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hiv treatment bulletin (e)

Glasgow 2022, UK statistics & guidelines (1 February 2023)

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Published by HIV i-Base

Contents cont...

Supporting Ukraine

Simon Collins, HIV i-Base

The significant challenges to support people who remain in Ukraine and those who migrated involves both international and community-based organisations.

HTB includes the following two online resources: one to donate unused medicines and the other to highlight a range of organisations that can benefit from direct financial support.

Sending unused meds to Ukraine: emergency appeal

https://i-base.info/htb/42694

The call for HIV and other meds, and medical supplies is still important. This is even though International agencies and drug manufacturers are also organising to meet this demand.

This project is led by EACS and BHIVA and supported by the UK-CAB.

Medicines need to be in original packaging, ideally in unopened packs. All HIV and related meds are acceptable, ***even if they are past the use-by date.***

All donations will be screened beforehand to make sure they are suitable.

The link page includes further details, including postal addresses in the UK, Europe and the US.

Organisations to help support Ukraine

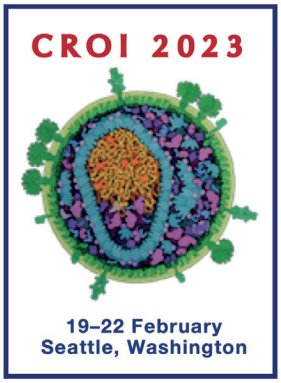
https://i-base.info/htb/42633

This page including 14 organisations that are helping people affected by the crisis in Ukraine.

This includes organisations that are supporting people living with HIV that are still in Ukraine or who have migrated to other countries.

EDITORIAL

Welcome to the first issue of HTB for 2023.



Optimistically, we look forward to the upcoming 30th CROI conference. We suggest a few conference highlights and will post early online reports during the meeting,

This issue also includes our final reports from the Glasgow conference.

The rest of this issue includes a range of journal reports that haven't generated widespread media coverage but that are nonetheless significant and important:

- That there were zero transmissions to infants when the mother was on effective ART at conception, during pregnancy and at birth. This was in a large French cohort with good access to ART.
- Additional evidence to support recycling modern NRTIs in second-line ART, even with evidence of drug resistance.
- That unexpected viral rebound and persistent low-level viraemia on previously effective ART may be due to clonal expansion rather than viral failure related to poor adherence and/or drug resistance. This phenomenon might affect 1 in 250 people on ART and is not currently covered in treatment guidelines,
- That integrase inhibitors as a class might have greater impact on recovery of CD4:CD8 ratio than either NNRTI- or PI-based ART.
- That HIV reinfection might be as common as 7%.
- That the Mosaico HIV vaccine study which was discontinued in January due to HIV infection rates of 4.1/100 person-years of follow-up in both the active and placebo arms.
- A short report on the risk of KS in people on effective ART.
- BOTOX as a potential treatment for erectile dysfunction.

We also approach the first anniversary of the war against Ukraine that most of us either feared or hoped might be over in months, at a time when Western governments are supplying military aid that might have helped an earlier outcome had it been provided earlier.

HTB still leads with information about ways to help, including donating unused medicines.

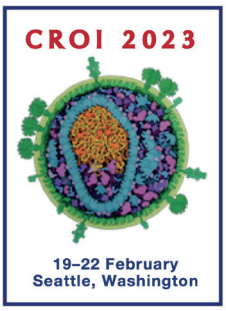
CONFERENCE REPORTS

30th Conference on Retroviruses and Opportunistic Infection (CROI 2023)

19–23 February 2022, Seattle and virtual

Simon Collins, HIV i-Base

Introduction



This year the annual Conference on Retroviruses and Opportunistic Infections (CROI) will be held in Seattle and as a virtual meeting.

This will be the 30th meeting for a conference that was initially set up in response to the IAS decision to no longer hold the World AIDS Conference in the US due to the visa ban against people living with HIV.

However, CROI's focus on basic and clinical science meant it rapidly became the most important annual scientific meeting, limiting the formal engagement of pharmaceutical companies (even as attendees), and developing a training and scholarship programme, including for community participants.

Although limited access to the programme is available in the week before CROI, access to abstracts is restricted until the day before the meeting starts. The abstract book will become open access from 24 February.

https://www.croiconference.org/preliminary-agenda

However, it isn't currently clear how-long the conference will remain restricted to registered delegates before becoming available online. Although before COIVD this used to at the end of the conference, the challenges of running a hybrid meeting are likely to involve a delay of at least a month before webcasts become open-access.

This year, 1006 have been accepted, 347 of which are late-breakers. Of these, 115 will be oral presentations and the rest will be posters.

Based on the programme outline, the following topics are likely to contribute to the meetings highlights.

- New drugs, formulations and pipeline compounds are always presented at CROI. This is likely to include further updates on long-acting lenacapavir (for for treatment and PrEP), islatravir as trestment and long-acting bNAbs (10-1074LS, 3BNC117-LS and N6-LS).
- New studies will be presented on injectable ART.
- Detailed results from the MOSAICO HIV vaccine study, that was discontinued in January 2023 due to lack of efficacy and implications for future vaccine research.
- PrEP – both oral and injectable – will include a focus on equitable access and distribution. Several studies are likely to report on using long-acting injections as PrEP.
- SARS-2 is likely to still feature in the programme, often in related to HIV, both over virology and epidemiology, and also to cover long-COVID.
- Mpox is also likely to feature even though the 2022 outbreak is now largely resolved, including how to limit future outbreaks.
- Advances in cure-related research including basic science approaches to the viral reservoir.
- Specialist sessions on women's health, pregnancy and paediatric care.
- Adherence in the era of modern ART.
- The Scott M. Hammer workshops for new investigators and trainees held every year on the say before CROI, provides state-of-the-art lectures on key areas of HIV treatment, signposting to related studies that will be presented in the upcoming main conference.

Early reports from the conference will be posted to the i-Base website as they become available.

CONFERENCE REPORTS

Glasgow HIV Congress (2022)

23–26 October 2022, Glasgow and virtual

Simon Collins, HIV i-Base

Introduction

This year the HIV Glasgow Congress was held from 23–26 October 2022, overcoming the difficult challenges of being both an in-person and virtual meeting, at a time when organising medical conferences is especially difficult.

The planning and work involved to enable such meetings is often under-appreciated (and under-acknowledged) especially as they are now vulnerable to underlying shifts in COVID dynamics that are impossible to predict months beforehand.

And yet these meetings play a vital role in connecting us to the latest research and in generating new ideas and projects that only come from face-to-face conversations. As a comment, over recent years, an increasing number of delegates use their annual leave to attend and are self-financing.
The progamme is available online at the conference website:

https://www.hivglasgow.org

The abstract book is available as a supplement to the Journal of the IAS.

https://onlinelibrary.wiley.com/doi/10.1002/jia2.26009

Our conference coverage continues with the following reports are in this issue of HTB.

