BIC/FTC/TAF at least two hours before, or with food two hours after antacids containing magnesium and/or aluminium. BIC/FTC/TAF should be administered at least two hours before iron supplements, or taken together with food.

Main drug interactions that are contraindicated include: atazanavir, carbamazepine, ciclosporin (IV or oral use), oxcarbazepine, phenobarbital, phenytoin, rifabutin, rifapentine, or sucralfate

BIC/FTC/TAF is marketed by Gilead Sciences under the trade name Biktarvy.

For more details see the full prescribing information. [2]

Biktarvy was approved by the US FDA in February 2018. [3]

References

1. European Commission grants marketing authorization for Gilead's Biktarvy (bictegravir, emtricitabine, tenofovir alafenamide) for the treatment of HIV-1 Infection. (25 June 2018). <http://www.gilead.com/news/press-releases>
2. EMA website. Biktarvy EPAR prescribing information.. http://www.ema.europa.eu/ema/index.jsp?curl=pages/medicines/human/medicines/004449/human_med_002263.jsp&mid=WCO0b01ac058001d124
3. Bictegravir approved in the US in new integrase-inhibitor based FDC (Biktarvy). HTB February 2018). <http://i-base.info/htb/33422>

PREGNANCY

Dolutegravir: need to consider all pros and cons before switching in pregnancy

Polly Clayden, HIV i-Base

A young pregnant woman who switched from dolutegravir (DTG)-based ART, in response to the neural tube defect safety signal, experienced viral rebound on her new regimen. She needed to be switched back to DTG to achieve re-suppression and prevent vertical transmission.

This case study reported in a letter to the Journal of Virus Eradication by doctors from the Imperial College NHS Trust illustrates the complexity of managing women in early stages of pregnancy presenting on a DTG-based regimen, and the need for careful consideration when responding to new data.

A young woman taking a fixed dose combination (FDC) of DTG, lamivudine (3TC) and abacavir (ABC) visited the HIV clinic with an unplanned five-week pregnancy – according to her dates.

At the visit her results were good: CD4 count was 848 cells/mm³, CD4:CD8 ratio 0.5 and viral load <20 copies/mL.

She had been diagnosed at six years of age. She had a long history of poor adherence and in 2016 presented with disseminated mycobacterium avium intracellulare and a nadir CD4 count of 5 cells/mm³.

Despite antimicrobial therapy and excellent immune reconstitution on DTG-based ART, her recovery was complicated by bilateral hearing loss that needed augmentation.

A few days before, the increased rate of neural tube defects in infants conceived on DTG in the Botswana cohort was reported. Four out of 426 infants with these defects gave a rate 0.9% compared to an expected rate of 0.1%.

The statement from the European Medicines Agency (EMA) that followed the Botswana data recommended: "If pregnancy is confirmed in the first trimester while a woman is taking dolutegravir, switch to an alternative treatment unless there is no suitable alternative".

After discussions with the young woman and her supporter, she switched to darunavir/ritonavir (DRV/r) + ABC/3TC and received additional folic acid. The authors noted that concerns with adherence and previous resistance mutations, favoured a boosted protease inhibitor regimen over raltegravir (RAL) or efavirenz (EFV)-based ART.

At follow up, she reported difficulties with adherence, nausea and tiredness. Despite 16 months with undetectable viral load on DTG-based ART, only 21 days following the switch her viral load was 1,505,162 copies/mL and her CD4 count had dropped to 242 cells/mm³ and CD4:CD8 ratio was 0.2.

A week later she switched back to the DTG-based FDC at 10 weeks' gestation. Her CD4 count was now 161 cells/mm³ and she needed to restart Pneumocystis jirovecii pneumonia prophylaxis.

At the time the letter was published, she continued to be followed up fortnightly until she regained viral suppression.

The authors note that this case highlights the current complexities of managing women in the early stages of pregnancy presenting on DTG-based regimens. Particularly among those with a history of poor adherence and outcomes of treatment switches, that increase both pill burden and potential toxicity.

By five weeks' gestation, the foetal neural tube is already closed raising the question of benefit of switching after this time.

"When responding to new data, there is an important decision to be made, between the potential, uncertain risk of teratogenicity against the potential increased risk of in utero vertical transmission of HIV", the authors wrote.

The challenge she has now is to achieve undetectable viral load before delivery to prevent vertical transmission. This is complex for a young woman who has struggled

with adherence and now has the added anxiety that ART might harm her unborn child. "In retrospect perhaps there was no 'suitable alternative' the authors conclude.

C O M M E N T

The recommendation by EMA, as well as BHIVA, that women who conceive on DTG should switch in the first trimester seems over cautious beyond the very early window of risk of 0–28 days, when few pregnancies are confirmed.

Reference

Foster C et al. Careful consideration when responding to new data: dolutegravir and pregnancy. J Virus Erad. Published online July 2018.

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PREVENTION & TRANSMISSION

Why U=U does not apply to breastfeeding

Simon Collins, HIV i-Base

An excellent open-access review by Catriona Waitt from the University of Liverpool and colleagues in the Lancet HIV explains the differences between risks for sexual transmission and from breastfeeding, and proposes a roadmap for research.

This is important as the popular U=U campaign is specific to sexual transmission and is sometimes mistakenly interpreted as covering other transmission risks.

Most importantly, although breastfeeding is recommended by the WHO in settings when the benefits outweigh the risks of using formula milk, there are many reports of cases where HIV transmission from breastfeeding has occurred even when viral load is undetectable. These include when viral load is undetectable both in blood and breast milk.

There is currently no evidence that sexual transmission occurs when viral load is undetectable in blood.

Reference

Waitt C et al. Does U=U for breastfeeding mothers and infants? Breastfeeding by mothers on