AETC AIDS Education & Training Center Program Mountain West

March 2021 AIDS Clinical Conference: Virtual CROI 2021 Report Back

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March 16, 2021

AETC AIDS Education & Training Center Program Mountain West

AIDS Clinical Conference: Virtual CROI 2021 Report Back (ART)

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Disclosures

No conflicts of interest or relationships to disclose.

Outline

1. Update from IMPAACT 2010
2. Update from ATLAS-2M
3. Lenacapavir: Capella Study

MWAETC

Update from IMPAACT 2010

Background: IMPAACT 2010

- ART options in pregnancy remain limited
- IMPAACT 2010 is a global, multicenter, randomized trial of ART-naïve pregnant women with HIV started on:
  - TAF/FTC + DTG vs
  - TDF/FTC + DTG vs
  - TDF/FTC/EFV
- Interim results through delivery outcome (CROI 2020)
  - DTG-containing arms had superior virologic efficacy
  - TAF/FTC + DTG had lowest rate of adverse pregnancy outcome

Chinula L et al, Virtual CROI 2021, Abstract #177

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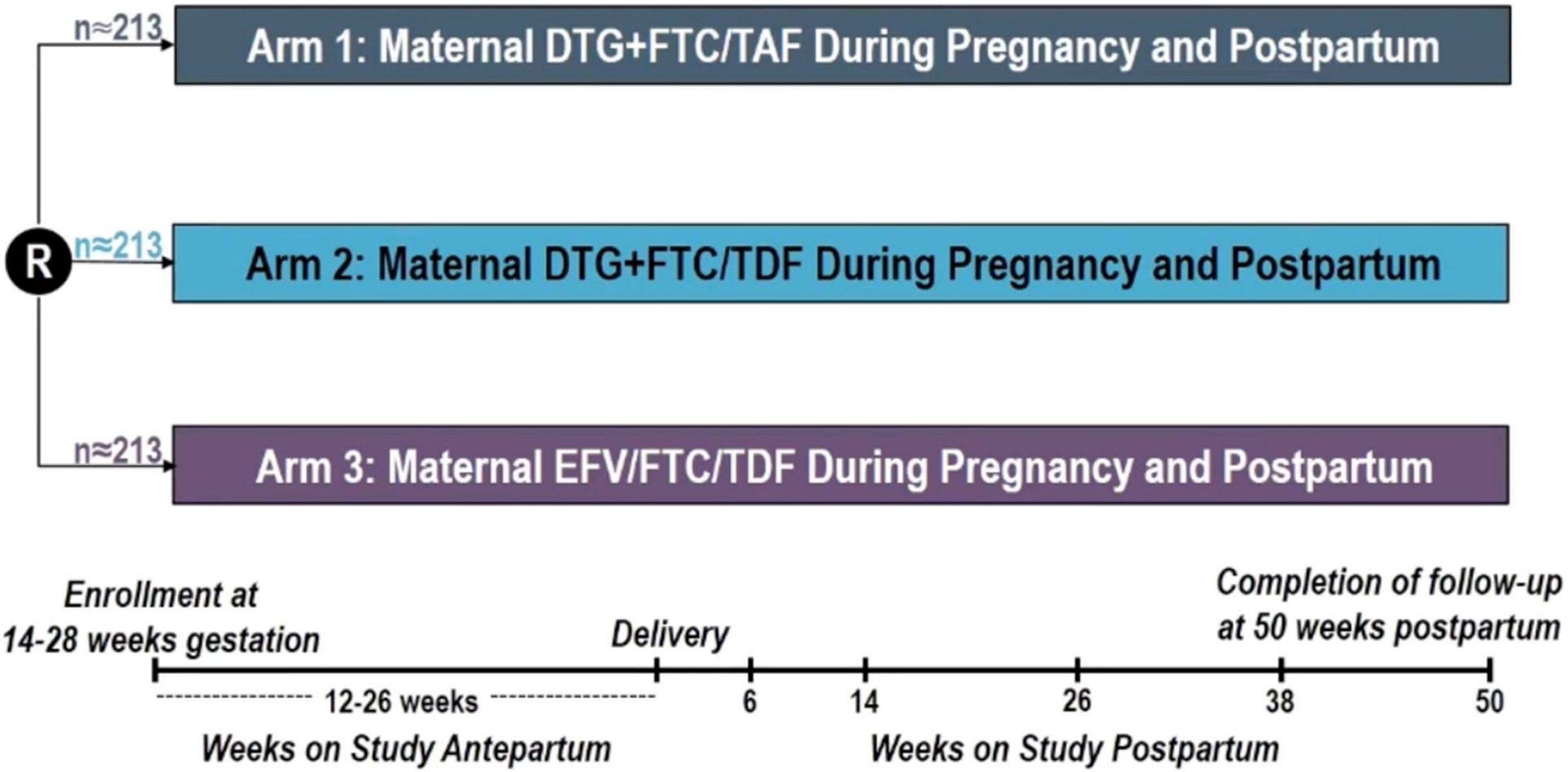
Study Design: IMPAACT 2010



Chinula L et al, Virtual CROI 2021, Abstract #177

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Study Design: Maternal Baseline Characteristics

	DTG+FTC/TAF (n=217)	DTG+FTC/TDF (n=215)	EFV/FTC/TDF (n=211)	Total (n=643)
Age (median years)	26.8	26.0	26.6	26.6
Enrolled in Africa	187 (86%)	189 (88%)	188 (89%)	564 (88%)
Gestational age (median weeks)	22.1	21.3	22.1	21.9
CD4 count (median cells/mm^3)	407	481	439	466
HIV-1 RNA (median copies/mL)	781	715	1357	903
HIV-1 RNA <50	36 (16%)	37 (17%)	27 (13%)	100 (16%)
ART in pregnancy prior to entry	176 (81%)	180 (84%)	176 (83%)	532 (83%)
Median days on ART	6	6	6	6
BMI* (kg/m2), median (Q1,Q3)	25.1 (22.5, 29.4)	24.5 (22.0, 28.1)	24.2 (21.5, 28.0)	24.7 (22.0, 28.4)

Median duration of antepartum follow-up: 17.4 weeks, *Pre-pregnancy BMI was not available

Chinula L et al, Virtual CROI 2021, Abstract #177

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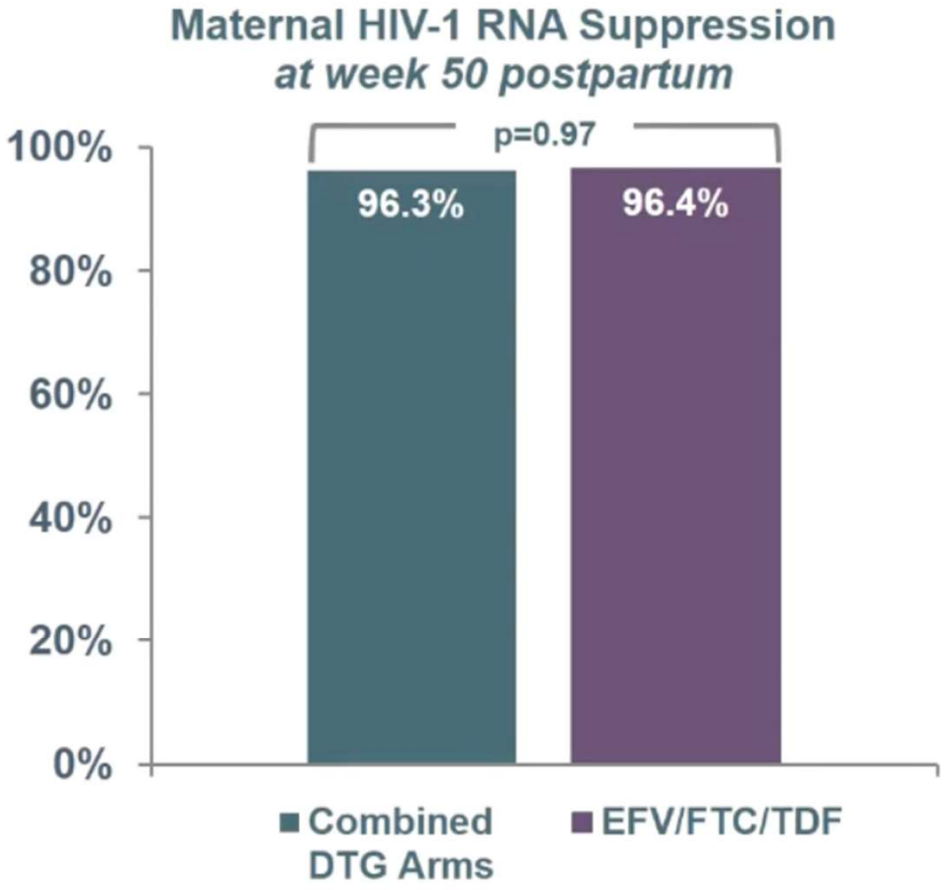
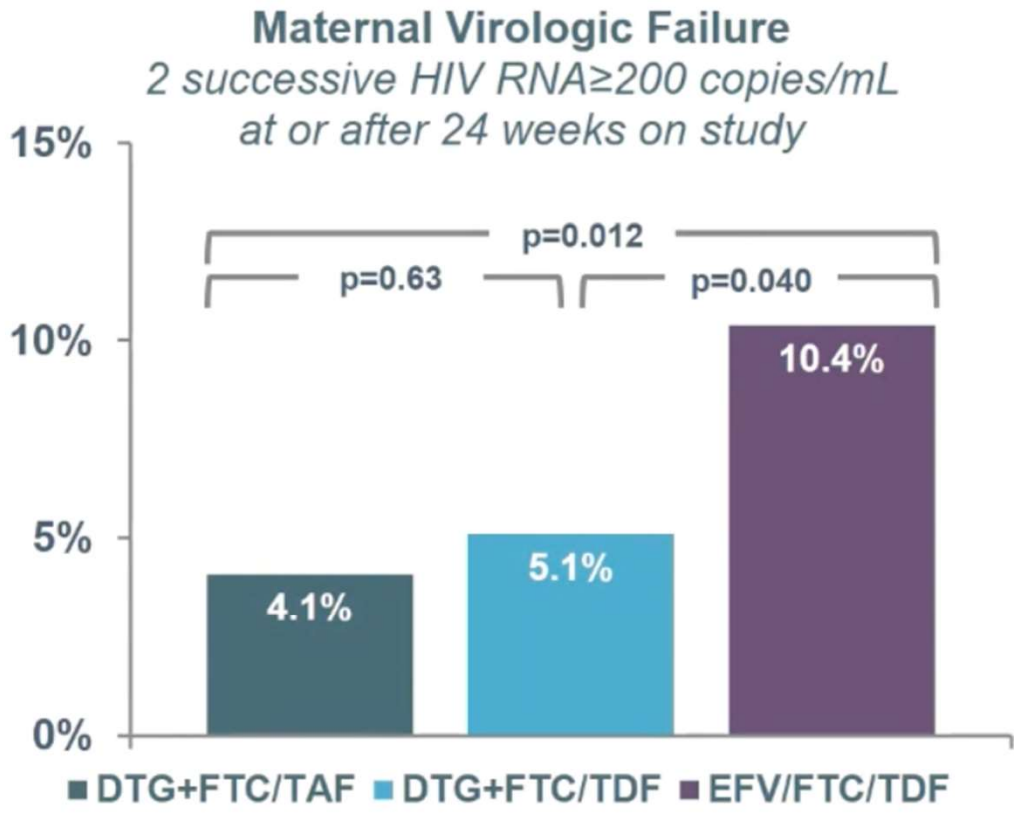
Study Design: Outcomes to 50 Weeks Post-Partum

- Virologic Efficacy
- Safety Outcomes
  - Maternal grade 3 or higher adverse events
  - Infant grade 3 or higher adverse events
  - Infant mortality
  - Infant HIV infection