- Pipeline studies at Glasgow 2022
- Doravirine studies at Glasgow 2022
- Long-acting cabotegravir/rilpivirine: Adverse events, implementation and PROMs
- Glasgow community statement on HIV and ageing

GLASGOW 2022: ANTIRETROVIRALS

Pipeline studies at Glasgow 2022

Kirk Taylor, HIV i-Base

Glasgow 2022 included new results on two pipeline compounds: N6LS and GSK254.

Phase 2 results from the BANNER study support antiviral activity of N6LS bNAbs in ART-naïve people living with HIV. Viral nadir occurred after 16 days, and post-infusion and viral rebound occurred after a median of 35 days. [1]

A novel maturation inhibitor (GSK3640254) has been associated with QT prolongation in pre-clinical models. New data indicate that plasma levels below 3 µg/mL do not significantly alter QT interval in HIV negative participants. [2]

Broadly neutralising antibodies (bNAbs)

ViiV Healthcare are developing VH3810109 (N6LS) as a bNAb therapy that targets the CD4 binding site of the HIV envelope protein. [1]

BANNER is an open-label, single dose phase 2 study evaluating the antiviral efficacy of N6LS monotherapy in treatment naïve people living with HIV.

Participants were randomised to receive either a 40 mg/kg (group 1, n=8) or 4 mg/kg (group 2, n=6) infusion of N6LS. Whilst baseline CD4 counts and BMI were comparable between groups, baseline viral load was higher in group 2 [30,833 copies/mL (IQR: 5,938 to 104,585) vs 12,259 copies/mL (IQR: 1,351 to 173,710)].

A single bNAb infusion decreased viral load by a median of 1.72 log10 copies/mL (IQR: -0.60 to -2.60) for 13/14 participants. Median response time was 16 days (IQR: 5 to 21) and viral rebound was observed after 35 days (range: 12 to 78). All drug-related adverse events (n=9) were ≤grade 2.

Participants were recruited from the USA (n=6), Canada (n=1) and Argentina (n=7) and were male (n=13/14), Black (n=3), White (n=11) and Latinx (n=10). Median age was 30.5 years (IQR: 24 to 51) and 28.0 years (IQR: 18 to 54) in groups 1 and 2, respectively.

Maturation inhibitor GSK3640254

GSK are developing a novel maturation inhibitor (GSK3640254) for HIV treatment. Pre-clinical testing identified QT prolongation following administration of a supramaximal dose of 17 mg/kg (Cmax = 7,960 ng/mL). Palpitations were also reported in a HIV negative participant that received a single 200 mg oral dose.

A two-part study was conducted to evaluate cardiac effects of the maturation inhibitor in HIV negative participants. [2]

Participants were female (30%), Black (40%) and mean age was 34 years. In part one 8 participants were randomised (3:1) to 500 mg GSK3640254 or placebo for 7 days. For part two, 42 participants were randomised to 12 treatment sequences to compare intended therapeutic (100 mg) and supratherapeutic doses (500 mg) of maturation inhibitor, a single dose of moxifloxacin (400mg) and placebo control.

Cmax levels of the maturation inhibitor were 830 ng/mL (95% CI: 738 to 934 ng/mL) for a 100 mg dose and 4,260 ng/mL (95% CI: 3,750 to 4,840 ng/mL) following a 500 mg dose, respectively. A dose-dependent increase in QT interval was observed. QT prolongation is predicted to be <10 ms when plasma levels of the maturation inhibitor are below 3,070 ng/mL. Participants that received 100 mg doses had QT prolongation of 2.72 ms (90% CI: 2.04 to 3.39 ms). Low grade (≤1) adverse events were reported by participants in part one (38%) and part two (43%). Phase 2 trials are continuing with doses that are predicted to not significantly impact QT interval (100 to 200 mg).

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Please notes that due to website problems on the conference website, links below are to NATAP.org.

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Doravirine studies at Glasgow 2022

Kirk Taylor, HIV i-Base

Glasgow 2022 included several studies on antivirals for the treatment and prevention of HIV.

Studies included updates on metabolic and safety data for doravirine (DOR) and real-world data on DOR use. In addition, a novel maturation inhibitor, phase 2 data on a broadly neutralising antibody (bNAb) therapy and long-acting PrEP were discussed.

Phase 3 studies of DOR report weight gain of ≥5% for 106 participants (23%). [1] Increased risk was noted for people living with HIV that had previously used an NRTI or PI.

An Italian study of the metabolic and safety profile of DOR noted reduced levels of ALT for people on DOR vs RPV. [2]

Real-world data on the DOR use and its efficacy in a UK study reported 94% retention and 95% viral suppression at six months. [3]

Metabolic factors and use of doravirine in real-world settings

Weight gain has been reported on several trials of DOR-containing regimens. Median weight gains for DRIVE-FORWARD, DRIVE-AHEAD and DRIVE-SHIFT were +1.9 kg, +2.0 kg and +1.4 kg, respectively. [1] The majority of participants (70%) on phase 3 studies experienced weight gain of <5%. However, 23% of participants (n=106) enrolled on DRIVE-FORWARD and DRIVE-AHEAD had ≥5% weight gain. Increased risk of weight gain was noted for females and those with previous PI or NRTI use. Further data are required to understand the mechanisms and demographics associated with weight gain on DOR-containing regimens.

A further study evaluated the metabolic and safety profile associated with switch to DOR vs RPV in people living with HIV. [2] Participants were female (29%), Caucasian (91%) and median age was 53.6 ± 12.4 years for those on DOR (n=128) and 42.3 ± 9.3 years for those on RPV (n=331). Lipid levels were reduced for both groups of participants but liver enzymes (ALT; alanine transaminase) were lower for people that switched to DOR.

The DRIVE-REAL cohort was established to evaluate the real-world implementation and efficacy of DOR-containing regimens. [3] Participants (n=249) were Black (14%), Asian (2%) and 77% were aged ≥40. Two thirds of participants had co-morbidities that included depression (26%), hyperlipidaemia (19%), anxiety (13%) and hypertension (12%).

At six months, 94% of participants continued to use DOR and 95% had undetectable viral load (<50 copies/mL). These data represent the largest real-world assessment of DOR use in the UK and reported efficacy is comparable to data from phase 3 studies.

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Long-acting cabotegravir/rilpivirine: Adverse events, implementation and PROMs

Kirk Taylor, HIV i-Base

HIV Drug Therapy Glasgow included several presentations on long-acting cabotegravir plus rilpivirine formulations (CAB+RPV-LA). Focus was given to adverse events, implementation and participant-reported outcomes (PROMs).

