 **CROI** 2022 **Highlights: HIV Co-Infections**

Adrienne E Shapiro, MD, PhD, MSc

Acting Assistant Professor, Departments of Global Health &
Medicine (Division of Allergy & Infectious Diseases)

Associate, Vaccine and Infectious Diseases Division, Fred Hutch

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Disclosures

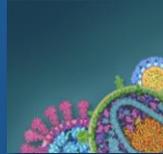
Grant funding from Vir Biotechnology, Inc as a clinical trial investigator.

Data presented in this presentation offer a limited glimpse of health inequities that exist within a larger social context. Racism, not race, creates and perpetuates health disparities.

The MWAETC, in alignment with the American Medical Association, encourages characterizing race as a social construct, rather than an inherent biological trait, and supports ending the practice of using race as a proxy for biology in medical education, research and clinical practice.

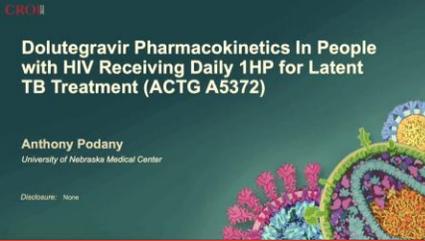
Outline



- Highlight abstracts and symposium presentations from CROI focusing on:
 - Tuberculosis
 - COVID-19
 - Hepatitis C
- One abstract in detail per topic 
- “Lightning round” with brief summaries 