Results: IMPAACT 2010 Virologic Efficacy



Per ITT analysis



Post hoc statistical comparisons

Chinula L et al, Virtual CROI 2021, Abstract #177

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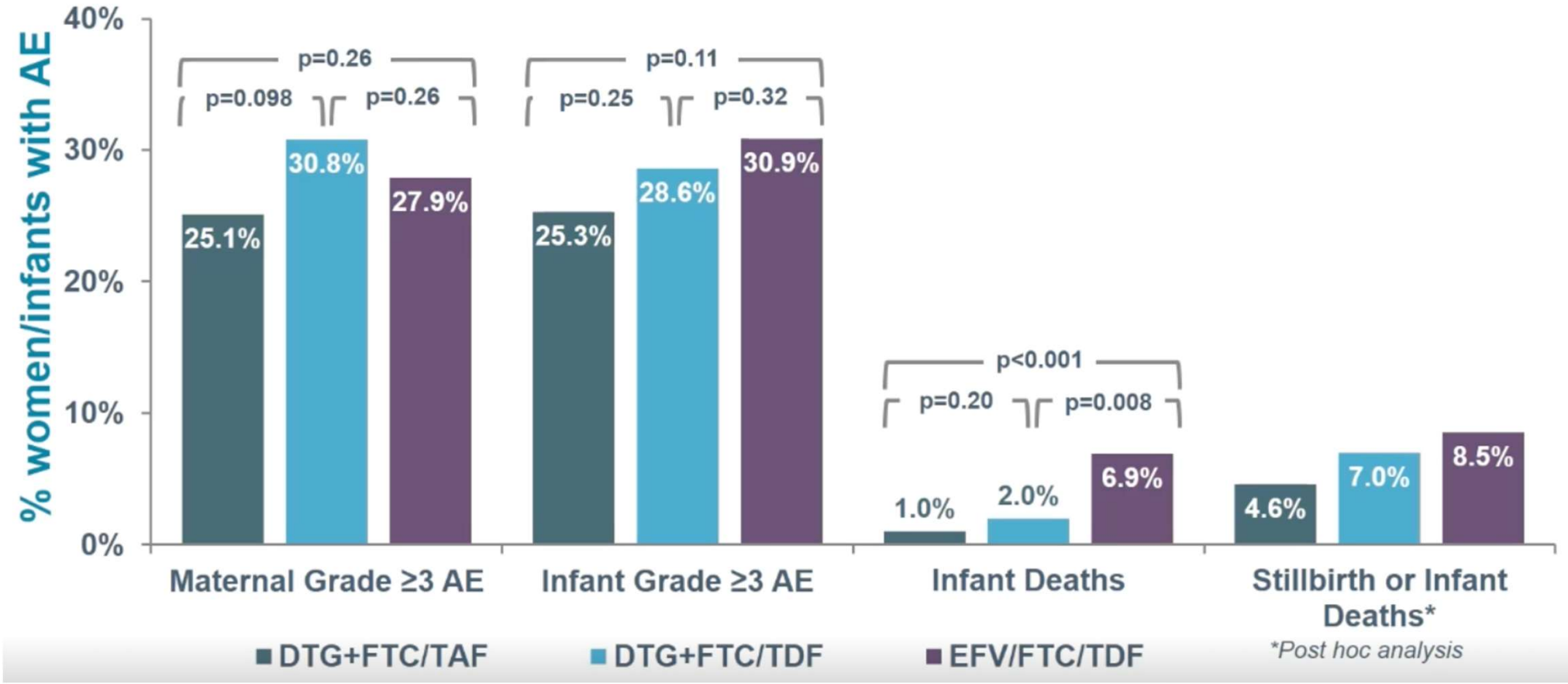
Results: IMPAACT 2010 Adverse Events

Maternal & Infant Grade 3 or Higher Adverse Events by Arm Through 50 Weeks Postpartum



Chinula L et al, Virtual CROI 2021, Abstract #177

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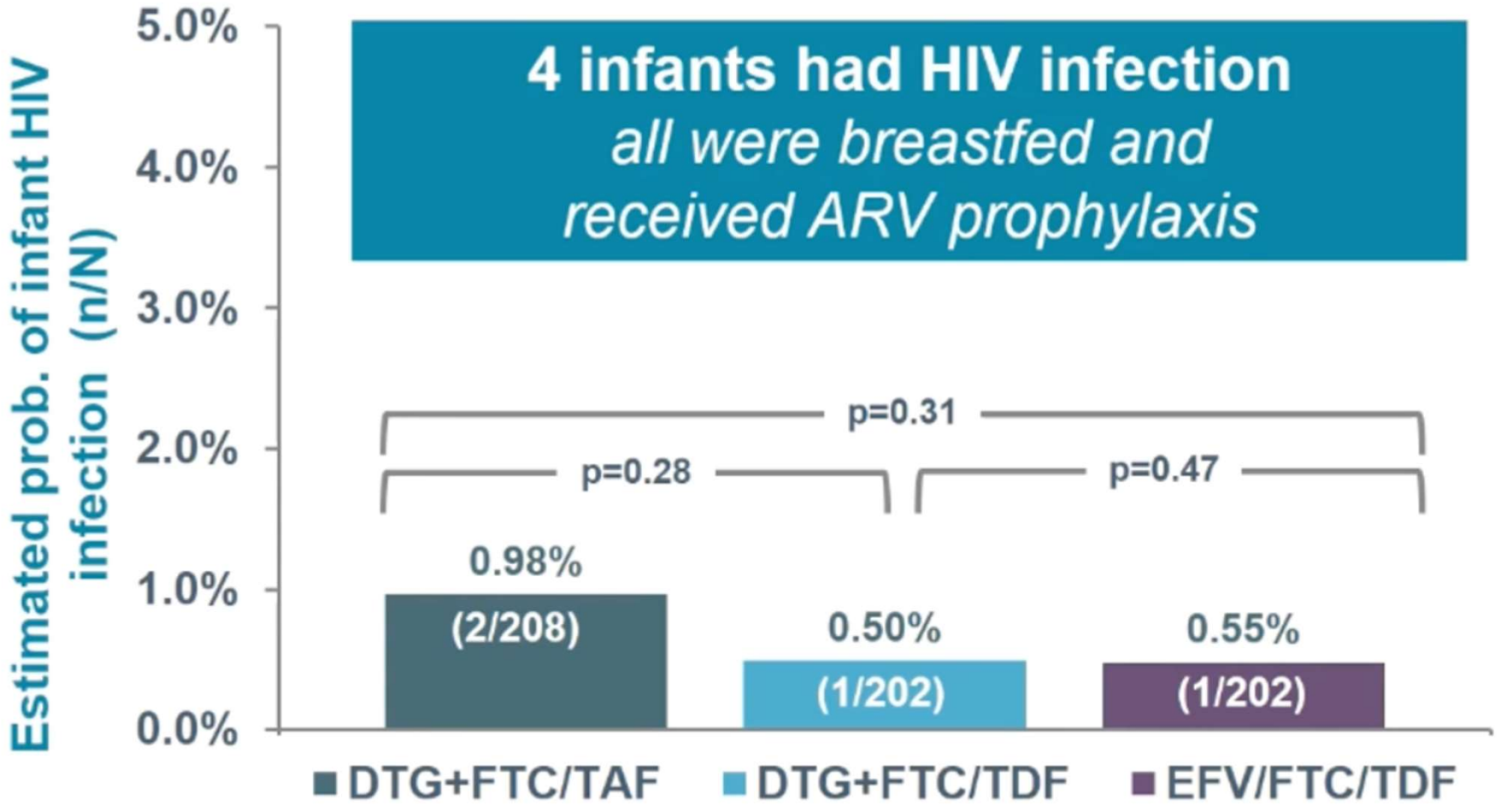
Results: IMPAACT 2010 Infant HIV Infection



Chinula L et al, Virtual CROI 2021, Abstract #177

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Summary: IMPAACT 2010

- TAF and DTG were safe through 50-week post-partum data
- All regimens were safe and efficacious
  - Infant mortality higher in EFV arm
  - More women had virologic failure in the EFV arm

Take-Away Point: This provides additional reassuring data about DTG and TAF use in pregnancy and post-partum

Update from ATLAS-2M

Background: ATLAS-2M

- ATLAS (CROI 2019): CAB/RPV IM q4w in treatment-experienced PWH was non-inferior to standard PO ART
  - 3 virologic failures occurred
- ATLAS-2M (CROI 2020): CAB/RPV IM q8w in treatment-experienced PWH was non-inferior to q4w at 48 weeks
  - Participants preferred q8w dosing
  - 10 virologic failures occurred (8 in q8w arm, 2 in q4w arm) and failed with both NNRTI and INSTI RAMs

Overton E et al, CROI 2020, Abstract #34.

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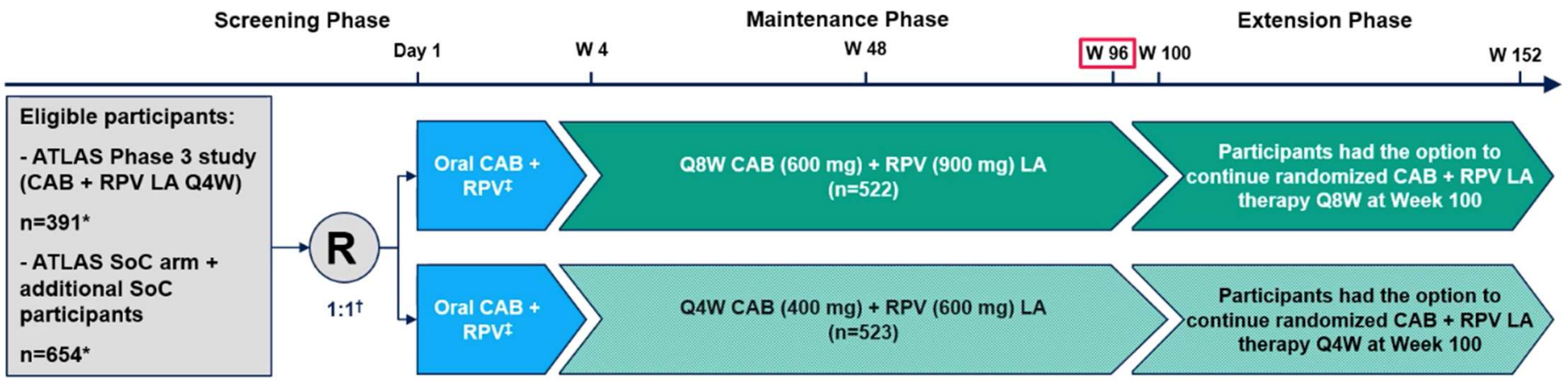
Study Design: ATLAS-2M



*ITT-E population. †Randomization was stratified by prior exposure to CAB + RPV (0 weeks, 1–24 weeks, >24 weeks). ‡Excluding participants with prior CAB + RPV exposure in ATLAS.
For further study design details, please see Overton et al. CROI 2020; Boston, MA. Presentation 3334.[1]
CAB, cabotegravir; CVF, confirmed virologic failure; ITT-E, intention-to-treat exposed; LA, long-acting; Q4W, every 4 weeks; Q8W, every 8 weeks; R, randomized; RPV, rilpivirine; SoC, standard of care; W, week.
Overton ET, et al. Conference on Retroviruses and Opportunistic Infections 2020; Boston, MA; March 8–11, 2020. Presentation 3334. Available from: www.croiwebcasts.org/p/2020croi/croi/34

Primary Endpoint: Proportion of participants with HIV RNA ≥ 50 at week 48

Other Endpoints: Incidence of confirmed virologic failure (VF), incidence of viral resistance in participants with confirmed VF, safety and tolerability