Confirmed virologic failures (CVF) on phase 3 CAB+RPV-LA trials were evaluated and baseline rilpivirine resistance, HIV subtype A6/A1, BMI >30 kg/m2 and reduced CAB levels at week 4 were identified as risk factors. [1] Frequency of viral blips on CAB+RPV-LA were comparable to those observed on oral therapy and were not predictive of CVF. [2]

Neuropsychiatric adverse events (NPAEs) were reported for 9% of participants on CAB+RPV-LA trials and the majority were classified as low grade (≤2). [3]

A survey of healthcare workers reported 'very' or 'extremely positive' views regarding implementation and delivery of long-acting antiretroviral therapy. [4]

PROMs from phase 3 and real-world implementation studies consistently highlighted benefits of long-acting formulations for HIV therapy. [5-7]

HPTN 083 reports efficacy of long-acting cabotegravir (CAB-LA) for high-risk gay men and transgender women. A 66% reduction of new HIV diagnoses was reported for those on CAB-LA. [8]

Adverse events

Confirmed virologic failures (CVF) on CAB+RPV-LA therapy through week 48 of phase 3 trials were reported

for 1.4% of participants (n=23). [1] CVF risk increased for participants with ≥2 baseline factors (RPV resistance mutations, BMI >30 kg/m2 or HIV subtype A6/A1).

Participant data were pooled from FLAIR (124 weeks), ATLAS (96 weeks) and ATLAS-2M (152 weeks) for post-hoc analysis of risk factors. This analysis highlighted reduced week 4 CAB levels as an additional risk factor for CVF.

A second study reported results from an exploratory analysis of viral blips using RNA samples collected during FLAIR and ATLAS-2M. [2] Blips occurred at similar frequencies for CAB+RPV-LA QM (12%), Q2M (8%) and QD oral therapy (17%). Snapshot analyses at weeks 96 (FLAIR) and 152 (ATLAS-2M) reported undetectable viral load for >90% of participants that had viral blips during the study period. Of the 17 reported CVFs on long-acting therapy, only one participant also experienced a viral blip during the trial. These findings suggest that viral blips are not predictive of CVF.

NPAEs (e.g. headache, dizziness, depression and anxiety) have been reported for people taking CAB+RPV-LA. Post-hoc analysis of NPAEs that occurred on phase 3 studies (ATLAS, ATLAS-2M and FLAIR) was conducted to evaluate trends. [3] The frequency of drug-related NPAEs was 9% (n=111) for participants that received long-acting formulations. 96% of NPAEs were ≤grade 2 and no drug-related grade 4 or 5 events were recorded. NPAEs occurred infrequently and events were mostly reported between weeks 4 to 12. Headache and dizziness tended to resolve within a week, whilst sleep and psychiatric disorders persisted for significantly longer.

Participants with a history of psychiatric disorders or substance abuse were more likely to experience NPAEs. There were no serious drug-related NPAEs were reported across the study period. Participants were female (26%), Black (19%) and median age was 40 years (IQR 18 to 83).

Implementation and PROMs

Healthcare workers were surveyed to ascertain perceptions of CAB+RPV-LA formulations and inform optimal implementation strategies. [4] Respondents were interviewed after a month (n=70) and again at one year (n=62). Most respondents were nurses (41%) and doctors (37%). Identified barriers included perceived risk of resistance (35%) and viral rebound (30%), lack of staff to administer injections (35%).

Attitudes to implementation of CAB+RPV-LA were 'very' or 'extremely' positive after one year (76%). Side effects and being unable to administer injections at home were perceived as implementation barriers. 68% of healthcare providers wanted more information prior to trial initiation, but were positive about the benefits of long-acting formulations.

Participants on ATLAS-2M were surveyed to evaluate experiences of injections, chronic therapy and treatment satisfaction. [5] Participants were female (27%), White (73%), median age was 42 years (IQR: 34 to 50) and 37% had previously received CAB+RPV-LA on the ATLAS trial.

At three years, ISRs were rated as 'totally' or 'very acceptable' for 78% of participants. Treatment acceptance was ranked >80 on a scale of 'totally unacceptable' (0) to 'totally acceptable' (100). Treatment satisfaction was ranked from 0 to 66 and mean scores were >55 for participants on QM and Q2M regimens. Participants were satisfied with the convenience and flexibility of treatment but side effects, discomfort and pain scored negatively.

Participants that missed at least one dose and received oral therapy during the trial period (n=70) were included in a sub-analysis. 88% of people in this group indicated a preference for long-acting therapies over oral regimens. These data may explain high retention and low discontinuation rates observed in ATLAS-2M.

European participants on the CARISEL study (n=430) were surveyed to gauge their opinions on CAB+RPV-LA therapy. [6] Responses were scored on a five-point scale of 'completely disagree' (1) to 'completely agree' (5) at months 1, 4 and 12. Acceptability and feasibility scores were ≥4.5 at month 1 and moderately increased over time. Treatment satisfaction scores dipped at month 1 (-0.73, 95% CI -1.37 to -0.10) but improved to ≥+2.84 at later timepoints. Most participants (91%) were positive about long-acting therapy at one year. Participants spent an average of 1 hour in the clinic and 75% agreed that this was acceptable.

Whilst 31% of participants reported no challenges with LA therapy, negatives included ISRs (56%), missing work (13%) and travel schedules (9%). Not needing to carry medication, convenience and reduced stigma contributed to 99% of participants reporting a preference for LA formulations.

Real-world data on the efficacy and adherence to Q2M CAB+RPV-LA were collected through the German CARLOS cohort study. [7] Participants (n=236) were male (95%) and median age was 43 years (IQR: 36 to 50). Baseline risk factors for CVF were recorded for 24 people and one person had 2 known risk factors. The primary reason for switch to long-acting therapy was participant request (92%).

At six months, 89.5% of participants had undetectable viral load, 2% had ≥50 copies/mL and there was one instance of CVF. The majority of drug-related AEs were low grade with a single grade 3 event of worsening anxiety. ISRs were common with 218 reports across 866 injections. Injections were delivered within the dosing widow for >97% of participants. Treatment satisfaction scores were 60.6 at six months.

Cabotegravir as long-acting PrEP

HPTN 083 is a Phase 2b/3 randomised controlled trial of PrEP formulations for gay men and transgender women at increased risk of HIV transmission risk. [8]

Participants were recruited across 43 sites from 7 countries. CAB-LA was evaluated as an alternative to oral TDF/FTC PrEP.

A 66% reduction of new HIV diagnoses were observed for those receiving CAB-LA vs TDF/FTC. There were 52 breakthrough cases of HIV that occurred in the first year after unblinding. Of these, diagnoses were more common on TDF/FTC (n=34) than for CAB-LA (n=18).

PK data indicated that CAB levels were mostly within range but one participant had rapid CAB clearance with unknown cause. For three cases, INSTI-associated resistance mutations were observed. CAB continues to show efficacy as a long-acting alternative to oral PrEP.

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Glasgow community statement on HIV and ageing

Simon Collins, HIV i-Base

Many HIV conferences provide a platform for a community statement focused on an aspect of care, often widely endorsed by other organisations.

For the Glasgow 2022 conference, this included a statement on issues affecting people living with HIV as we age that had developed at the IAS conference in the Summer.

In many Western countries, more than half of people living with HIV are already older than 50.

The statement, formulated as a short manifesto, calls urgently for new collaborations to ensure equitable health outcomes for ageing and older people living with HIV, for HIV care, quality or life and empowerment.