Tuberculosis

Dolutegravir PK with daily 1HP for TB preventive therapy

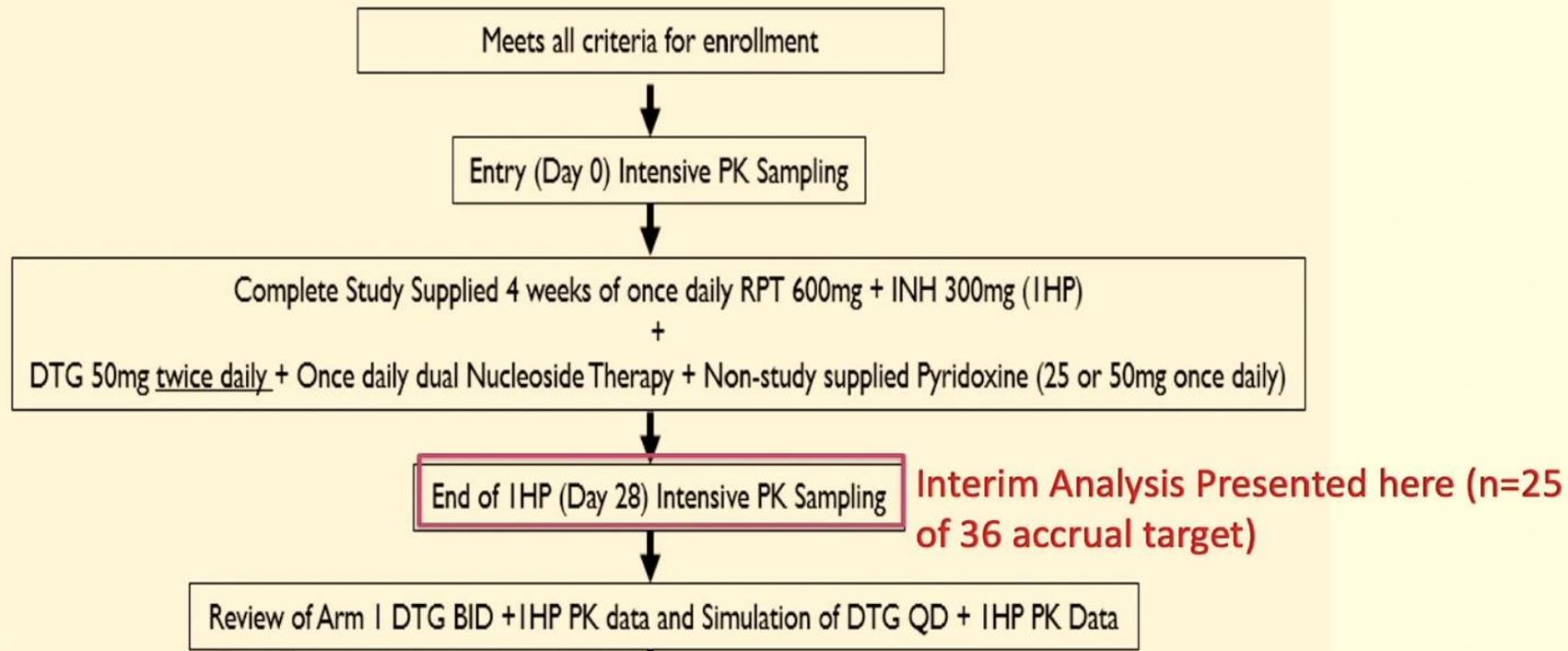


- ACTG A5372 trial of pharmacokinetics of DTG in PWH receiving 1HP for LTBI
- 1HP noninferior to 9H for TB prevention (BRIEF-TB); all PWH on EFV ART
- RPT metabolism can decrease DTG levels
- DOLPHIN study of 3HP (weekly) with DTG (50mg daily) found no decrease in VL suppression, GM DTG trough 546ng/ml
- No data on effect on DTG levels/VL suppression of 1HP given with DTG
- Key implications for treatment-shortening of LTBI rx for PWH worldwide

Dolutegravir PK with daily 1HP for TB preventive therapy



ACTG 5372 Study Design



- Adults w HIV, VL <20
- LFTs <2.5x ULN
- No TAF (RPT interaction)
- Not BF/pregnant

