# Highlights From the First Virtual CROI

A rundown of POZ's reporting on the 2020 Conference on Retroviruses and Opportunistic Infections

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The annual Conference on Retroviruses and Opportunistic Infections (CROI), a major global scientific confab about HIV and related matters that was supposed to run from March 8 to 11 in Boston, was instead held virtually this year as organizers heeded warning signs of the imminent coronavirus pandemic.

Undeterred from presenting their research findings, scientists used web portals to speak to conferencegoers, who were at home rather than packed together in a Boston conference hall.

To follow is a quick summary of some of the major studies presented at the conference. Click the hyperlinks to read more about any of the studies. You can also see a complete newsfeed of POZ's CROI reporting by clicking here or on the #CROI 2020 hashtag at the end of this article.

Cure:

Following up on an initial report presented at CROI 2019 in Seattle and a paper published in the journal Nature, a London physician presented his updated case study about the famed HIV-positive man in the English capital who received a bone marrow transplant for lymphoma from a donor with a natural genetic resistance to HIV.

The man, whose name according to a New York Times report that came out during CROI is Adam Castillejo, is "probably cured" of HIV according to his physician, given the fact that it has been 30 months since he discontinued his antiretroviral (ARV) treatment and his virus has not rebounded. Ultra-sensitive tests have found only traces of the virus's genetic code in Castillejo's body, and no virus that appears capable of reproducing.

Castillejo thus likely becomes the second person in history, after Timothy Ray Brown, to be cured of HIV. Brown received a similar treatment regimen over a decade ago.

Another study found that HIV cure strategies may need to be tailored according to sex, given the various differences in how the virus behaves in women compared with men. For example, compared with men, HIV replicates at a slower pace among women and, when fully suppressed by ARVs, maintains residual replication and lower levels.

Treatment:

In recent years, an expanding portfolio of studies have investigated the impact of ARVs on weight gain, which is a particular concern when it comes to the newer integrase inhibitor drug class.

Genetics, one CROI study found, may drive weight gain after people with HIV start an integrase inhibitor. Other researchers found that the ARVs individuals were taking prior to switching to an integrase inhibitor–based regimen may be key predictors of subsequent weight gain. Specifically, those who switched from a non-nucleoside reverse transcriptase inhibitor (NNRTI)–based regimen tended to have a steeper accumulation of body weight in a recent study.

Two weeks before Canada approved ViiV's long-acting injectable ARV regimen Cabenuva (cabotegravir/rilpivirine), which is dosed every four weeks, researchers presented findings suggesting that a version of Cabenuva that had higher doses of the two drugs in the regimen was as effective at suppressing HIV as the eight-week version. In December, the Food and Drug Administration (FDA) declined to approve Cabenuva based on concerns about its manufacturing process. ViiV has stated that it is working with the FDA to address those concerns.

Other Health Conditions:

In perhaps the sunniest finding presented at CROI, researchers projected that people who contract HIV at 21 years old and who start ARVs when their CD4s are still above 500 have a normal life expectancy. However, the overall population of people with HIV is still expected to live nine fewer years than the general population and to live 16 fewer years without major health problems, such as chronic liver, kidney or lung diseases or diabetes, cancer or cardiovascular disease (CVD).

On the CVD front, researchers found that among young people living with HIV, having a detectable viral load is associated with an uptick in heart disease risk. Insomnia, another study found, is tied to a higher risk of a certain type of heart attack among HIV-positive individuals, specifically a type 2 myocardial infarction. Also, following hospitalization for coronary artery syndrome, people with HIV have worse health outcomes than HIV-negative people, possibly because those with HIV receive substandard medical care for this form of CVD.

HIV is associated with faster lung decline among those who are younger than 50, while for those older than 50, lung function appears to decline at a comparable rate regardless of an individual's HIV status.

Six months of the drug Pomalyst (pomalidomide), which is FDA-approved to treat a form of blood cancer, partially or completely cleared human papillomavirus (HPV)–driven precancerous anal lesions in about half of HIV-positive men in a recent study.

Prevention:

The FDA's 2015 decision to end a lifetime ban on blood donation from men who have ever had sex with men and to instate a policy requiring men not to have sex with another man for 12 months

before donating did not result in an increase in the already vanishingly small risk of HIV getting into the nation's blood supply. On April 2, the coronavirus pandemic prompted the FDA to reduce that 12-month deferment period to three months.

Researchers know that women taking Truvada (tenofovir disoproxil fumarate/emtricitabine) as pre-exposure prophylaxis (PrEP) against HIV metabolize the drug differently than men. A new study found that the concentration of Truvada in the body is about 30% lower during pregnancy compared with the postpartum period. This may not reduce PrEP's effectiveness, but it does suggest that pregnant women on PrEP need to be particularly strict about taking their daily doses of Truvada.

Researchers are searching for ways to simplify the regimens for on-demand PrEP, in which at-risk HIV-negative people take PrEP only during the two- to three-day period surrounding sex, and for post-exposure exposure prophylaxis, which requires initiating a 30-day three-ARV regimen within 48 to 72 hours of a potential exposure to the virus. One team found that adding the integrase inhibitor bictegravir to Descovy (tenofovir alafenamide/emtricitabine) reduced the doses needed for on-demand PrEP and the required duration of a PEP regimen.

An analysis of four randomized studies published in 2019 in which researchers vastly scaled up community-wide testing and rapid ARV treatment initiation in select sub-Saharan African communities found that these efforts helped reduce new HIV transmissions. Specifically, the resulting reduction in the proportion of people in the overall population and the proportion of people living with the virus with an unsuppressed viral load both predicted a declining HIV transmission rate.

The Care Continuum:

The HIV care continuum refers to the multistep process required to get people living with HIV to the point where they are sustaining a fully suppressed viral load—specifically, diagnosis, linkage to medical care for the virus, retention in ongoing medical care, prescription of ARVs and adherence to the daily drug regimen. Various studies presented at CROI analyzed problems that impede people's progress along this continuum and identified solutions to facilitate such progress.

Among men who have sex with men (MSM) living with HIV in Atlanta, African Americans are more likely than whites to have an unsuppressed viral load, possibly because of greater problems accessing health care as well as a higher rate of housing instability among the Black men. Researchers theorized that addressing those concerns could help improve viral suppression rates among local Black MSM.

Another study found that people with HIV who internalize stigmatizing attitudes toward HIV-positive individuals are less likely to stay in medical care for the virus, suggesting that efforts to mitigate the effects of HIV stigma could improve viral suppression rates.

And among people with HIV who have opioid use disorder, medication-assisted treatment with buprenorphine is associated with a lower viral load.

Transgender People:

A collection of studies helped shed new light on how HIV impacts transgender people. One conducted in New York City found that researchers investigating HIV risk factors among trans men should look not only at behavioral risks among them but also at the gender identity of both these men and their sexual partners. Research conducted among trans women found, for example, a very high rate of HIV among African Americans in this demographic and that homelessness and a lack of full employment were associated with a higher risk for the virus. Providing gender-affirming care for trans women, however, was associated with better care continuum statistics in this population.

Viral Hepatitis:

A Japanese study found that MSM who take Truvada as PrEP not only greatly lower their risk of HIV but also of hepatitis B virus (HBV). This risk reduction was actually greater than that resulting from the hep B vaccine.

Among people with hepatitis C virus (HCV), including those with HIV coinfection and who injected drugs, cutting down the 12-week Epclusa (sofosbuvir/velpatasvir) regimen to six weeks proved not as effective as the standard treatment length at curing HCV.

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