Reference

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ANTIRETROVIRALS

Lenacapavir approved in the US for multidrug resistant HIV

Simon Collins, HIV i-Base

On 22 December, the US FDA approved the capsid inhibitor lenacapavir for multidrug resistant HIV. [1]

Lenacapavir is a long-acting drug given by subcutaneous injection.

It was approved in the EU by the EMA in August 2022, [2]

References

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More evidence for recycling tenofovir in second-line ART with dolutegravir: 72-week results from ARTIST study

Polly Clayden, HIV i-Base

Recycling NRTIs with dolutegravir (DTG) was effective for most participants up to 72 weeks in the ARTIST study – conducted in Khayelitsha, South Africa. These findings were published ahead of print in JAIDS, January 2023. [1]

In this study the majority of participants with viraemia did not develop virologic failure and later suppressed with extra adherence counselling or continued their treatment with low-level viraemia.

ARTIST (AntiRetroviral Therapy In Second-line: investigating Tenofovir-lamivudine-dolutegravir trial) is a single arm, prospective study, which switched 62 adults with two viral load test results >1000 copies/mL from first-line tenofovir disoproxil fumarate (TDF)/lamivudine or emtricitabine (XTC) and an NNRTI to TDF/XTC/DTG (TLD).

The authors previously reported week 24 results. [2]

At this timepoint, 85% participants (51/60) achieved viral load <50 copies/mL (primary endpoint), despite having baseline resistance to either or both TDF and XTC (88%, 48/54). No one had virologic failure and there was no detectable integrase inhibitor resistance in the one participant who met the criteria for resistance testing.

Median (95%CI) rates of virologic suppression <50 copies/mL were 86% (74 to 93%), 74% (61 to 84%) and 75% (63 to 86%) at week 24, 48 and 72 respectively. Eighty-nine per cent of participants (50/56) were resistant to TDF and/or XTC at baseline. No participants developed integrase inhibitor resistance.

A post hoc analysis of the 20 participants with detectable viral load at week 24 and/or 48 revealed: two had virologic failure, one switched ART (adverse event), two were lost to follow up, one missed the clinic visit, one transferred, nine resuppressed <50 copies/mL with enhanced adherence counselling and four remained viraemic (three with <200 copies/mL) at week 72.

The authors reported no integrase-inhibitor resistance despite low-level viraemia in a minority of participants.

C O M M E N T

Recycling TDF after failure of NNRTI-based first-line ART, as in ARTIST, is simpler and more tolerable than DTG plus switching the NRTI backbone to AZT/3TC (as recommended in current WHO guidelines).

Two larger randomised studies have produced similar results. [4,5,6]

The NADIA study randomised participants failing first-line ART of NNRTI/TDF/XTC to darunavir/ritonavir DRV/r or DTG, and

secondly (in a factorial design) to TDF or AZT plus 3TC. This showed DTG to be non-inferior to DRV/r at 48 and 96 weeks, and recycling TDF was non-inferior at week 48 and superior at week 96.

In the VISEND trial, TLD or a regimen of DTG with tenofovir alafenamide (TAF) and FTC, were both superior to boosted protease inhibitor regimens with AZT and 3TC at week 48.

Recent findings from a meta-analysis of four African first- and second-line studies (including VISEND) showed that people receiving DTG-based ART were significantly more likely to re-suppress after initial viraemia compared to those on efavirenz (EFV)- or PI-based regimens, with enhanced adherence counselling. [7]

Results from D2FT (another second-line ART optimisation study) are expected at CROI 2023. This will give us further information on DTG and DRV/r, as well as recycling TDF. [8]

Putting all this together suggests WHO recommendations need to revisit:

- Switching NRTIs in second-line (recycled TDF was notably superior to switching to AZT in NADIA at week 96).
- Increased adherence counselling and re-suppression with DTG.
- DRV/r as alternative for people that cannot take DTG and preferred PI (NADIA makes a good case and it will be interesting to look at this once D2FT results are available).

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Low level viral load on effective ART can be linked to clonal expansion of reservoir: not affected by modifying ART

Simon Collins, HIV i-Base

Researchers investigating new and persistently detectable viral load in four people with a previous history of suppressive ART report that this is caused by clonal expansion of reservoir cells. All cases included people having excellent adherence and no evidence of drug resistance. [1]

These cases had many years on suppressive ART and became a clinical challenge due to a subsequent unexplained extended period of detectable viral load that was unresponsive to treatment changes.

Viral load increased to levels where guidelines currently recommend changing treatment,

The four participants (P1–4) had been living with HIV for more than 15 years (range 15-32 years) and had been undetectable on long-term ART from 7 to 27 years, with good CD4 counts. Treatment changes, including intensification had not been successful.

P1 had persistently detectable viremia for 4.3 years, with a median plasma viral load of 80 copies/mL (range 37-156).

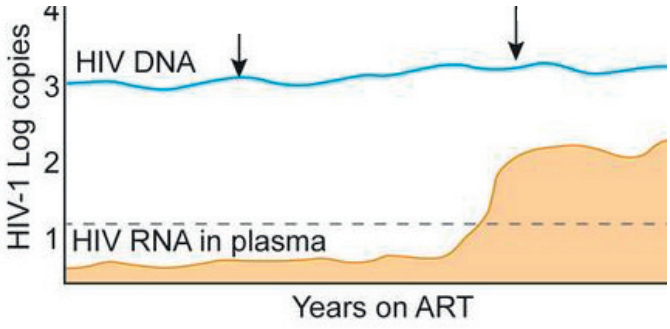
P2 had intermittent periods of detectable viremia for more than 10 years, with a median of 75 copies/mL

(range <20-300).

P3 had persistently detectable viremia for 4.6 years, with a median of 123 copies/mL (range 26-857).

P4 was the most extreme example, with a median viral load of 2979 copies/mL (range 1145-5138) for almost 2 years.

The paper also reports new findings that lin cause of viraemia to c iruses with 5'-Leader defects.



The results have important implications for clinical management of viral rebound that are not currently covered in HIV treatment guidelines that recommend modifying ART in an attempt to resuppress viral load.

As well as not being effective, this risk undermining the relationship of trust between people living with HIV and their doctor, if the default assumption is that this is caused by poor adherence.

The study concluded:

(i) That in these cases, treatment modification including intensification, as currently recommended in treatment guidelines will not have any impact on resupressing viral load.

(ii) That the lack of viral evolution in these cases includes the reassurance that drug resistance is not a concern.

(iii) Also recovered virus was inducible it produced non-infectious virions containing viral RNA but lacking envelope.

(iv) That without an easy way to test residual low level viral load, it isn't possible to identify such cases, which might be as common as 1 in 250 people on otherwise stable ART.

The study was published as an online open access paper in the Journal of Clinical Investigation in January.