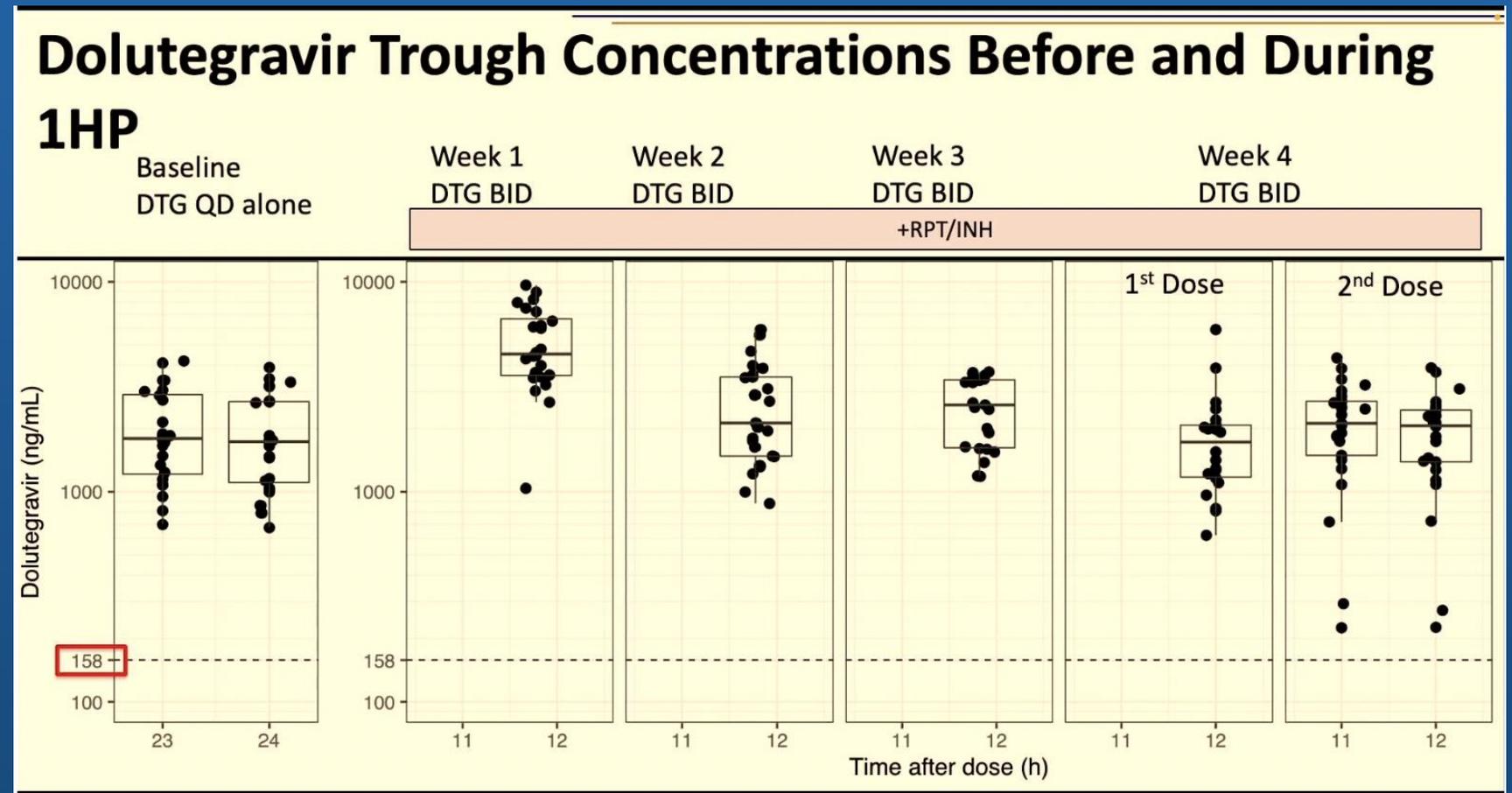
- N=25 enrolled

If supported by initial data & modeling, Arm 2 will open, to evaluate DTG QD PK with 1HP

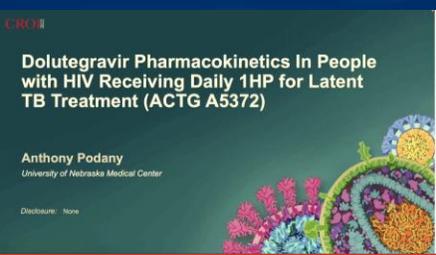
Dolutegravir PK with daily 1HP for TB preventive therapy



- Used minimum DTG threshold: 158 ng/ml, 5thile DTG trough from a 10mg/day sampling study
- 24/25 had HIV RNA levels <50 copies/mL at d28.
- One ppt had HIV VL of 160 copies/mL at day 28 (DTG conc 2162 ng/mL), repeat VL of <50 copies/mL on day 42.

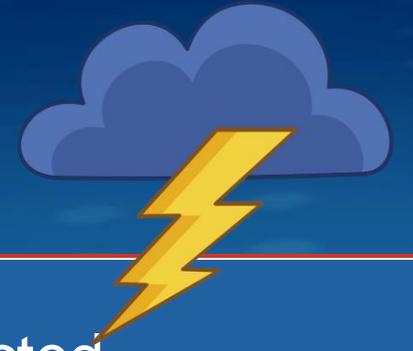


Dolutegravir PK with daily 1HP for TB preventive therapy



- DTG trough concentrations with BID DTG and 1HP were higher than standard daily DTG
- Decrease in DTG trough concentrations d3-d28 → dose dependent induction of DTG metabolism
- All DTG trough above DTG target
- No hypersensitivity or serious AEs
- PK, VL suppression, safety data → bid DTG dosing with 1HP
- Next will investigate daily DTG with 1HP (Stage 2 of study)

TB Lightning Round



- Cross GB et al. OA-76: Rosuvastatin may have benefit as host-directed adjunctive therapy for TB based on in vitro data. RCT (N=137) of TB treatment SOC vs. TB treatment + rosuvastatin 10mg daily x 8 weeks for Rif-S TB. Outcome: Time to culture conversion. Result: No difference in time to culture conversion (42 d in both arms, $p=0.188$). [few HIV+ included]
- Kakande E. et al OA-75: Implementation science study – education & support for mid-level clinic managers resulted in modest increase in TB preventive therapy (IPT) initiations for PLWH in Uganda, after a nationwide “IPT push.”
- Nuermberger E. Symposium: New TB drugs and drug classes in pipeline, long-acting formulations of TB drugs in development.
- Dorman S. Symposium: Progress with treatment-shortening regimens for TB treatment (4M for adults and children) and prevention (3HP, 1HP).