Jaeger H et al, Virtual CROI 2021, Abstract #401

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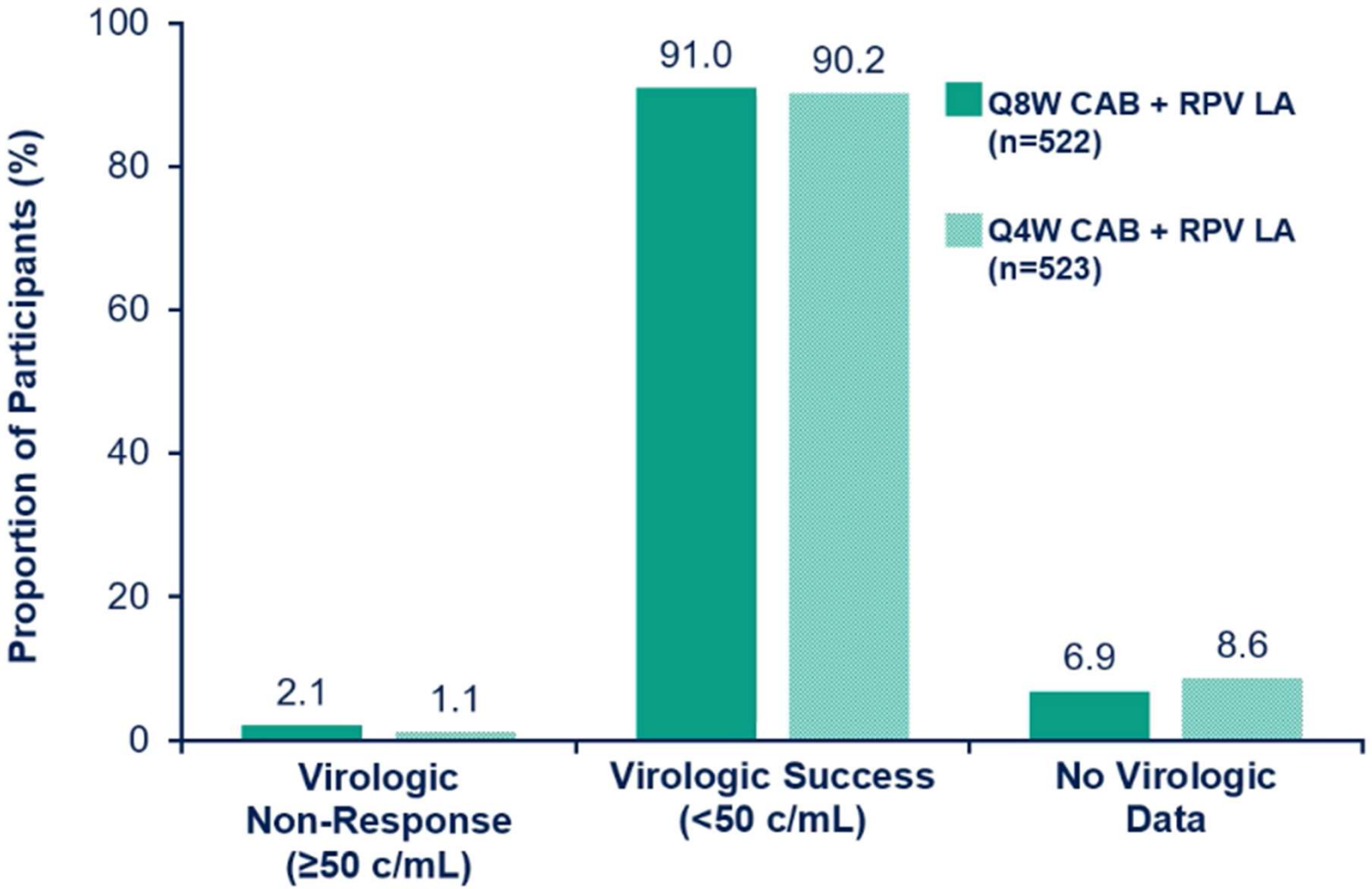
Results: ATLAS-2M 96 Week Data



Jaeger H et al, Virtual CROI 2021, Abstract #401

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Results: ATLAS-2M Adverse Effects

Table adapted from Jaeger H et al:

	Q8W n = 522 n (%)	Q4W n = 523 n (%)
Any adverse event (AE)	488 (93)	499 (95)
AE leading to withdrawal	18 (3)	19 (4)
# of injections	12,832	23,855
Injection site reaction (ISR) events	3400	4157
ISR pain	2662 (21)	3295 (14)
ISR nodule	188 (1)	297 (1)
ISR discomfort	134 (1)	148 (<1)
Median duration, days (IQR)	3 (2,5)	3 (2,5)
Participants withdrawing for injection-related reasons	7 (1)	11 (2)

Jaeger H et al, Virtual CROI 2021, Abstract #401

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Results: ATLAS-2M Resistance

Overall Summary of CVFs through Week 96						
	n	CVFs n (%)	CVFs with RPV RAMs*	RPV RAMs observed at failure	CVFs with IN RAMs*	IN RAMs observed at failure
Q8W	522	9 (1.7)	7/9	K101E, E138E/K, E138A, Y188L, Y181C	5/9	Q148R,† N155H†
Q4W	523	2 (0.4)	1/2	K101E, M230L	2/2	E138E/K, Q148R, N155N/H

Key Points About Resistance:

- Total VFs from ATLAS-2M = 11 (9 in q8w arm, 2 in q4w arm)
- One additional VF occurred between weeks 48 and 96 in the q8w arm
  - K103N and Y181C detected at VF & retrospectively at baseline in PBMC
  - No INSTI RAMs present at VF or baseline, though substitution L74I was present at baseline
- 10/11 with confirmed VF resuppressed on an alternative regimen
- All with confirmed VF retained DTG susceptibility

Jaeger H et al, Virtual CROI 2021, Abstract #401

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Summary: ATLAS-2M 96-Week Data

- Virologic efficacy, adverse events, and injection site reactions were similar in IM CAB/RPV q8w and q4w arms
- Confirmed VF occurred in 11 total PWH
  - 9 in the q8w arm, 2 in the q4w arm
- Most PWH with VF acquired both NNRTI and INSTI RAMs

Take-Away Point: Q8W dosing of CAB/RPV is effective and there are few VFs, but with failure, RAMs occurred

Jaeger H et al, Virtual CROI 2021, Abstract #401

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Lenacapavir: Capella Study

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Background: Lenacapavir

- Novel HIV-1 capsid inhibitor formerly known as GS-6207 that can be given as a long-acting subcutaneous injection
- Currently in development as a component of long-acting therapy for HIV-1
- Has activity in NRTI, NNRTI, INSTI, and PI-resistant HIV-1

Segal-Maurer S et al, Virtual CROI 2021, Abstract #127

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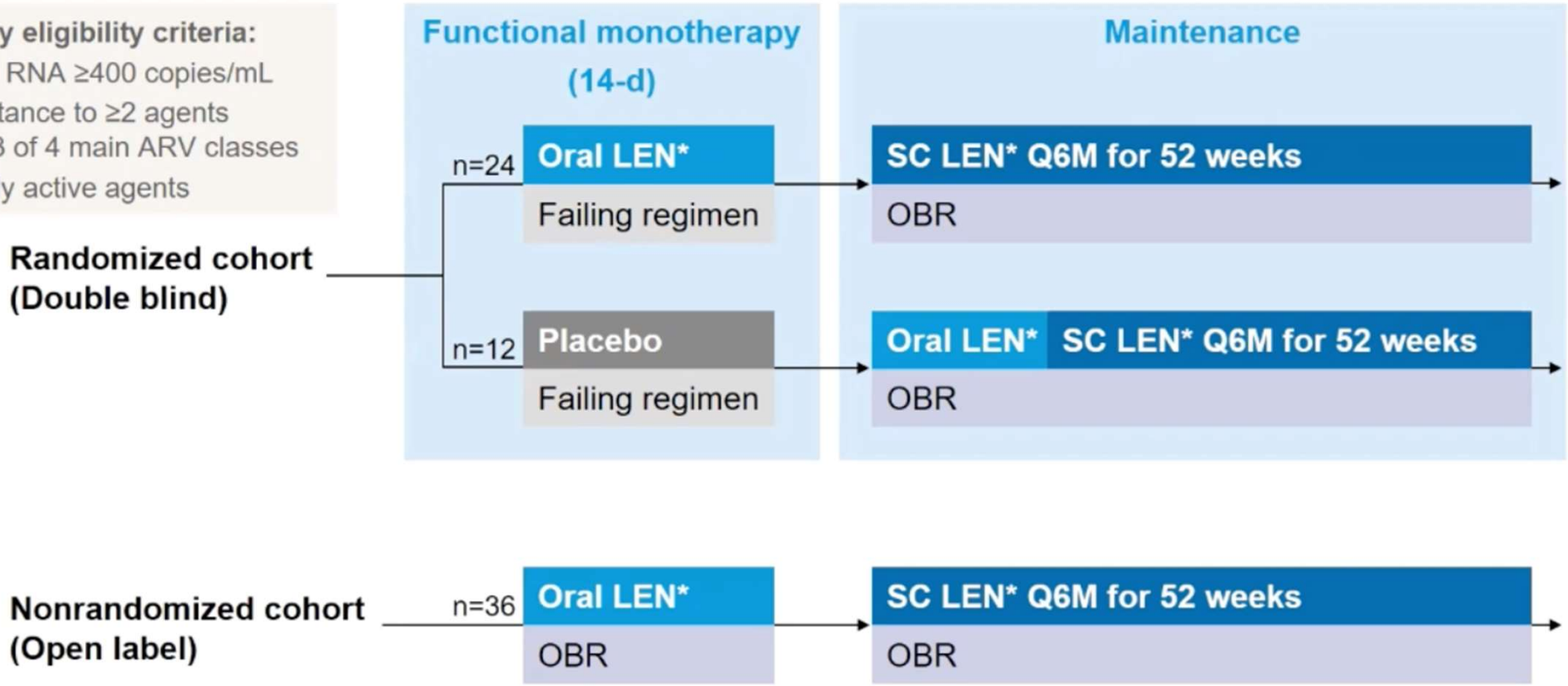
Study Design: Lenacapavir in MDR HIV-1

Key eligibility criteria:

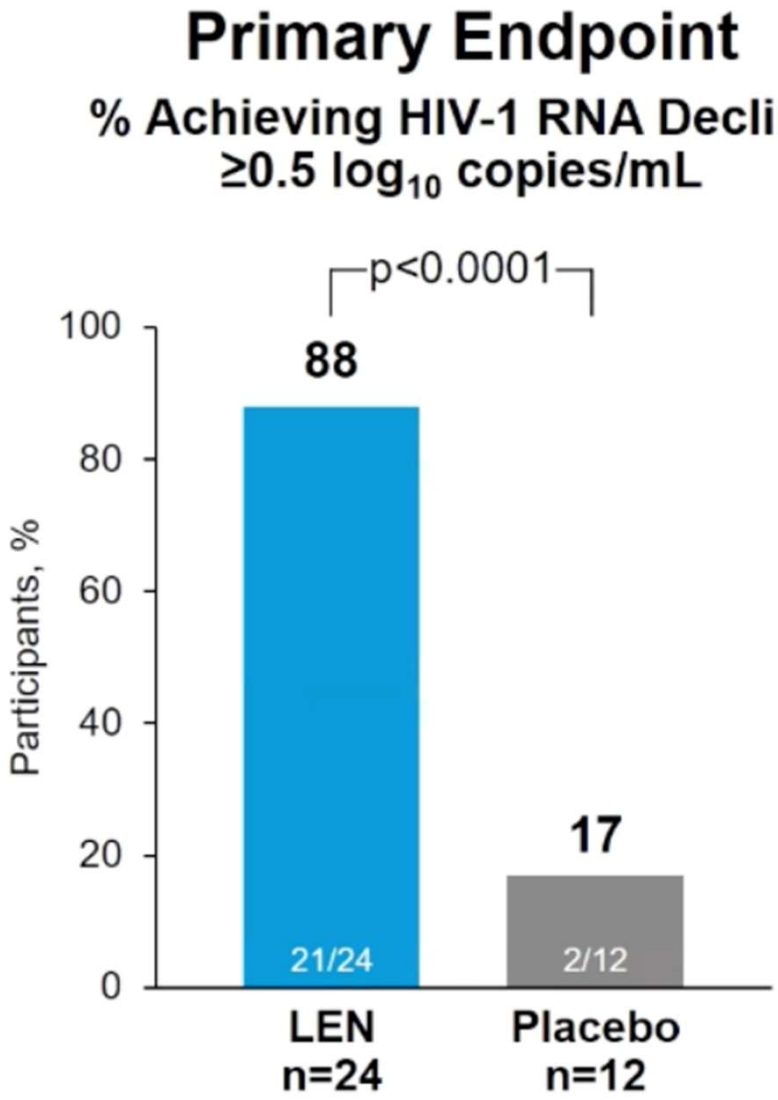
- HIV-1 RNA ≥400 copies/mL
- Resistance to ≥2 agents from 3 of 4 main ARV classes
- ≤2 fully active agents



Segal-Maurer S et al, Virtual CROI 2021, Abstract #127

MWAETC

Results: Lenacapavir in MDR HIV-1



Participant Characteristics:

- Median age: 52
- Median CD4 cell count: 150 cells/mm^3
- Median number of prior ARV regimens: 11
- Median years since HIV diagnosis: 24

Segal-Maurer S et al, Virtual CROI 2021, Abstract #127

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Summary: Lenacapavir in MDR HIV-1

- In the Capella study, early data shows that use of lenacapavir demonstrated antiviral activity against MDR HIV after 14 days and led to virologic suppression when paired with an OBR

Take-Away Point: Although much more data is needed, lenacapavir has the potential to become an important tool against MDR HIV in heavily treatment experienced PWH

ART Conclusions from Virtual CROI 2021

1. IMPAACT 2010: Data at 50 weeks post-partum show that TDF/FTC + DTG, TAF/FTC + DTG, and TDF/FTC/EFV are safe ART options during pregnancy and in the post-partum period
2. ATLAS-2M: Data at 96 weeks demonstrated virologic efficacy and safety of CAB/RPV IM q8w dosing, as compared to q4w dosing, with 11 total VFs
3. Capella Study: Early data of lenacapavir, a novel capsid inhibitor that can be administered in a long-acting fashion, demonstrated antiviral activity against MDR HIV

Chinula L et al, Virtual CROI 2021, Abstract #177; Jaeger H et al, Virtual CROI 2021, Abstract #401; Segal-Maurer S et al, Virtual CROI 2021, Abstract #127

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Acknowledgment

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The content in this presentation are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS, or the U.S. Government.