C O M M E N T

Similar cases presented at CROI 2019 were restricted to levels of viraemia that were between 50 to 200 copies/mL when treatment changes would not necessarily have been recommended. [2, 3, 4]

This paper is notable for including higher levels of viraemia >1000 copies/mL when treatment is definitely recommended to be changed.

Low level viral load (>50–1000 copies/mL) is a cause of significant stress and anxiety to people living with HIV who expect their viral load to be undetectable (<50 copies/mL) for both their own health and as protection for their partners.

This highlights the need for an easy test to identify the source of rebound viral load.

Without this test, it might be possible to use lack of impact from ART intensification as a way to return to previous ART, without continued worry about low level viraemia.

This is not an easy situation and needs further research.

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Integrase inhibitors associated with higher increases in CD4:CD8 ratio than PI- or NNRTI-based ART

Simon Collins, HIV i-Base

A retrospective analysis of 3,907 participants starting or switching ART in an observational Canadian cohort study between 2006 – 2017 reported higher CD4:CD8 ratio responses compared to PI- or NNRTI-based ART.

The study included used dual NRTIs in all combinations with the third drug being an NNRTI, PI, or INSTI in 25%, 51% and 24% of participants, respectively. The INSTIs in the analysis were raltegravir (38%), elvitegravir (19%) and dolutegravir (43%).

The analysis adjusted for all standard demographic and HIV-related variables, including calendar year and previous treatment history in people switching ART.

After 13,640 person-years of follow-up, 1790/3907 participants had a CD4:CD8 ration >1.0 after a median of 4.4 years (IQR: 2.1 to 7.4). Overall, the median (IQR) follow-up was 5.8 years (3.1 to 8.4), 4.5 years (2.0 to 7.4) and 2.9 years (1.7 to 5.3) for NNRTI, PI and INSTI groups, respectively.

The adjusted hazard ratio (HR) for the achieving a CD4/CD8 ratio >1.0 compared to INSTI-based ART was 0.56 (95%CI: 0.48 to 0.65) for NNRTI- and 0.41 (95% CI: 0.35 to 0.47) for PI-based ART.

The results were similar using the CD4:CD8 ratio cut-offs of 0.3, 0.5, 0.8 and 1.2. Results were also similar when the analysis was restricted to either treatment-naive or treatment-experienced participants.

The NNRTI effect compared to PIs was driven by a decrease in CD8 count (p=0.025) as CD4 changes were similar for NNRTIs and PIs (p=0.702).

Overall, the positive difference associated with INSTI-based ART was driven by increases in CD4 count.

The results were published ahead-of-print in Clinical Infectious Diseases in February 2023.

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PREGNANCY

Zero transmission in France for mothers on ART from conception with undetectable viral load at delivery

Polly Clayden, HIV i-Base

In France – a setting with free access to ART, monthly viral load testing, infant ART prophylaxis, and formula feeding – suppressive ART, started before pregnancy, reduced vertical HIV transmission to almost zero.

These findings were reported ahead of print in Clinical Infectious Diseases, August 2022.

The analysis included 14,630 women living with HIV, delivering from 2000–2017 at facilities participating in the national prospective French Perinatal Cohort (ANRS-EPF). At least 95% of pregnant women at each participating centre are included in this cohort (exclusions are those less than 18 years and voluntary).

Vertical transmission was analysed according to time period, timing of ART initiation, maternal viral load and gestational age at birth. No infants were breastfed and all received neonatal prophylaxis.

Women in the last time period (2011–2017) were older, more often from sub-Saharan Africa, and less likely to be diagnosed with HIV during the current pregnancy than women enrolled during 2000–2010.

The proportion of women receiving ART at conception increased: from 28.3% (1434/5067) in 2000–2005 to 46.3% (2055/4441) in 2006–2010 and to 65.8% (3117/4738) in 2011–2017, p<0.001.

Transmission rates dropped steadily over the three time periods: from 1.1% in 2000–2005 (58/5123), to 0.7% in 2006–2010 (30/4600) and 0.2% in 2011–2017 (10/4907), p<0.001.

When the analysis was restricted to the 6316/14,630 (43%) women on ART at conception, transmission decreased from 0.42% (6/1434) in 2000–2005 to 0.03% (1/3117) in 2011–2017, p=0.007.

For women on ART at conception, if maternal viral load was undetectable near delivery, there were no transmissions whatever the ART regimen (95% CI 0 to 0.07; 0/5482). See Table 1.

For those starting ART during pregnancy and with undetectable viral load near delivery, transmission was 0.57% (95% CI 0.37 to 0.83; 26/4596).

And for women treated at conception but with detectable viral load near delivery, transmission was 1.08% (95% CI 0.49 to 2.04; 9/834).

Irrespective when ART was started, the transmission rate was higher with severe preterm birth (<32 weeks' gestation) 2.06% (95% CI, 0.83 to 4.21; 7/339) than moderate preterm (32–36 weeks' gestation) 1.34% (95% CI, 0.86 to 1.98; 24/1796) than in term births 0.54% (95% CI 42 to 0.68; 67/12 465), p< 0.001.

The authors noted that this association was not found in the last period. And it was reduced although still significant when the analysis was restricted to women on ART at conception, across the three time periods.

There were 10 cases of vertical transmission 2011–2017.

- Only one woman was on ART at conception. She had herself been perinatally infected at birth but was poorly adherent to ART and her viral load was >400 copies/mL during pregnancy.
- One woman received no ART during pregnancy because of difficulties in antenatal care.
- The remaining women started ART during pregnancy. In two cases this was very late (>37 weeks' gestation) and the other five women started ART between 9 and 22 weeks' gestation. Two did not achieve viral suppression. There was only one transmission with an undetectable viral load at delivery. No breastfeeding was reported.

The authors commented that the main finding from this study was confirmation of zero HIV transmission among women who start ART before conception and have an undetectable viral load at delivery, with formula feeding and routine neonatal prophylaxis.

They also suggested that preconception maternal ART and undetectable viral load at delivery may mitigate the effect of preterm birth on vertical transmission.

Table 1: Risk of transmission by timing of ART and VL near delivery (2000–2017)

ART and VL at delivery	n (%)	95%CI
On ART at conception and undetectable VL	0/5482 (0%)	0 to 0.07
Start ART during pregnancy and undetectable VL	26/4596 (0.57%)	0.37 to 0.83
On ART at conception, detectable VL	9/834 (1.08%)	0.49 to 2.04

COMMENT

The overall vertical transmission rate during the most recent period in this cohort was extremely low (0.2%). The authors noted that this is lower than recently reported in other high-income countries, which range from 0.46% to 1.6%.

In the UK and Ireland, the steady decline across time periods is similar to these results.

As guidelines in high-income countries become more permissive about breastfeeding among women who fulfil other criteria associated with no transmission – mainly early ART start, undetectable viral load with regular monitoring – it will be important to see whether these results remain similar.

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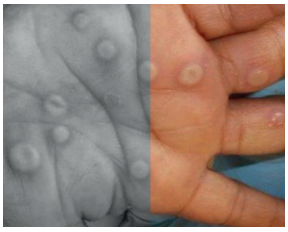
COMPLICATIONS: MONKEYPOX



Update on mpox: sleeping or hiding?