COVID-19

Adverse Birth Outcomes: COVID-19 & HIV

- Higher rates of adverse parental & birth outcomes in people with COVID-19 seen globally
- PLWH have worse outcomes from COVID-19
- Little evidence on interaction/combination.
- 13 sites from Tsepamo study in Botswana, birth outcomes Sept 2020 – Nov 2021
 - Women with known HIV status
 - COVID screening test within (-14d, +3d) delivery

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The Impact of COVID-19 on Adverse Birth Outcomes in Botswana by HIV Status

Maya Jackson-Gibson, Modiegi Diseko, Ellen Caniglia, Gloria Mayondi, Judith Mabuta, Rebecca Lockett, Sikhulile Moyo, Pamela Lawrence, Mogomotsi Matshaba, Mosepele Mosepele, Mompoti Mmalane, Shahin Lockman, Joseph Makhema, Rebecca Zash* and Roger L. Shapiro*
*Contributed Equally

Botswana-Harvard AIDS Institute Partnership
Gaborone, Botswana

Disclosure: None



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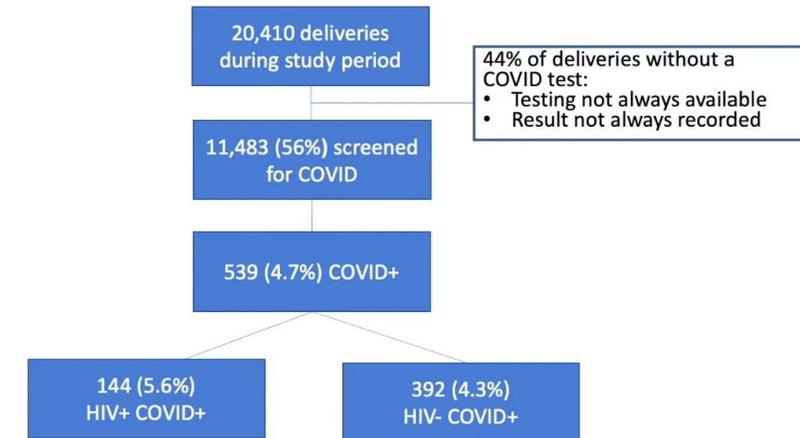
HARVARD
SCHOOL OF PUBLIC HEALTH

Northwestern Medicine
Feinberg School of Medicine

Fogarty Global Health Training Program

Bothwell Doctors Medical Centre

Flow diagram of women with COVID by HIV status



- Women living with HIV were more likely to test COVID+ at delivery ($p < 0.01$)

Adverse Birth Outcomes: COVID-19 & HIV

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The Impact of COVID-19 on Adverse Birth Outcomes in Botswana by HIV Status

Maya Jackson-Gibson, Modigi Diako, Ellen Caniglia, Gloria Mayondi, Judith Mabuta, Rebecca Luckett, Sitshele Moya, Pamela Lawrence, Mopotso Mababa, Mosepele Mosepele, Mompoti Mmalane, Shahn Lockman, Joseph Makhema, Rebecca Zashi* and Roger L. Shapiro*

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Maternal deaths were high with COVID, particularly during Delta, but not worse with HIV

	COVID Status		Age Adjusted Risk Ratios (CI 95%)
	COVID+	COVID-	
Maternal Deaths			
Overall	19 (4%)	12 (0.1%)	31.6 (15.4, 64.7)
HIV Status			
HIV+	4 (3%)	3 (0.1%)	23.3 (5.3,102.8)
HIV-	15 (4%)	9 (0.1%)	35.6 (15.7,81.0)
Variant			
Pre-Delta	3 (2%)	5 (0.1%)	13.9 (3.4, 57.2)
Delta	15 (5%)	5 (0.1%)	56.3 (20.5, 154.7)