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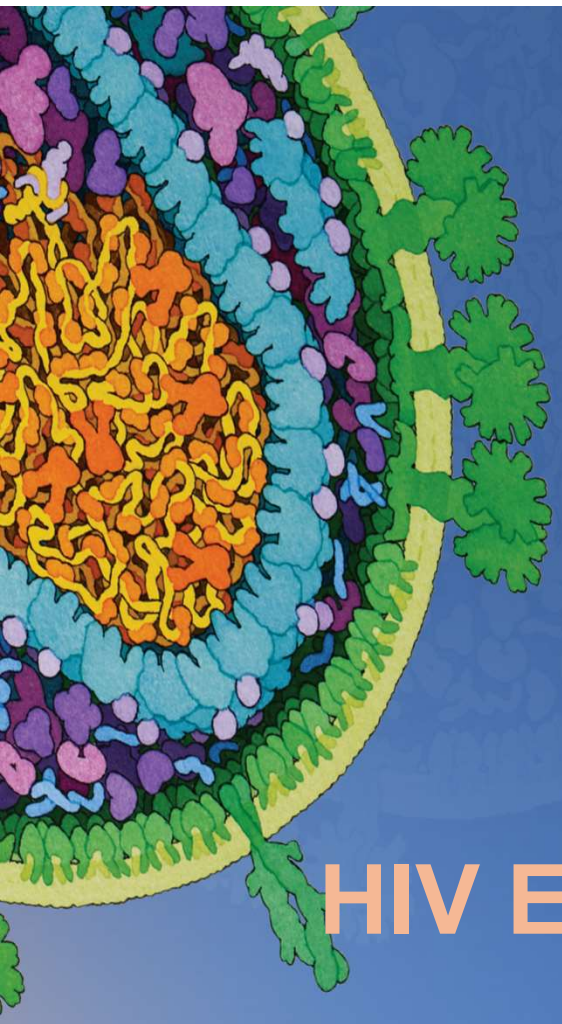


ORAL ABSTRACT

ACC UPDATE

ACC: vCROI Update HIV Epidemiology and Transmission

Ruanne V. Barnabas, MBChB, MSc, DPhil

University of Washington, Seattle, WA, USA

Disclosure: Regeneron Pharmaceuticals

CROI 2021

Outline
Addressing gaps to eliminate disparities in access to HIV Treatment and Prevention

- HIV Epidemiology
  - Race and COVID-19 infection rates among people living with HIV in the US
- HIV Transmission
  - HIV Prevention
    - Oral PrEP on Demand
    - Long-acting injectable PrEP
- Delivery of HIV Care during COVID-19

- Lots of exciting work!

Racial Differences in COVID-19 Infection Rates Among PWH in the United States

Islam. CROI 2021. Abstr 141.

Jessica Y Islam

University of North Carolina at Chapel Hill

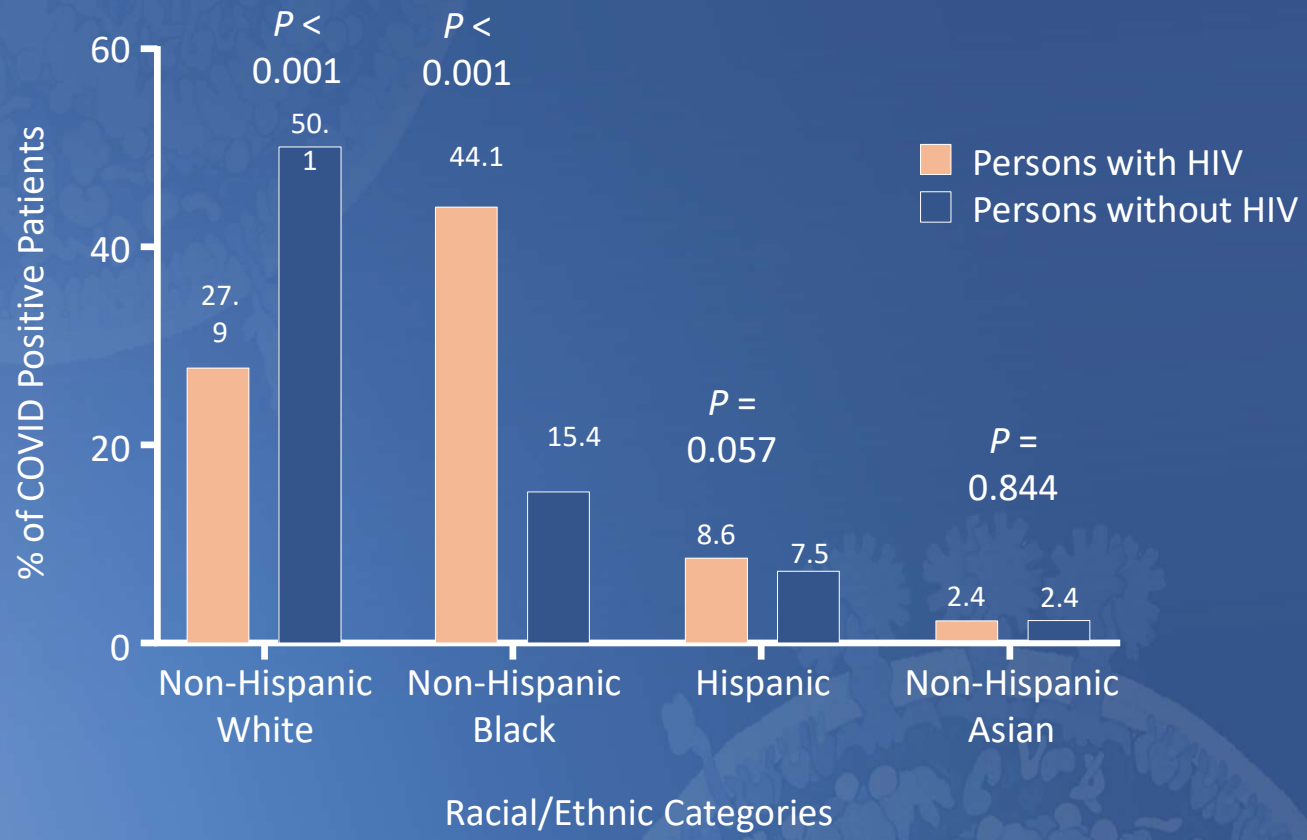
Race and COVID-19 Infection Rates Among People living with HIV: Background

- Racial minorities disproportionately affected by COVID-19 and HIV[1,2]
  - HIV: Black MSM had the highest number of new HIV diagnoses in 2018, followed by Hispanic MSM, then White MSM
  - COVID-19: Highest mortality rate among Blacks followed by American Indians/Alaska Natives, Hispanics/Latinos, Native Hawaiian/Pacific Islanders, Whites, and Asians
- Using EMR data, this study examined racial and ethnic disparities in COVID-19 infection rates among people with and without HIV in the US National COVID Cohort Collaborative[3]

1. CDC. HIV Surveillance Report. 2020;31. 2. The COVID Tracking Project. 3. Islam. CROI 2021. Abstr 141.

Slide credit: clinicaloptions.com

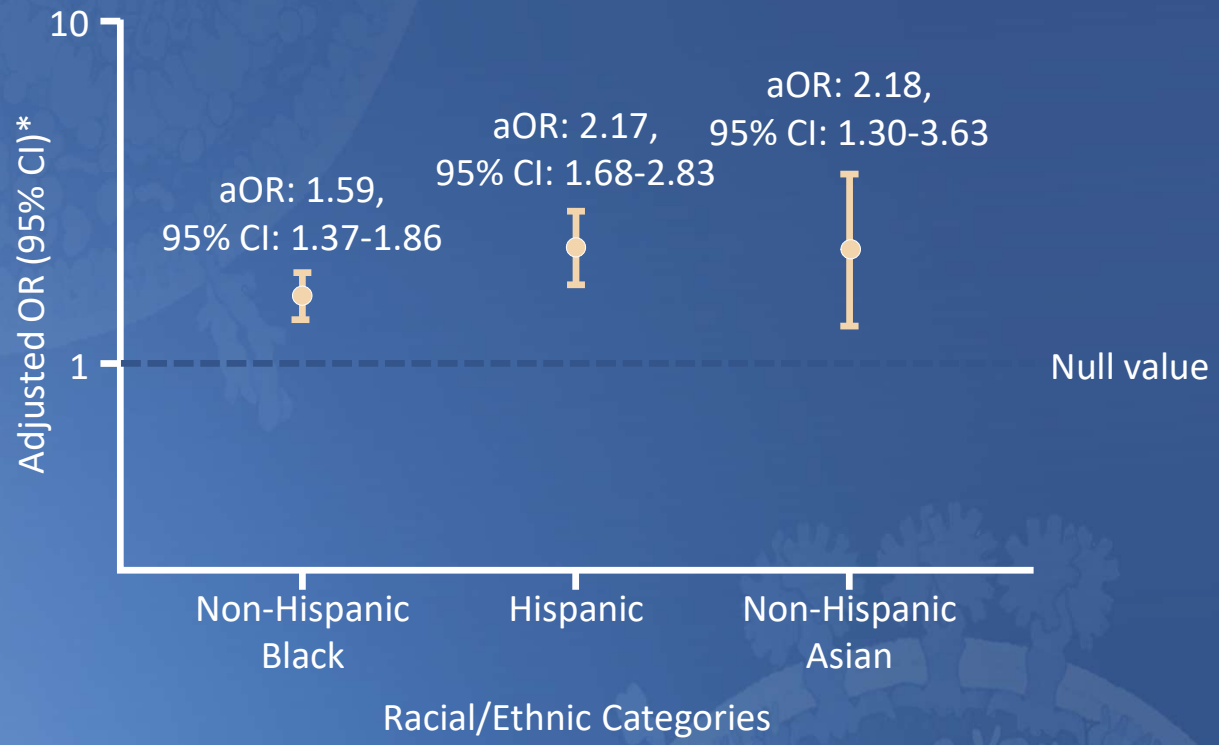
Race and COVID-19 Infection Rates Among People living with HIV: COVID-19 Positivity by Race and HIV Status



Islam. CROI 2021. Abstr 141. Reproduced with permission.

Slide credit:

Race and COVID-19 Infection Rates Among People living with HIV: Odds of COVID-19 Positivity By Race/Ethnicity in People living with HIV



*Reference category: non-Hispanic White; estimates adjusted for age, sex, Charlson-Deyo comorbidity score (modified to exclude HIV status).

Islam. CROI 2021. Abstr 141. Reproduced with permission.