Simon Collins, HIV i-Base

For the first time in six months, this issue of HTB does not lead with a special report on named mpox, previously monkeypox.

From the first cases reported in the UK in May 2022, this normally rare infection rapidly spread to more than 100 non endemic countries, generating more than 85,000 cases and a global health crisis. Then, by the end of the year, numbers dramatically dropped, even in countries with limited access to vaccines.

Based on the recent WHO report, between 2 – 15 January 2023, 11 countries reported an increase in 7-day cases, with Mexico most affected, but still with only 59 cases. Importantly, 78 previously affected countries have not documented any new cases for over three weeks, the maximum incubation period. [1]

The most affected countries were the US (29,787 cases), Brazil (10,625 cases), Spain (7,505 cases), France (4,114 cases), Colombia (4,049 cases), the UK (3,730 cases), Germany (3,700 cases), Peru (3,698 cases), Mexico (3,696 cases), and Canada (1,460 cases).

Although sometimes mild, many cases involved considerable discomfort and pain and extremely severe cases, including necrosis, amputation, intensive care and approximately 30 deaths in the US. [2]

Mpox disproportionately affected people living with HIV, likely due to social and behavioural patterns that increased the risk of exposure than people on effective ART having a higher susceptibility.

But many of the most serious cases were in people living with HIV, especially in those with low CD4 counts and detectable viral load, if not on ART, and the focus of an MMWR alert. [2]

This suggests that people not yet diagnosed might be at the highest risk, and late diagnosis remains a complex problem in nearly every country, reported in 40% or more of new diagnoses. [3]

The risk of future outbreaks during 2023 is impossible to predict because of significant gaps in our understanding of the 2022 epidemic.

Vaccine programmes only provided partial protection on a population level and vaccine efficacy was barely tested as case numbers were already falling due to early behavioural changes. Part of the decline is also being attributed to natural immune responses in those who were exposed but it is unclear how long either natural or vaccine induced immunity will last, with some studies suggesting that boosters might be needed within 6–24 months.

Unfortunately, mpox is likely to still continue in some countries, especially in central Africa where there is still no access to treatment or vaccines. There is also the potential for local outbreaks to occur, perhaps linked to international travel.

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HIV COMPLICATIONS

Superinfection detected in up to 7% of people in Swiss HIV cohort Study

Simon Collins, HIV i-Base

Researchers from the Swiss HIV Cohort Study have reported that evidence of HIV reinfection – sometimes called superinfection – was found in a longitudinal study in up to 7% of people living with HIV. [1]

The group developed a molecular epidemiology screening, using over 22,000 samples of HIV sequences from 4575 participants, and identified 325 potential cases of reinfection.

Of these, 128/325 were tested by near-full-length viral genome sequencing of biobanked plasma samples: 52/128 were confirmed, 15 were not confirmed, and 61 did not include the relevant time points for further evaluation.

HIV superinfection is generally only reported when drug resistance of the reinfecting strain causes viral rebound in someone who was previously undetectable and who has good adherence. Such cases have been reported for over 20 years, complicating clinical management due to reduced treatment options. [2]

This highly complex area of research is complicated by the difficulty of distinguishing reinfection from initial coinfections and needing new infections to out-compete the initial infection during the sampling window period. Taken together, reinfection is likely to be underestimated in all studies.

Other than when drug resistance is involved, multiple HIV infections has not been linked to poorer clinical outcomes, although this still hasn't been formally studied in prospective longitudinal studies.

This is important. Poorer clinical outcomes have also not been reported for people who were initially infected with multiple compared to a single founder virus,

C O M M E N T

This study shows that HIV reinfection is common and likely underestimated.

However, reinfection itself has not be linked to poorer clinical outcomes, unless the second infection is with a drug-resistant strain.

This broader context of this theoretical risk depends on the setting. For example, whether both partners are using ART and are already likely to have a similar resistance profile, and, when this information is unknowbm in the population levels of drug resistance,

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Potential to use BOTOX for erectile dysfunction

Simon Collins, HIV i-Base

Although it includes limited evidence, this interesting study reported positive outcomes from using BOTOX as a potential treatment for erectile dysfunction.

This was a prospective randomised double-blind placebo-controlled trial randomised 176 participants to a single injections of one of two doses of BOTOX or to a control group receiving saline injections.

Improvements were reported in all scores for the active vs placebo groups at 3 months, which significantly

favoured the higher dose group after 6 months (p <0.01).

Please see the free full text links and accompanying editorial for full details.

References

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Cases of Kaposi's Sarcoma (KS) in people on effective ART

Simon Collins, HIV i-Base

A paper in the Annals of Internal Medicine includes two recent cases and a literature review of confirmed KS in people with well-controlled HIV on ART.

Both cases had multiple cutaneous discolored plaques and ulceration with normal CD4 counts and undetectable viral load for both HIV and human herpesvirus-8 at the time of diagnosis.

It recommended with screening new skin lesions for KS regardless of the CD4 count or adherence to ART.

Reference

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Shorter course of less-intensive treatment for visceral leishmaniasis

Simon Collins, HIV i-Base

Results from an international study published in CID report better outcomes for treating visceral leishmaniasis with a daily combination of paromomycin and miltefosine for 14 days compared to twice-daily injections of sodium stibogluconate and paromomycin for 17 days,

The reduce course had fewer daily injections and was also safer.

These findings have already been included in WHO guidelines and other information related to coinfection of HIV and visceral leishmaniasis. [2, 3]

The study was supported by both MSF and DNDi.

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HIV PREVENTION

Model for nurse-led PrEP clinic in London: 20,000 clients in 2021

Simon Collins, HIV i-Base

A letter published as open access online in the Lancet includes details of how the UK's largest PrEP clinic is run as a nurse-led clinic, with 90% of the 40,950 consultations for PrEP being carried out by nurses.

It also stresses that this is a central part of the service and that this level of service could not have been developed and run if it only used doctors.

Of the 22,938 individuals seen:

- 98% were men and 2% were women (only binary categories were used),
- 70% were white ethnicity, 6% mixed, 4% Black and 12% other.
- 84% resident in London.
- Age distribution was: 0.1% (<18), 12% (18–25), 44% (25–34), 26% (35–44), 11% (45-54) and 5% (>55).

The group are committed to broadening access to PrEP to people who are still underrepresented including women at risk of HIV, trans people, migrant populations, and minoritised ethnic groups who might not have attended sexual-health services previously.

One comment however, and it is important, is that data was not produced on how this service is used (or not) by people who are transgender and non-binary even though they are a key population. This is especially difficult as Dean Street has provided specific transgender services for many years. Data from 2021 however, will include this level of detail.

It would be good to know more details about the upper age range but full details from this important group are likely to be reported in full later in the year.

