

IN THE LIGHT OF SARS, DON'T FORGET HIV!

(the **XXVII CROI**:
Conference on **Retroviruses and Opportunistic Infections**,
III, 2020, VIRTUAL)
(translated from Latvian)

Coronavirus has made this conference virtual, and its 3900 participants (including 26 community education scholars from all over the world) did not gather in Boston this spring. But it has not spared them the possibility to follow conference speakers online.

This seemed to be a “step by step” conference with no big discoveries or overturned statements of the previous CROI. Practically, all the conclusions from XXVI CROI mentioned in the previous info-sheet (#35) could be repeated here, with some progress in discoveries and research. Eventually, the fact that there are so many effective medications is the reason for the reduced amount of poster abstracts; their volume is just 62% of the ones presented at previous CROI.

EPIDEMIOLOGY AND MORE

EU is near to reaching the 90%:90%:90% UNAIDS target, and **11 of EU countries** (with 73% of EU population and 85% of PLWH in the region) have achieved the **UNAIDS final target** of 73% of all PLWH with **viral suppression** (poster 1079):

2016	% of PLWH diagnosed→	% of them initiated ART→	% of these with VL≤200	% of all PLWH with VL≤200
PLWH	87%	92%	91%	73%

Universal “Test and Treat” (UTT) policies were applied in **5 sub-Saharan countries**. Results from 4 different trials (oral 47):

2018	>90%	88-97%	87-97%	>73%
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As **HIV incidence** had nonetheless **remained high**, “90:90:90 does not result in HIV elimination, and UTT will not control generalized HIV epidemics on their own. Priorities include expansion in scale and scope of HIV testing ..., addressing needs of key and undeserved populations...” said Dr Kevin de Cock at the Monday plenary session. (o.18)

Instead, treatment as prevention (TasP) or U=U (Undetectable= Untransmittable) approach, as measured in community level (**gay/bi-men: GBM**) viral suppression, has achieved **good results in Australia** (its two States). (o.48):

GBM		% of GBM w/VL≤200
2012	90	72,1
2017	91,6	96,3

Although **S Africa** has the largest ART programme globally, nearly **1:5 adults are infected** there, as reported by a doctor from Cape Town. (o.100)

Other researchers have discovered that **black MSM living with HIV are 60% less likely to be virally suppressed** than white men in Atlanta(o146)

The same, **high HIV incidence** was demonstrated amongst **Thai MSM** and TGW in a Bangkok based cohort. (p.852)

HIV superinfection occurs when an **HIV+ person is infected with a new, distinct HIV strain**. A study in sub-Saharan Africa revealed that superinfection was higher than the incidence of primary infection. (p.194)

In 2015, FDA published guidance that recommended change in **donor deferral policy for MSM** from life- long to **1 year**. Some community advocates argue that the deferral period is much longer than the window period of any test, and there is a shortage of blood in the country. According to researchers, overall HIV incidence in first- time donors in the 15 months prior to policy change was 2,63 cases in every 100,000 donors per year. In the 15 months after - 3,19 (*incidence differences are not statistically significant*). The speaker commented that safety of the blood supply in the U.S. is “extraordinarily good”, especially considering that most donations, in fact, come from repeat donors, who are considered as a low- risk group. The scientist concluded that there is **no evidence** that the implementation of a 12-month MSM deferral policy resulted in **increased HIV incidence**. (o.145)

CO-MORBIDITIES

Older HIV+ people are more sedentary and frail than HIV- people. Study results suggest that **lower physical activity** within sedentary PLWH is associated with **smaller brain volumes**. (p.392)

Another study demonstrated that **physical fitness** might **improve brain** integrity of virologically stable PLWH. (p.393)

A speaker at Tuesday themed discussion reminded that **stroke** is the second leading cause of death worldwide. The largest burden of stroke is shouldered by low-and-middle-income countries (*LMIC*) where, in sharp contrast to high- income countries (*HIC*) that have been experiencing a decline in stroke incidence, its rates are **steadily rising**. Strokes in LMIC occur at a younger mean age. This global stroke crisis poses a major threat to many of the same regions of the world **where HIV prevalence is high**. 10 modifiable risk factors (*smoking, no physical activities, etc.*) account for 90 % of HIV associated strokes worldwide. (o.102)

Insomnia may play a role in the **increased incidence risk of myocardial infarctions (MIs)** seen **among PLWH**. A cohort study revealed that ~1/2 of PLWH has reported insomnia (*in a general population: 10-20%*). PLWH with insomnia had a substantially increased risk of Type2 MI (*which results from an oxygen supply-demand imbalance linked to hypertension or sepsis*). (p.644)

An Italian study's preliminary data show that successful **ART avoids** the **presence of HIV-DNA in seminal cells** in the majority of patients. (p.1055)

Infection with **STIs** among HIV+ persons may **reduce CD4+ level** and **increase HIV RNA in** blood plasma and **semen**, thus increasing the potential for HIV transmission. In HIV- individuals, STIs increase genital inflammation that may enhance HIV acquisition during sex.