Slide credit:

Race and COVID-19 Infection Rates Among People living with HIV: Conclusions

- Racial and ethnic disparities evident among people living with HIV testing positive for COVID-19 in the US
- Non-Hispanic Black, Hispanic, and non-Hispanic Asian patients with HIV more likely to contract COVID-19 vs non-Hispanic White patients
- Limitations
  - Data limited to US National COVID Cohort Collaborative dataset
  - Racial and ethnicity data were missing from > 10% of dataset
  - Sexual orientation or gender not available; birth sex was used
  - Social determinants of health (eg, income, employment type, health insurance) not available
- Represent structural inequities in access to health: parallels in HIV and COVID-19

Islam. CROI 2021. Abstr 141.

Slide credit:

DISPARITIES IN TIMELY RECEIPT OF ART PRESCRIPTION IN HIV CARE IN THE US, 2012-2018, CDC

Among treatment-naive adults who newly presented to HIV care:

1. Timely ART increased from 42% in 2012 to 82% in 2018.
2. More Black than white people with HIV faced lower rates of timely ART between 2012 and 2018.
3. During the same period, more people with HIV living in the South faced lower rates of timely ART than those in the West.
4. Overall, people with HIV with a history of drug dependence and/or abuse diagnosis experienced lower rates of timely ART.

Healio

Source: Li J, et al. Abstract 104. Presented at: Conference on Retroviruses and Opportunistic Infections; March 6-10, 2021 (virtual meeting).

Jun Li

- Opportunities for outreach and innovation
- What do we need to do to achieve equity?

Outline
Addressing gaps to eliminate disparities in access to Treatment and Prevention

- HIV Epidemiology
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- HIV Transmission
  - HIV Prevention
    - Oral PrEP on Demand
    - Long-acting injectable PrEP
- Delivery of HIV Care during COVID-19

ANRS Prévenir: High Efficacy of Daily or O… …sian M… P…

Sustained Delivery and Long Acting Agents for Prevention of HIV

Linda-Gail Bekker

Desmond Tutu HIV Centre, University of Cape Town

Linda-Gail Bekker

Desmond Tutu HIV Centre, University of Cape Town
South Africa

…lina

ANRS Prévenir: Background

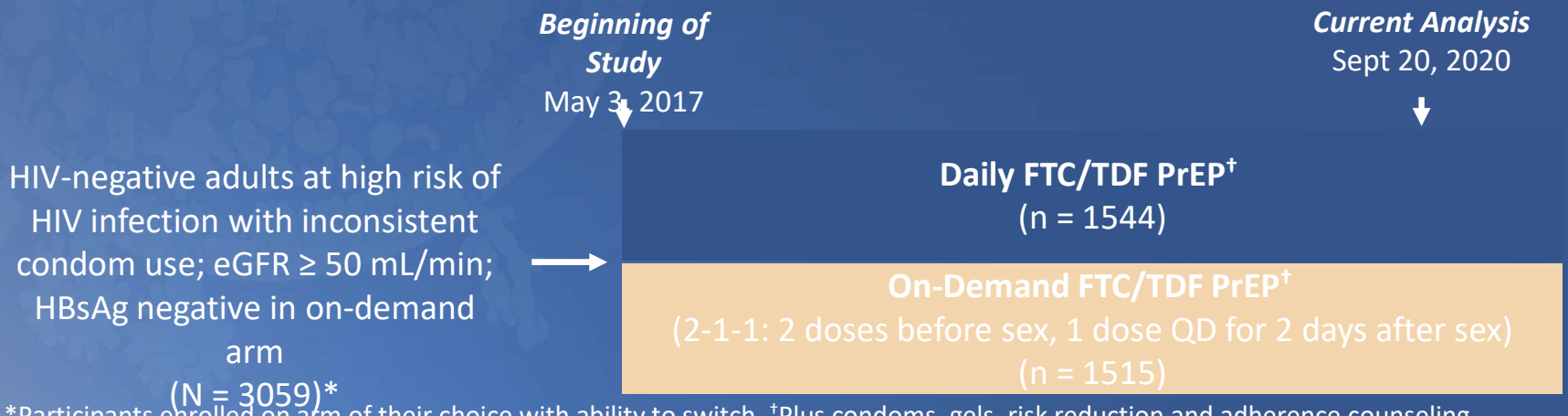
- ANRS IPERGAY: double-blind, randomized, placebo-controlled study showed on-demand FTC/TDF PrEP (taken before and after sex) highly effective in preventing HIV infection among MSM[1]
  - Relative reduction in HIV incidence with on-demand FTC/TDF vs placebo: 86% (95% CI: 40-98; *P* = .002)
  - Relative reduction in HIV incidence during open-label extension phase: 97% (95% CI: 81-100)[2]
- Efficacy of on-demand PrEP in real-world settings not fully established
- Current study among participants at high risk for HIV in Paris region designed to evaluate impact of on-demand and daily FTC/TDF PrEP on overall HIV incidence and HIV incidence with each dosing strategy among MSM[3]

1. Molina. NEJM. 2015;373:2237. 2. Molina. Lancet HIV. 2017;4:e402. 3. Molina. CROI 2021. Abstr 148.

Slide credit: clinicaloptions.com

ANRS Prévenir: Study Design

- Multicenter, open-label, prospective cohort study mainly in MSM (98.5%) from Paris



*Participants enrolled on arm of their choice with ability to switch. †Plus condoms, gels, risk reduction and adherence counseling, questionnaire on sexual behavior. Follow-up every 3 mos with STI and/or HIV testing, plasma creatinine measurement.

- Primary endpoint: ≥ 15% reduction in new HIV diagnoses among MSM in Paris vs rate reported by National Surveillance network in 2016
- Secondary endpoints: HIV incidence, PrEP adherence, sexual behavior, safety

Molina. CROI 2021. Abstr 148.

Slide credit:

ANRS Prévenir: HIV Incidence

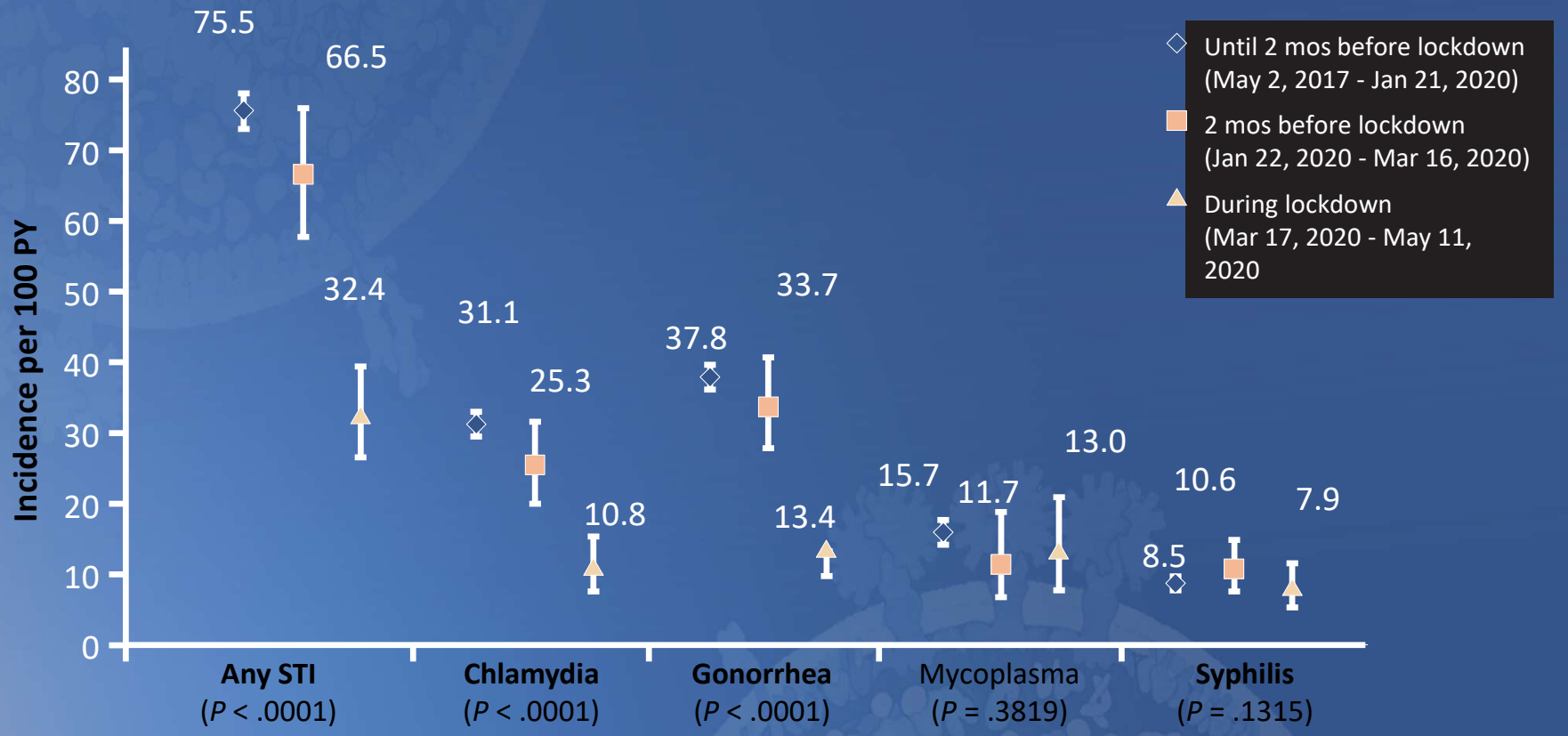
mITT Analysis	Daily PrEP (2583.25 PYFU)	On-Demand PrEP (2553.68 PYFU)	IRR (95% CI)
HIV incidence/100 PY (95% CI)	0.12 (0.02-0.34)	0.12 (0.02-0.34)	0.99 (0.13-7.38)

- Global HIV incidence: 0.11/100 PY (95% CI: 0.04-0.23)
  - PrEP stopped in all 6 cases of HIV infection
- Mean follow-up: 22.1 mos (5633 PYFU)
- Overall HIV infections averted: n = 361
  - Assuming incidence of 6.6/100 PY as reported for placebo arm in ANRS IPERGAY study
- Rate of study discontinuation: 14.4/100 PY

Molina. CROI 2021. Abstr 148.

Slide credit:

ANRS Prévenir: STI Incidence



Molina. CROI 2021. Abstr 148. Reproduced with permission.

Slide credit:

ANRS Prévenir: Conclusions

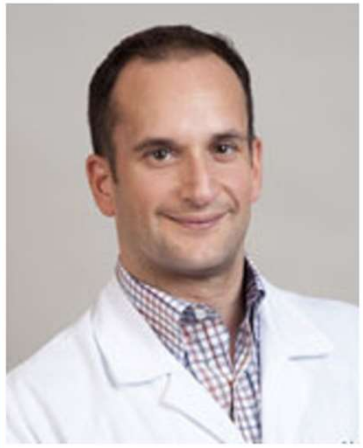
- Among MSM electing to use daily or on-demand oral FTC/TDF PrEP for prevention of HIV infection:
  - Both regimens highly effective for HIV prevention
    - Overall HIV incidence (6 infections): 0.11/100 PY (95% CI: 0.04-0.23)
  - Participants using daily FTC/TDF had more frequent sex
  - Both regimens generally well tolerated with few discontinuations
  - Most participants remained on study
  - High incidence of STIs

Molina. CROI 2021. Abstr 148.

Slide credit:

HPTN 083: Incident Infections and Emergent Resistance in MSM and TGW Receiving Cabotegravir Long-Acting PrEP

Marzinke. CROI 2021. Abstr 153.