Reference

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HIV VACCINE RESEARCH

Phase 3 Mosaico HIV vaccine efficacy trial stopped early due to lack of benefit

Richard Jefferys, TAG

On 18 January 2023, disappointing news was announced about the only ongoing phase 3 HIV vaccine efficacy trial, Mosaico (HVTN 706/HPX3002). [1]

A scheduled interim analysis of the results by the Data Safety Monitoring Board (DSMB) found that the vaccines were safe but there was no prospect of demonstrating protective efficacy against acquisition of HIV infection in the study population, prompting discontinuation.

No details are yet available but press releases were issued by AVAC, the HIV Vaccine Trials Network (HVTN),

and the vaccine manufacturer Janssen. [2, 3, 4]

HVTN and AVAC will host a global webinar on January 25, to provide additional information. [5]

Mosaico had successfully recruited around 3,900 cisgender men and transgender people who have sex with cisgender men and/or transgender people at sites in Argentina, Brazil, Italy, Mexico, Peru, Poland, Puerto Rico, Spain, and the USA. There has been widespread praise for the scale and diligence of consultations with participating communities, which contributed significantly to the design and conduct of the study.

Of particular importance, Mosaico pioneered a new approach to HIV vaccine trials by recruiting people at risk of HIV acquisition who'd chosen not to use pre-exposure prophylaxis (PrEP). Flexibility was built into the design to ensure any participants who later decided to start PrEP were provided access and allowed to continue in the study. This represents one potential strategy for addressing the ethical conundrum of recruiting people into efficacy trials of novel biomedical preventions when highly effective PrEP is increasingly available (e.g. Truvada daily pills and more recently the long-acting injectable drug cabotegravir).

The lack of efficacy is somewhat bleak news for HIV vaccine research, at least in the near term. The vaccine regimen tested in Mosaico is a prime-boost combination of viral vectors (adenovirus serotype 26) and proteins designed to induce immune responses to diverse HIV variants. The trial's name derived from the components included in the vaccines, which were mosaics mimicking elements of HIV from multiple different global clades of the virus.

The vaccine was generally considered to represent the most promising candidate that could be created with available technology. Studies in the macaque model of infection with SIV (HIV's simian counterpart) had demonstrated efficacy, which suggests that the relevance of such models will need to be reevaluated. [6]

Today's news was not entirely surprising given that a very similar vaccine regimen made by Janssen also failed to demonstrate significant efficacy in Imbokodo, a smaller trial conducted among cisgender women on the African continent (see TAG's report from September 2021). [7]

For both trials, the lack of efficacy does not preclude the possibility of important information emerging from analyses of the data that have been collected; as such, the research cannot be considered a failure. The contributions of the volunteers and the many people involved in executing these logistically daunting studies weren't for naught, because it's crucial to know what doesn't work even though the hope is always for success.

While there may understandably be some frustration regarding how long and difficult the road to an effective HIV vaccine is proving to be, it's important to appreciate that this reflects the novel challenges posed by the virus.

Two features in particular stand out: one is the fact that HIV infects and disrupts CD4 T cells, which would normally serve the function of coordinating the immune system's response to a virus or other pathogen. In other words, once HIV enters the body it immediately starts to directly undermine the immune mechanisms that might otherwise be able to clear or control it. Secondly, HIV's outer envelope has evolved a cloud of sugary decoy molecules that serve to block inhibition by most antibodies.

The potentially good news is that in recent years, an increasing number of unusual antibodies have been identified that can strongly inhibit many different HIV variants. Work is now well underway to design HIV vaccine candidates that may be able to induce this type of broadly neutralizing antibody (bNAb).

Challenges remain however, because tricky and complex vaccine approaches will be needed to induce the immune system to make antibodies with the unusual structural features of bNAbs that convey strong anti-HIV effects. It appears unlikely that an HIV vaccine candidate capable of inducing bNAbs will be developed and ready for efficacy testing within the next few years.

In the interim, scientists are testing options for delivering bNAbs directly into the body (the scientific term is passive immunisation). The first trials assessing the efficacy a bNAb delivered by intravenous infusion did not show a reduction in HIV acquisition overall, however there was evidence of a protective effect in a subset of participants. The bNAb used in the trials, VRC01, was among the first to be discovered and there are hopes that combinations of more recently discovered bNAbs with increased potency can do better. [8]

While it's unclear whether passive immunisation with bNAbs can become a practical and accessible HIV prevention option, these studies can also provide important information to guide the development of bNAb-inducing HIV vaccines.

As articulated very clearly in AVAC's statement today, the uncertain timeline for an HIV vaccine underscores the importance of ensuring that currently available biomedical prevention options are made affordable and accessible for everyone in the world who needs them. Furthermore, an effective HIV vaccine remains a vital

goal and continued investment is essential despite the challenges and setbacks.

TAG will provide a more detailed update on the current state of HIV vaccine and passive immunisation research in our annual Pipeline Report in July 2023. [9]

C O M M E N T

It was unusual that none of the press releases linked to Mosaico included any study results, not even the top-line data used by the DSMB to recommend stopping the study. This minimal data was also withheld at the community and press briefing held a week later.

The reasons given were to be able to further check the data – a little late for that – and to comply with an embargo linked to the submitted abstract for CROI – also not justified. Avoiding the top-line results forces media to issue different reports after the headline and mainstream media interest has already passed.

At least in part due to these concerns, the study group issued the following additional information.

There was no efficacy seen – the HIV infection rates were 4.1/100 person-years in both the vaccine and the placebo arms at the time the data were censored (23.7 months after follow-up). This was in the modified intent-to-treat analysis that includes all participants who received at least one dose of vaccine or placebo and were HIV negative at enrollment. There were also no safety concerns.

Questions were raised about whether PrEP could have influenced the results of the trial. By month 24, only 10% reported being on PrEP, so this could not have affected the trial results. We will post answers to other questions next week.

Source

Jefferys R. Interim analysis of Mosaico HIV vaccine efficacy trial results prompts discontinuation. TAG basic science blog. (18 January 2023).

tagbasicscienceproject.typepad.com/tags_basic_science_vaccin/2023/01/interim-analysis-of-mosaico-hiv-vaccine-efficacy-trial-results-prompts-discontinuation.html

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ON THE WEB

Free UK-CAB Online Training

The UK-CAB online training programme is an introduction to HIV treatment, research and treatment advocacy.

It is for anyone living with or affected by HIV including if you are working in the HIV sector. Sessions are presented by people from the HIV community, leading doctors and experts. It is free to resister and join.

The course will be broadcast live, every two weeks. Each session will be followed by a live Q&A with panellists

and speakers. Recordings will available online shortly afterward.

Register for the online training course. A link will be sent to you the day before each session so that you can join us live.

https://forms.gle/xyEEUbFxRVaNj7aT7

24th International Workshop on Long-term Complication of HIV and SARS-CoV-2

Simon Collins, HIV i-Base

The 24th International Workshop on Long-term Complication of HIV and SARS-CoV-2 took place on from the 6th to 9th December 2022.