ART use very high: 97% of women on ARVs, >75% started ART prior to conception

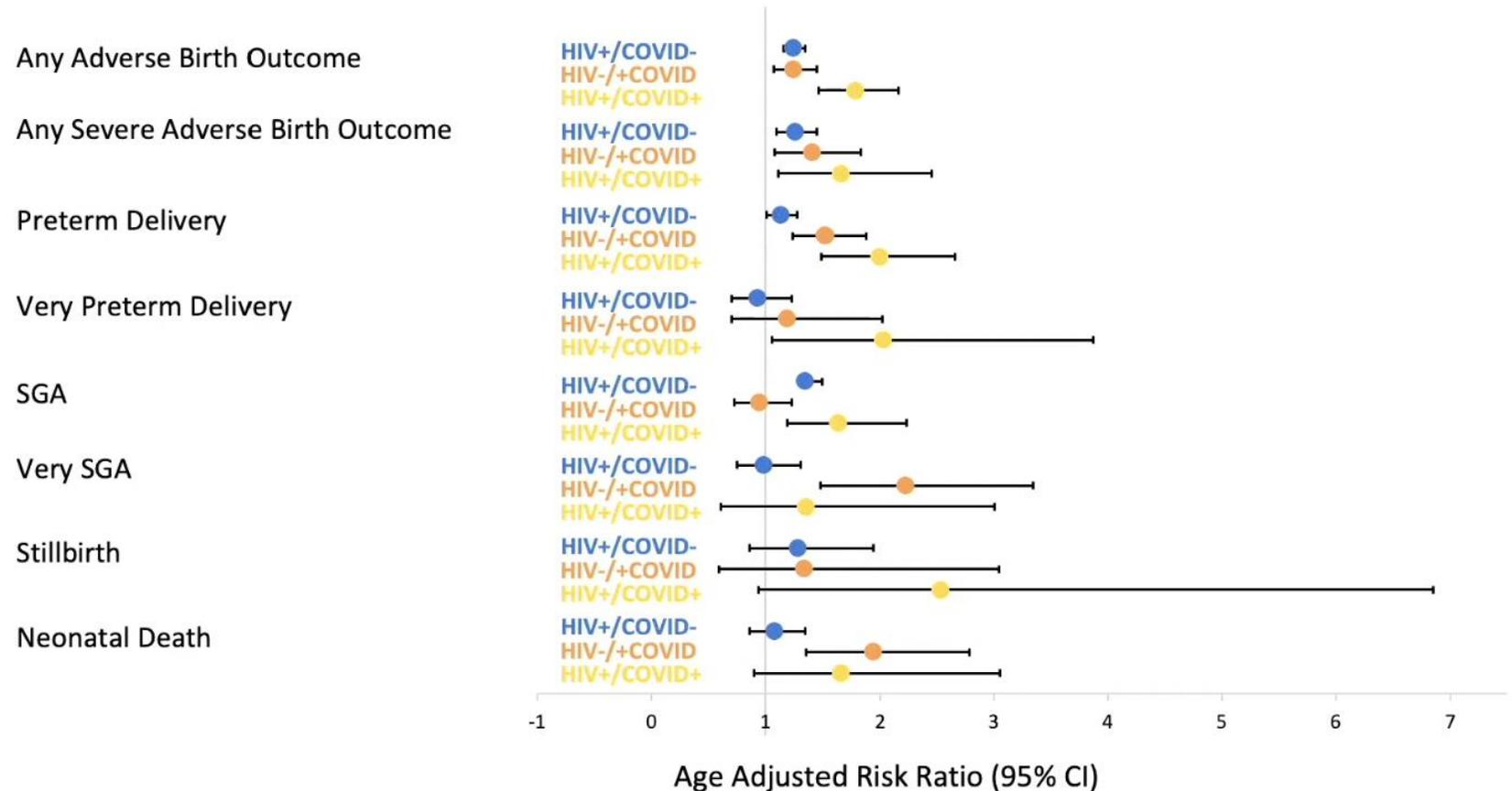
*Maternal COVID-19 vaccination status not available