Raphael J Landovitz

University of California Los Angeles

HPTN 083: Background

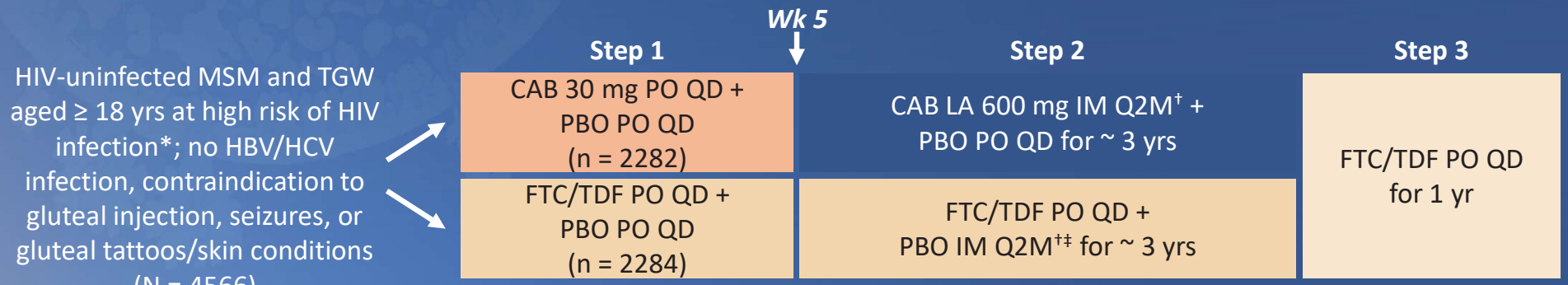
- Efficacy of oral FTC/TDF as PrEP among MSM, TGW, and heterosexual men demonstrated across multiple placebo-controlled trials
  - Reduction in HIV incidence vs placebo: daily dosing, 44% to 84%; on-demand dosing, 86%[1-4]
- PrEP with long-acting injectable CAB was significantly superior to daily oral FTC/TDF in reducing incident HIV infection among MSM and TGW at high risk of HIV infection in randomized phase IIb/III HPTN 083 study[5]
- Current report is a longitudinal analysis of HIV infections, viral load, CAB concentrations, and emergent resistance in HPTN 083[6]

1. Grant. NEJM. 2010;363:2587. 2. Thigpen. NEJM. 2012;367:423. 3. Baeten. NEJM. 2012;367:399.
4. Molina. NEJM. 2015;373:2237. 5. Landovitz. AIDS 2020. Abstr OAXLB0101. 6. Marzinke. CROI 2021. Abstr 153.

Slide credit:

HPTN 083: Study Design

- International, randomized, double-blind phase IIb/III study
  - At interim analysis on May 14, 2020, with 25% of endpoints accrued, DSMB recommended termination of blinded study due to crossing of prespecified O'Brien-Fleming stopping bound



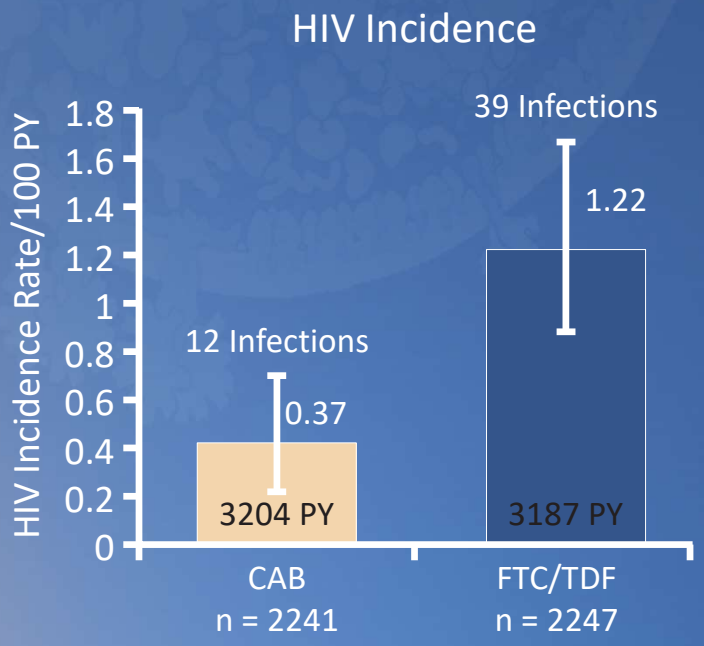
*Any noncondom receptive anal intercourse, > 5 partners, stimulant drug use, incident rectal or urethral STI or incident syphilis in past 6 mos; or SexPro Score ≤ 16 (US only). †First 2 doses given in Wks 5 and 9, then every 2 mos thereafter. ‡PBO for CAB injection was a 20% intralipid solution.

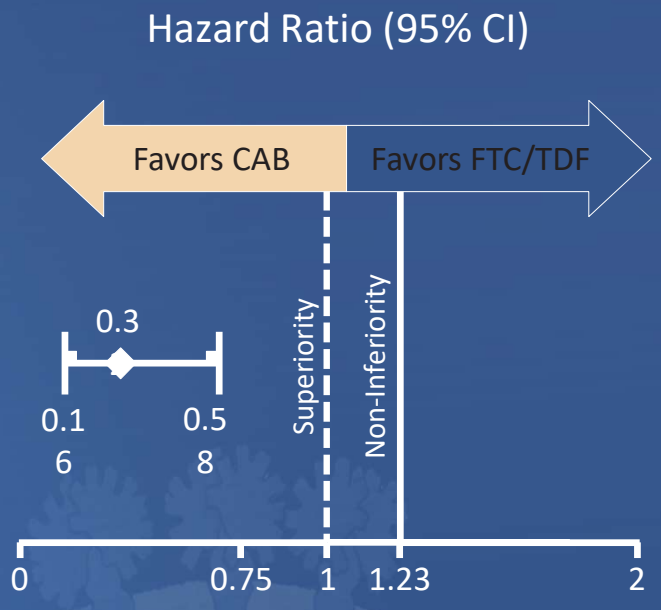
- Primary endpoints: incident HIV infections, grade ≥ 2 clinical and laboratory events
- Analysis of HIV infections in CAB arm: group A) HIV positive test at study enrollment; group B) no recent CAB exposure; group C) Infected during CAB oral lead-in period; group D) Infected in setting of on-time CAB injections

Marzinke. CROI 2021. Landovitz. AIDS 2020. Abstr OAXLB0101. Abstr 153. NCT02720094.

Slide credit:

HPTN 083: HIV Incidence





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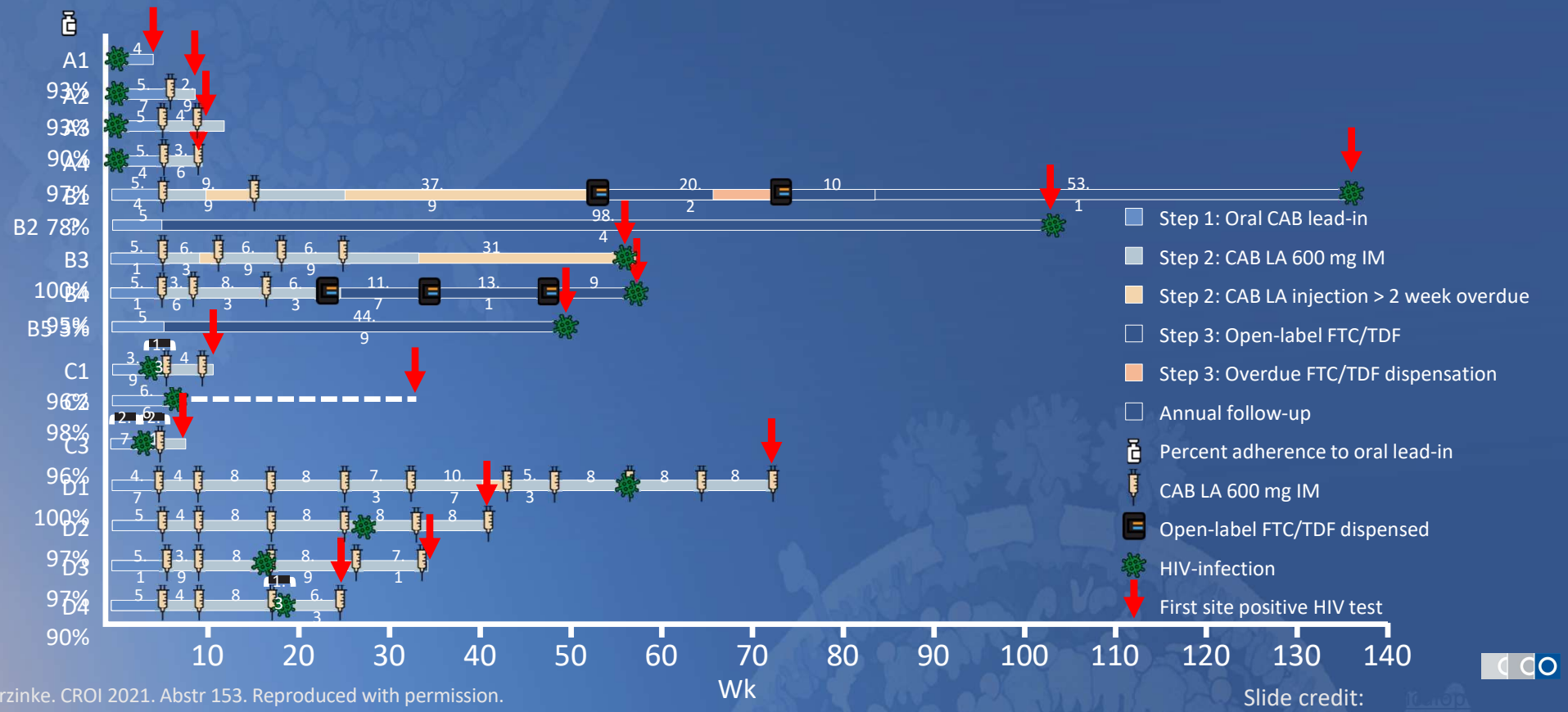
HPTN 083: HIV Infections in Cabotegravir Arm

- 4 baseline and 12 incident HIV infections observed in CAB arm



Marzinke. CROI 2021. Abstr 153. Reproduced with permission.

Slide credit:

HPTN 083: Conclusions

- Most infections occurred in the TDF/FTC arm due to low adherence.
- Suboptimal adherence observed in 37/39 incident infections in FTC/TDF arm
- Of 12 incident HIV infections in CAB arm, 8 occurred due to low adherence/low conc.
- 4 observed in participants with on-time injections and sufficient CAB concentrations
- Detection of HIV infection using standard testing algorithms delayed in patients receiving CAB LA → screen with viral load before starting CAB
- INSTI resistance
  - Observed upon viremic "escape" at higher CAB concentrations
  - Not observed in 3 tail-phase infections or 1 tail "escape" case
  - → Continue to monitor for INSTI resistance
- Therefore, prompt diagnosis and initiation of ART are important to avoid resistance with CAB LA

Marzinke. CROI 2021. Abstr 153.

Slide credit:

Outline
Addressing gaps to eliminate disparities in access to Treatment and Prevention

- HIV Epidemiology
  - Race and COVID-19 infection rates among people living w
    the US
- HIV Transmission
  - HIV Prevention
    - Oral PrEP on Demand
    - Long-acting injectable PrEP
- Delivery of HIV Care during COVID-19

- Lots of exciting work!