The workshop talks are now available on-demand.

comorbidities.intmedpress.com/2022webcasts/

Training webinar: 2nd HIV from A to Z

The 2nd EACS HIV: A to Z workshops are now available online.

This is a dynamic educational programme about the clinical management of HIV. The course includes 12 modules that will be available from September 2022 to August 2023.

It is primarily a resource and training for doctors, with talks given by global experts. As new modules are added, the earlier lectures will still remain available.

It is free and fully CME accredited.

Lectures will be available in English and Spanish.

- Link to access the webinar: cutt.ly/xZUgx14
- Link to programme: HIV from A to Z

https://i-base.info/htb/wp-content/uploads/2022/10/Webinar-HIV-from-A-to-Z-Program.pdf

MEETINGS & WORKSHOPS 2023/4

The following listing covers selected upcoming HIV-related meetings and workshops. Registration details, including for community and community press are included on the relevant websites.

Some meetings are in person, some are virtual and others offer both options.

Academic Medical Education (AME) meetings and workshops

Several AME workshops (previously Virology Education) are highlighted below but 35 meetings are planned each year. Many virtual meetings include free registrations for health workers, researchers and community.

https://academicmedicaleducation.com (meetings listings)

2023

30th Conference on Retroviruses and Opportunistic Infections (CROI 2023)

19 – 22 February, 2023, Seattle

www.croiconference.org

BHIVA Annual Conference 2023

24 – 26 April 2023, Gateshead, UK

www.bhiva.org

12th IAS Conference on HIV Science

23 – 26 July 2023, Brisbane, Australia

https://iasociety.org

19th European AIDS Conference (EACS 2023)

18 – 21 October 2023, Warsaw, Poland

www.eacsociety.org

6th Southern African HIV Clinicians Society Conference (SAHCS 2023)

8 – 10 November 2023, Cape Town, South Africa

www.sahcsconference.co.za

2024

5th HIV Research for Prevention Conference (R4P 2023)

6 – 10 October 2023, Lima, Peru, and virtual.

www.iasociety.org/conferences/HIVR4P2023

PUBLICATIONS & SERVICES FROM i-BASE

i-Base website

All i-Base publications are available online, including editions of the treatment guides.

http://www.i-Base.info

The site gives details about services including the UK Community Advisory Board (UK-CAB), our phone service and Q&A service, access to our archives and an extensive range of translated resources and links.

Publications and regular subscriptions can be ordered online.

The Q&A web pages enable people to ask questions about their own treatment:

http://www.i-base.info/qa

i-Base treatment guides

i-Base produces six booklets that comprehensively cover important aspects of treatment. Each guide is written in clear non-technical language. All guides are free to order individually or in bulk for use in clinics and are available online in web-page and PDF format.

http://www.i-base.info/guides

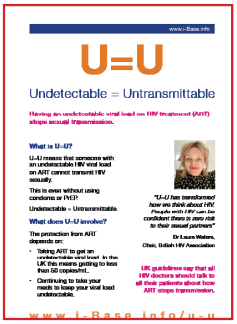
- Introduction to ART (May 2022)
- HIV & quality of life: side effects & long-term health (Sept 2016)
- Guide to PrEP in the UK (February 2022)
- HIV testing and risks of sexual transmission (June 2021)
- Guide to changing treatment and drug resistance (August 2021)
- Guide to HIV, pregnancy & women's health (April 2019)

Pocket guides

A series of pocket-size concertina folding leaflets that are designed to be a very simple and direct introduction to HIV treatment.

The five pocket leaflets are: Introduction to ART, HIV and pregnancy, ART and quality of life, UK guide to PrEP and HCV/HIV coinfection.

The leaflets use simple statements and quotes about ART, with short URL links to web pages that have additional information in a similar easy format.



U=U resources for UK clinics: free posters, postcards and factsheets

i-Base has produced a new series of posters, postcards and leaflets to help raise awareness about U=U in clincs.

This project was developed with the Kobler Centre in London.

As with all i-Base material, these resources are free to UK clinics.

Until our online order form is updated to include the U=U resources, more copies can be orded by email or fax.

email: subscriptions@i-base.org.uk

Customise U=U posters for your clinic

i-Base can customise U=U posters to include pictures of doctors, nurses, pharmacists, peer advocates or any other staff that would like to help publicise U=U.

Personalising these for your clinic is cheap and easy and might be an especially nice way to highlight the good news.

For further information please email: subscriptions@i-Base.org.uk

h-tb

HIV TREATMENT BULLETIN

HTB is published in electronic format by HIV i-Base. As with all i-Base publications, subscriptions are free and can be ordered using the form on the back page or directly from the i-Base website:

http://www.i-Base.info

by sending an email to: subscriptions@i-Base.org.uk

Editor: Simon Collins

Contributing Editor: Polly Clayden

HTB is a not-for-profit community publication that aims to provide a review of the most important medical advances related to clinical management of HIV and its related conditions as well as access to treatments. Comments to articles are compiled from consultant, author and editorial responses.

HIV i-Base receives unconditional educational grants from charitable trusts, individual donors and pharmaceutical companies. All editorial policies are strictly independent of funding sources.

HIV i-Base, 107 The Maltings,169 Tower Bridge Road, London, SE1 3LJ. T: +44 (0) 20 8616 2210. F: +44 (0) 20 8616 1250

http://www.i-Base.info

HIV i-Base is a registered charity no 1081905 and company reg no 3962064. HTB was formerly known as DrFax.

107 Maltings Place,169 Tower Bridge Road, London, SE1 3LJ
T: +44 (0) 20 7407 8488

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e-mail _____

☐ I would like to make a donation to i-Base - *Please see inside back page*

- **HIV Treatment Bulletin (HTB) every two months** ☐ **by e-mail**
- **Pocket leaflets** - *A7 small concertina-folded leaflets (2017)*

Pocket HCV coinfection	**quantity** _____	**Pocket PrEP**	**quantity** _____
Pocket ART	**quantity** _____	**Pocket pregnancy**	**quantity** _____
Pocket side effects	**quantity** _____	**PrEP for women**	**quantity** _____

- **Booklets about HIV treatment**

Introduction to ART: *44-page A5 booklet* **quantity** _____

UK Guide To PrEP: *24-page A5 booklet* **quantity** _____

ART in pictures: HIV treatment explained: *32-page A4 booklet* **quantity** _____

Guide to HIV, pregnancy and women's health: *36-page A5 booklet* **quantity** _____

Guide to changing treatment: *16-p A5 booklet* **quantity** _____

HIV and quality of life: side effects and long-term health: *96-page A5* **quantity** _____

Guide to HIV testing and risks of sexual transmission *52-page A5 booklet* **quantity** _____

- **Other resources**

U=U resources:

A3 posters quantity _____ **A5 leaflets quantity** _____ **A6 postcards quantity** _____

HIV Treatment 'Passports' - Booklets to record your HIV medical history **quantity** _____

Phoneline *posters (A4)* **quantity** _____

Please post to the above address, or email a request to HIV i-Base:

subscriptions@i-Base.org.uk