* <15% fully vaccinated in Botswana by late 2021

Adverse Birth Outcomes: COVID-19 & HIV

- 5.5% absolute risk of stillbirth in infants born to mothers with COVID-19

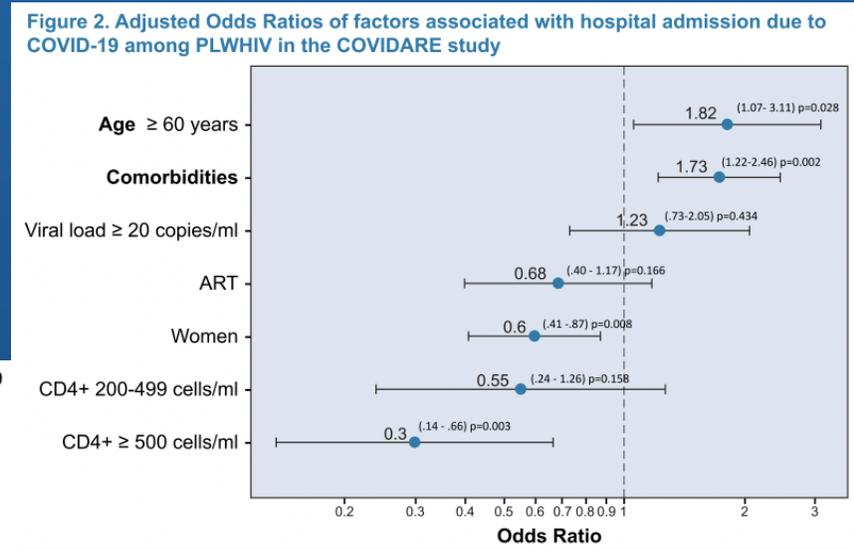
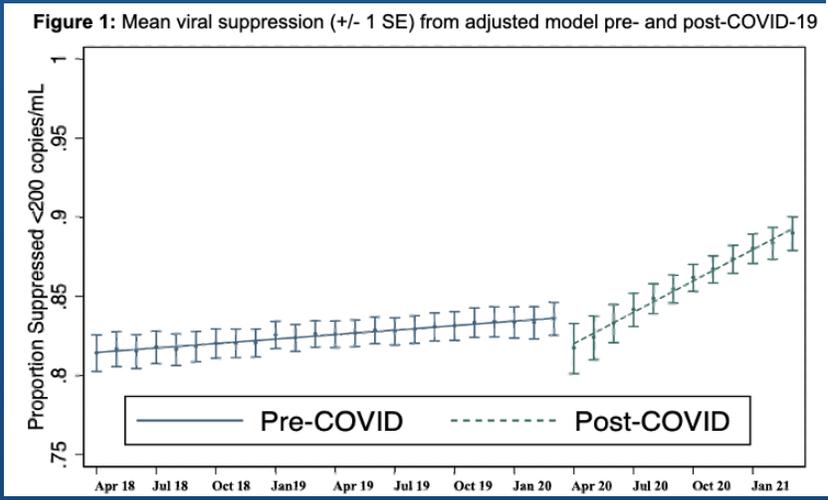
Risk ratios for adverse birth outcomes by exposure group (HIV- COVID- as reference)