In a multinational study, STIs were evaluated in both HIV+ index cases and their HIV- partners. Compared to **HIV- male partners**, **HIV+ female** index cases had a **higher risk of STI acquisition**, scientists concluded. (p.1044)

Erectile dysfunction (ED) drugs are frequently used in MSM. An ongoing cohort study has shown that the causal mean **difference in CD4 cell counts** in HIV+ men after 1 year of ED drug use was 57,6 cells/ μ L and **increased to 117,7 cells/ μ L** after 10 years. (p.877)

And, finally – **douching** is associated with **rectal inflammation in HIV infected MSM**. Among 92 study participants in S Florida, 28% were taking PrEP, 90% reported testing negative in the past year, and ~70% reported rectal douching. Participants who douched reported more CRAI (*condomless receptive anal intercourse*) partners and more instances of CRAI with ejaculation. This study is among the first to observe that rectal douching is independently associated with rectal inflammation, which translates into **vulnerability to HIV or other STIs**. (p.1067)

AGEING

Data addressing ageing's effects suggest that age blunts CD4 cell count (*CD4*) improvements observed with ART-induced viral suppression. Prolonged viral suppression causes a rising **CD4/CD8 (T4/T8) ratio**. Scientists analysed data from HIV outpatient study participants from 2000-2018: of 1910 patients, baseline T4/T8 was 0,3. **Over time**, the % of **patients with T4/T8 \geq 0,7 increased** for all ages, but less among \geq 40y than by <40y group. In clinical outcomes' analyses, **T4/T8 \leq 0,7** at last measurement was associated with mortality, cancer and dyslipidemia. (*Thus, pre-treatment immune injury may persist as assessed by T4/T8, which may not resolve even with prolonged viral suppression and may have clinical consequences in ageing PLWH*). (p.244)

Boston- based researchers analysed records of deaths in Massachusetts from 1999-2017. **Mean age of death** among PLWH **increased** from 42,5y in 1999 **to 60y in 2017** (*diseases of the circulatory system ranked first, infectious diseases – second, respiratory system diseases – third*). Increase in age at death varied by cause of death and ranged from 5,2 to 17,7y among PLWH. Areas with the least improvement were hypertension (5,2y), lower respiratory tract diseases (5,6y), and diabetes (8,6y). Areas with the most improvement were renal (17,7y) and heart failures (16,9y). Mean age of death was unchanged among the uninfected (76,1y and 76,2y, respectively). (p.871)

A cohort study among adults was conducted in California and mid- Atlantic States during 2000-2016. **Overall lifespan** has continued to **increase for PLWH** in care. By the end of the study, a 21yo HIV+ person was predicted to live **to the age of 77** (*HIV- person – to 84*). If the person started ART at CD4>500, the expected lifetime predicted was 80,5 years. However, PLWH have 16 fewer healthy years than HIV- adults, with diagnoses of common comorbidities beginning at age 34, and no improvement over time or with early ART initiation. (o.151) NB! PLWH see their doctor more regularly and may be diagnosed at an earlier stage.

It is a fact that **women** have shown more favourable immunological characteristics than men around seroconversion.

A French multicentre cohort (1996 to 2017) among HIV+ men and women who initiated ART within the first 3 months of infection has shown a sustained mean **difference of +99 to +168 CD4 cells/μL** (depending on age) between women and men at 12,5 years of ART. **CD4/CD8 ratio** of women was persistently **higher than** that of **men by** a mean of **0,31**. The larger immunological benefit (sustained under very long-term ART) may give women additional protection from adverse clinical outcomes and premature ageing. (p.217)

ARVs

DTG- based dual regimens have proved their efficacy in large trials. Investigating real-life data, French scientists found that DTG dual regimens were associated with a low rate of VF. However, **DTG+ 3TC or FTC** was associated with an absence of resistance-associated mutations' (RAM) emergence at VF and slightly **lower VF rate than DTG/RPV**. (p.490). In other words – if you accidentally miss DTG/3TC – you may be fine, if you miss DTG/RPV – you may not, as remarked by IAS president Anton Pozniak at one of the post-CROI webinars.

The last symposium's speaker mentioned that for HIV treatment nowadays there are **more than 30 drugs** of different classes [*attachment inhibitor Fostemsavir (FTR) (see info-sheet #35) has already been approved by FDA*], and many are still being investigated. (o.157)

As it was said at a plenary session – it is likely that in the next few years long-acting and implantable antiretrovirals will be available. (o.17)

And the hope for the future is – a single shot cure!

Hopefully yours –
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