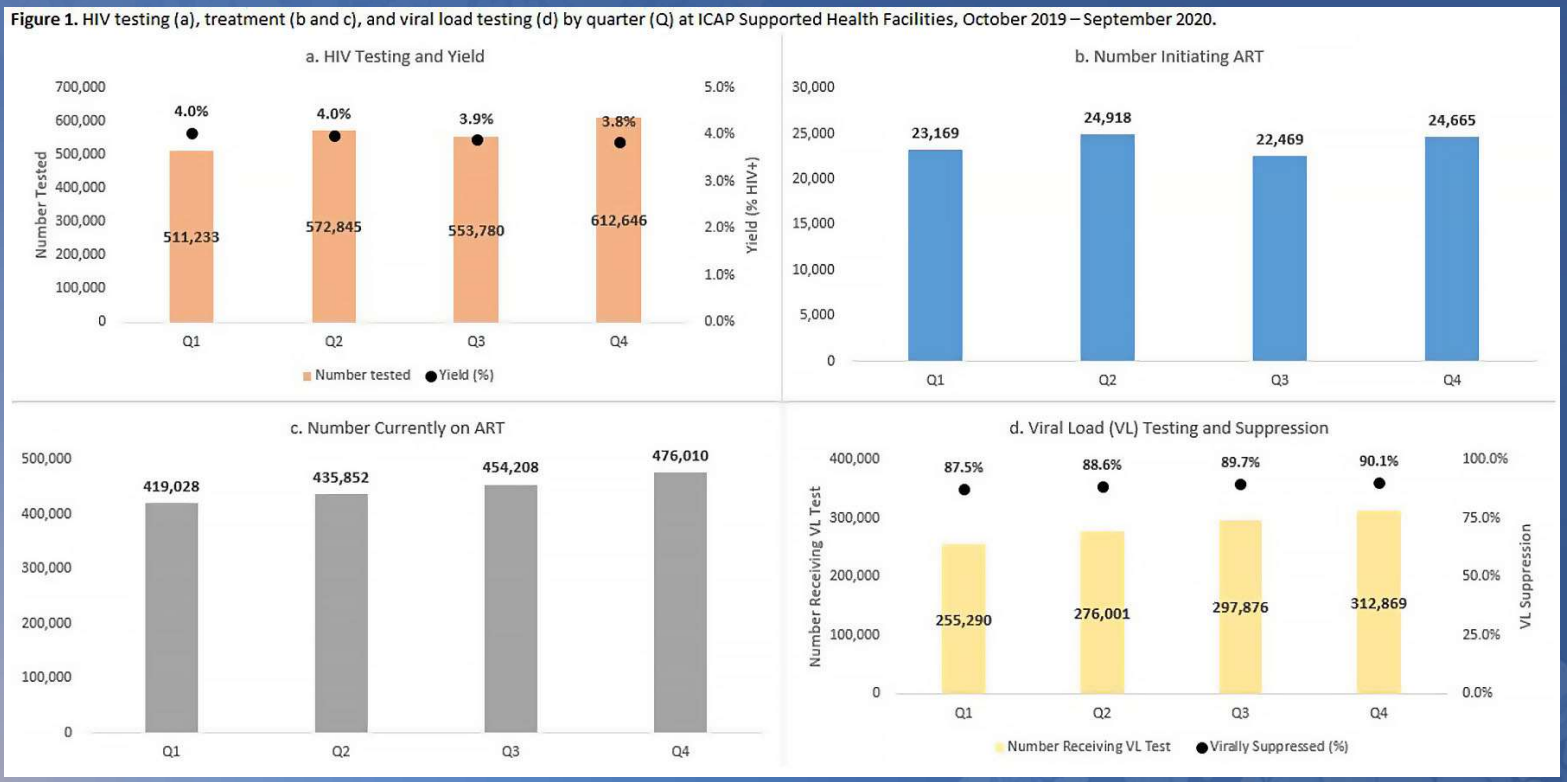
Tiffany G Harris

ICAP at Columbia University

ART delivery adapted to COVID-19 restrictions

- **RESILIENCE OF HIV ACTIVITIES DURING COVID-19 PANDEMIC AT HEALTH FACILITIES IN AFRICA (ICAP)**

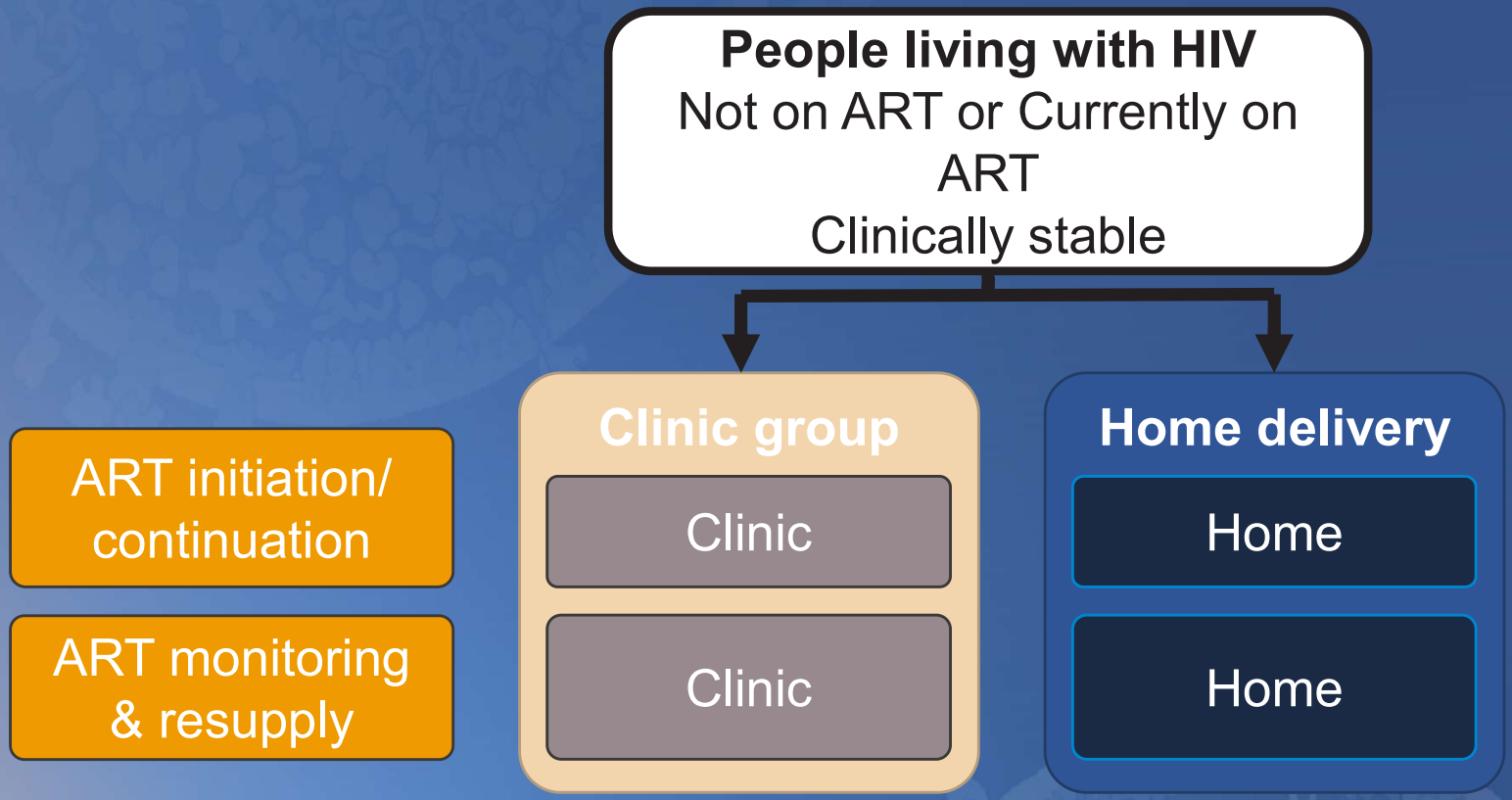
Figure 1. HIV testing (a), treatment (b and c), and viral load testing (d) by quarter (Q) at ICAP Supported Health Facilities, October 2019 – September 2020.



Large study

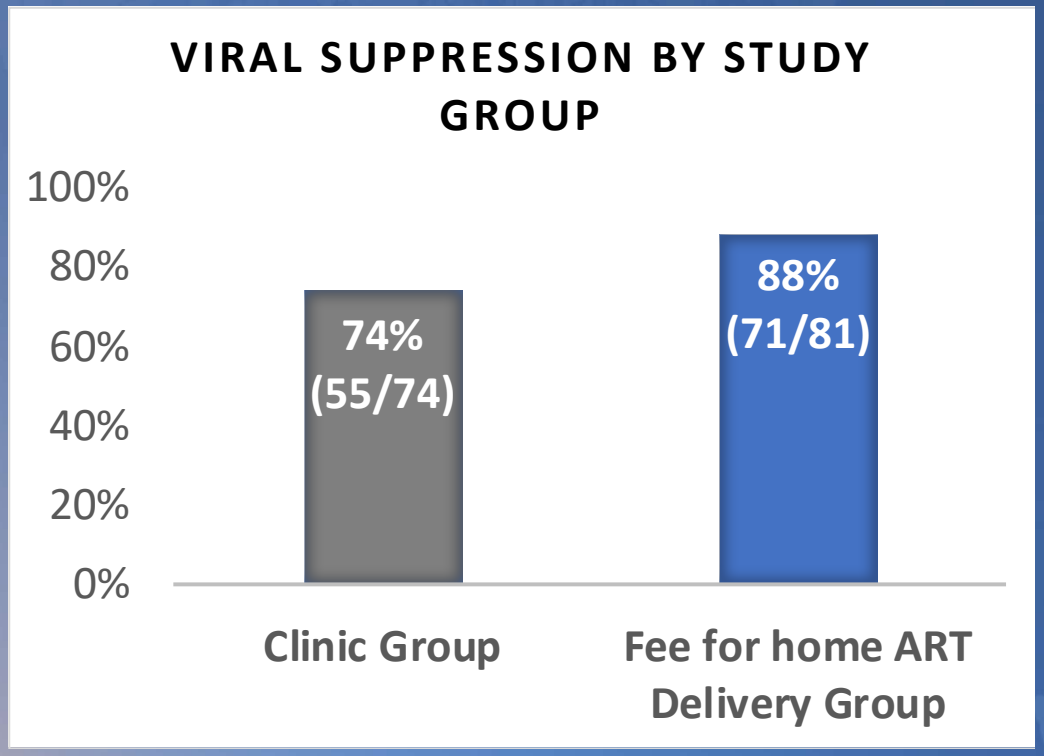
- COVID-19 pandemic acceleration from Q2 to Q3,
- # HIV tested decreased along with declines in number of HIV+ persons identified and new ART initiations
- Rebound was brisk as the pandemic progressed (Q4), demonstrating HIV program resilience.
- The # on ART, VL testing and VLS continued to increase throughout the period.
- This may have been, in part, due to recent expansions of non-HF-based differentiated service delivery models that include more diverse groups.

Deliver Health Study: Design



- One-time fee for home delivery was tiered based on participant income (ZAR 30, 60, and 90; ~$2, 4, 6).
- Outcomes: Payment of fee, acceptability, viral suppression (<20 copies/mL)

Secondary objective results: Viral suppression



Overall

Home ART vs Clinic
RR = 1.21 (1.02 - 1.42)
Superior
p = 0.0259

Fee for home ART delivery and monitoring increased viral suppression

*Relative risks adjusted for age >30 years and gender

Discussion

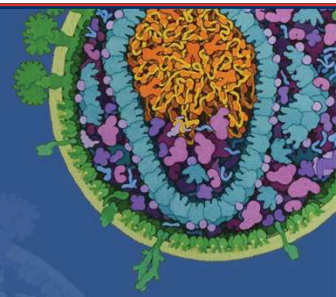
- A fee for home delivery and monitoring of ART significantly increased viral suppression – exceeding UNAIDS goal
- Home ART was highly acceptable in the context of low income and high unemployment, and improved health outcomes as a result
- Client fees may offset cost and increase treatment intention
- ART dispensing and monitoring outside the clinic has the potential to simplify access for client-centered care

vCROI take home messages for Epi and Prevention

- Disparities in access to care are opportunities for advocacy, innovation, scholarship, and collaboration
- New tools will be available for HIV prevention
  - Intermittent dosing for PrEP
  - Long-acting injectable CAB
  - OLE demonstration projects will help determine clinical guidelines
- COVID-19 ART delivery and monitoring
  - Could be superior to clinic based services
  - Could address disparities
  - Ongoing demonstration, monitoring, and evaluation will determine role of services outside the clinic

AETC AIDS Education & Training Center Program Mountain West

virtual CROI 2021
Conference on Retroviruses and Opportunistic Infections
March 6-10, 2021



CROI Update: HIV co-infections and comorbidities

Adrienne Shapiro, MD, PhD, MSc
Acting Assistant Professor, Departments of Global Health & Medicine
(Division of Allergy & Infectious Diseases)
16 March 2021

Disclosures

Grant funding: Vir Biotechnology

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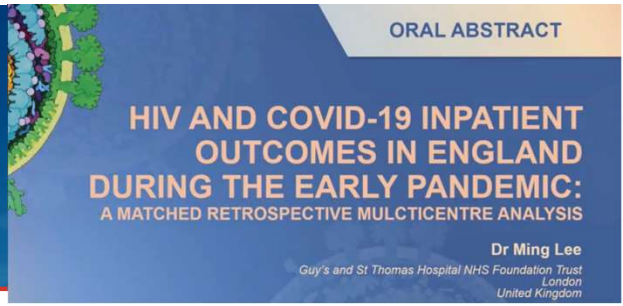
HIV & COVID-19

HIV & COVID-19



- **#142 Lee (UK):** Multicenter retrospective matched cohort of PLWH hospitalized with PCR+ COVID-19 in the UK, Feb-May 2020. (N=68)
- Matched up to 3:1 to persons without HIV hospitalized with COVID-19 on hospital site, gender, 5-year age band, SARS-CoV-2 test date week, socioeconomic index. (N=181)
- Outcome: time to improvement or discharge
- PLWH more likely to have CKD, ESRD, liver disease; less likely to have rheumatologic disease vs PLwoH
- PLWH had longer time to improvement/discharge (HR 0.57, 95%CI 0.39-0.85, p=0.005) vs PLwoH in crude analysis, but attenuated difference & significance after adjusting for comorbidities, age, and race/ethnicity. (HR 0.7, 95% CI 0.43,1.17, p=0.18).
- No difference in mortality seen
- **Conclusion: Among people hospitalized with COVID-19 in the UK, PLWH did not have significantly different outcomes vs. PLwoH after adjusting for other comorbidities**

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HIV & COVID-19

ORAL ABSTRACT

COVID-19 HOSPITALIZATION AMONG PEOPLE WITH HIV OR SOLID ORGAN TRANSPLANT IN THE U.S.