COVID-19 + HIV Lightning Round

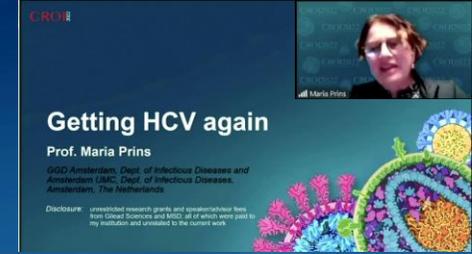


- Moller et al, poster 760: Sweden national registry of all people hospitalized with COVID-19 Feb 1, 2020 – August 31, 2021. N=121 PWH (93% VLUD; med CD4=560), 64764 PWOH hospitalized. Severe COVID-19 = ICU or 90d mortality. No increased odds of severe COVID-19 outcomes in PWH vs. PWOH (aOR=0.88, ns/CI incl 1)
- Ballivian et al, poster 642: Argentinian cohort of N=844 PWH with COVID-19. 85% on ART, 68% VLUD. 20% hospitalization.
- Spinelli et al poster 888: Viral suppression increased during COVID in SF Ward 86 cohort of PWH (N=1816) w/ increased social services, outreach, housing, and return to in-person visits



Hepatitis C

Hep C Re-infection



- Decrease in HCV incidence shortly following unrestricted access to DAAs, strongest effect seen in people/MSM with HIV in clinical care
- Reinfection rates still too high to reach HCV elimination goals
- COVID-19 impact on testing, treatment initiation, harm reduction services
- Early re-treatment with DAAs recommended for re-infection

Risk factors for HCV reinfection

Mucosal HCV transmission among MSM

- Receptive condomless anal intercourse
- Number of casual sex partners
- Fisting
- Sharing sex toys
- Sharing anal douching equipment
- Sharing equipment during nasally administered drug use
- Engaging in anal intercourse causing rectal trauma with bleeding
- Ulcerative STI

- Primary infection
- Reinfection
- Primary and Reinfection

Percutaneous HCV transmission among PWID

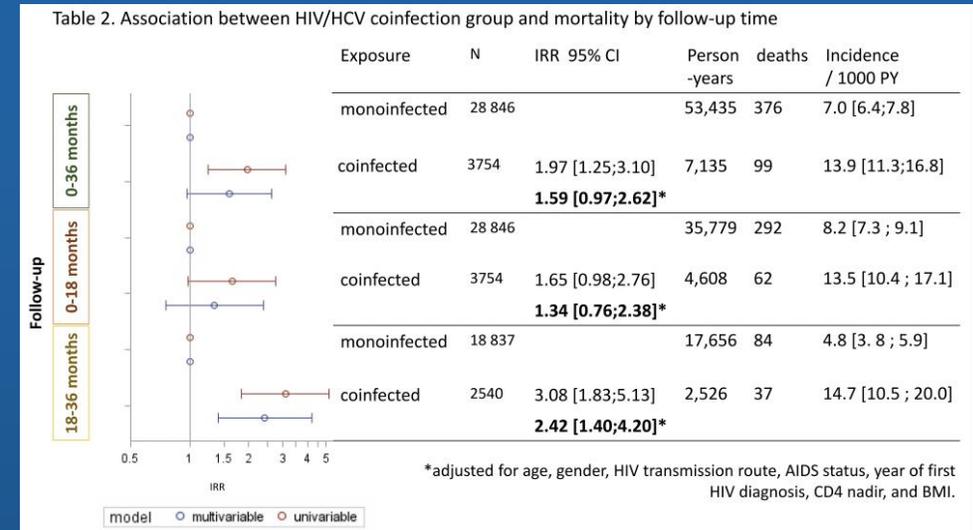
- Sharing equipment for injecting drug use
- Recent IDU

NEAT-ID AIDS 2020, Young CID 2017, Hill OFID 2020, Newsum CID 2021, Selfridge Int J Drug Policy 2021

Hep C Lightning Round



- Requena et al, Poster 532: In French cohort of PWH w/ VL suppression, higher risk of death (all-cause mortality) in first 36 months of SVR in HIV+/HCV+ pts cured with DAAs vs HIV+/HCV- pts (matched on f/u time, age, gender, BMI, CD4 nadir, transmission RF) despite HCV cure.
- Ma et al, Poster 537: Among PWH in CNICS cohort, transgender women more likely to have HCV than cis men and women, more likely HCV viremic than CM, but once in care received DAAs as readily as cis PWH.



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