Jing Sun, MD, PhD
Johns Hopkins University
Baltimore, MD, USA

- **#103 Sun (USA):** National Covid Cohort Collaborative – routinely collected clinical data from 39 centers across US. PCR+ COVID between Jan 2020-Feb 2021

Odds of **hospitalization** in people with immuno-suppression, defined as HIV or SOT

Immunosuppression groups	Crude estimates		Adjusted estimates [a]		Adjusted estimates [b]	
	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value
HIV- / SOT- (N=501,416)	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
HIV+ alone (N=2,932)	2.14 (1.99, 2.30)	<0.01	1.63 (1.5, 1.76)	<0.01	1.32 (1.22, 1.43)	<0.01
SOT+ alone (N=4,633)	4.00 (3.77, 4.25)	<0.01	3.07 (2.88, 3.27)	<0.01	1.69 (1.58, 1.81)	<0.01
HIV+ / SOT+ (N=111)	5.37 (3.57, 8.06)	<0.01	3.50 (2.27, 5.42)	<0.01	1.65 (1.06, 2.56)	0.03

[a]Model adjusted for age, sex, race and ethnicity (Black non-Hispanic, white Hispanic, white non-Hispanic, others), and study

Odds of **invasive mechanical ventilation** in hospitalized patients with immuno-suppression, defined as HIV or SOT

Immunosuppression groups	Crude estimates		Adjusted estimates [a]		Adjusted estimates [b]	
	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value
HIV- / SOT- (N=153,310)	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
HIV+ only (N=1,421)	1.93 (1.63, 2.28)	<0.01	1.73 (1.45, 2.06)	<0.01	1.86 (1.56, 2.22)	<0.01
SOT+ only (N=2,956)	2.66 (2.40, 2.96)	<0.01	2.02 (1.81, 2.25)	<0.01	1.96 (1.74, 2.12)	<0.01
HIV+ / SOT+ (N=78)	4.35 (2.54, 7.45)	<0.01	3.92 (2.21, 6.96)	<0.01	3.73 (2.08, 6.67)	<0.01

HIV & COVID-19 Lightning round

 # 548 Yendewa (USA): Large commercial healthcare database cohort: 297,194 COVID-19 cases, including 1638 (0.6%) PLWH (83% on ART, 48% virally suppressed). In this cohort, propensity score-matched **PLWH had higher odds of hospitalization** (OR 1.26; 95% CI(1.04,1.53), **ICU and/or invasive mech vent** (OR 1.32, 95% CI 1.10, 1.58), **vs PLwoH**; comparable mortality at 30d (2.9% vs 2.3% p=0.12).

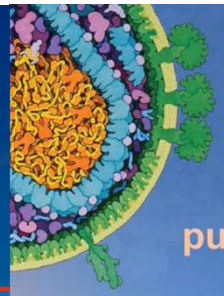
 # 547 Moran (USA): N=180 adults with HIV. Risk of hospitalization among PLWH with PCR+ COVID-19 is associated with # of comorbidities in a dose-dependent fashion. Age-adjusted OR for hospitalization (95% CI) of each additional comorbidity: 1.25 (1.01-1.53)

#543 Shapiro (USA): CNICS Cohort of PLWH (N=15,969); N=582 (3.6%) COVID-19 cases identified Mar-Dec 2020. Disproportionate # of COVID-19 cases in Black, Hispanic PLWH. Female, diabetes, BMI>=30 (but not CD4 count) associated with having COVID-19 among PLWH. **Increased adjusted relative risk (95% CI) of hospitalization** for PLWH w/ COVID-19 and:

Age >=60	1.78 (1.25, 2.54)	p=0.001	**ASCVD risk score**	Per 10% incr 1.41 (1.25, 1.60)	p<0.001
CD4 <=350	2.29 (1.63, 3.22)	p<0.001	**DM2**	1.45 (1.02, 2.06)	p=0.038
HCV	1.53 (1.04,2.25)	p=0.03	**eGFR<60**	2.28 (1.61, 3.24)	p=<0.001

TB & HIV

TB & HIV



ORAL ABSTRACT

Rifapentine + moxifloxacin for pulmonary tuberculosis in people with HIV (S31/A5349)

April C. Pettit, MD, MPH
Vanderbilt University Medical Center
Nashville, Tennessee, United States

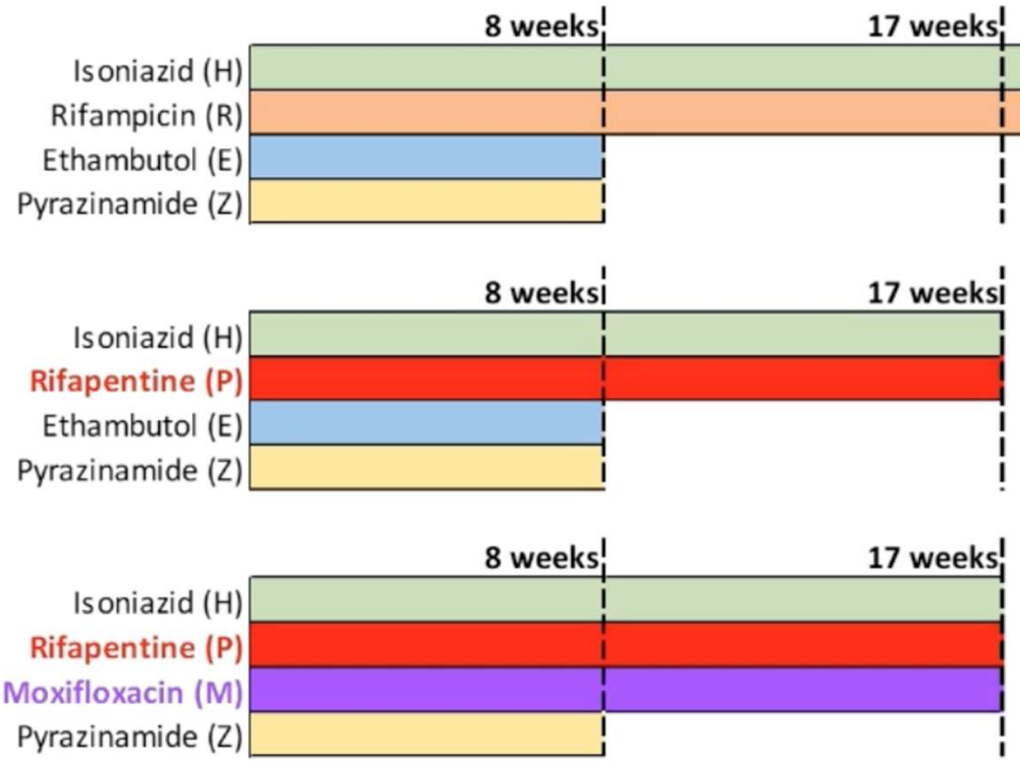
Methods-Study 31/A5349 Design

International, randomized, open-label, phase 3, non-inferiority trial

2HRZE / 4HR
"Control"

2HPZE / 2HP
"RPT"

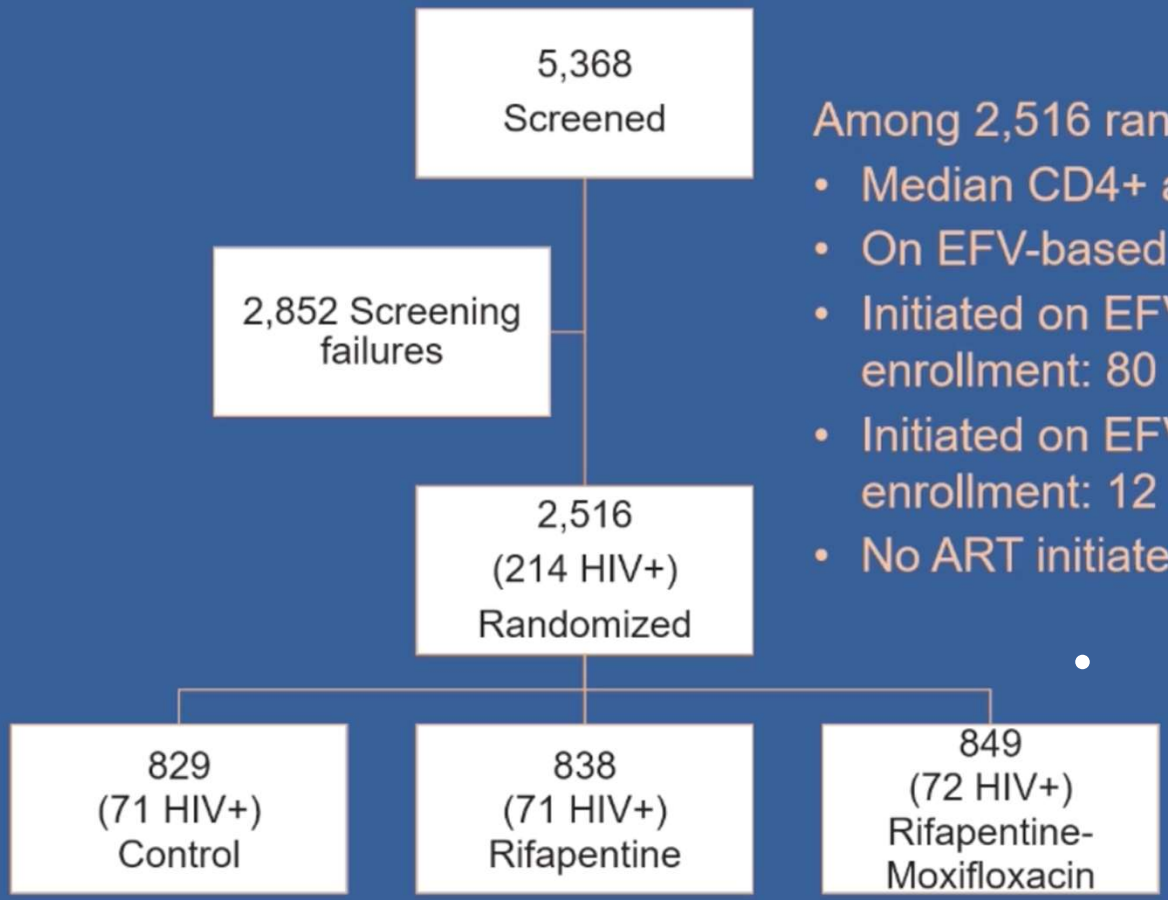
2HPZM / 2HPM
"RPT-MOX"



Primary endpoint: TB-free survival @12M after randomization

Non-inf margin: 6.6%

TB & HIV



Among 2,516 randomized, 214 (8%) were HIV+:

- Median CD4+ at enrollment: 344 cells/mL^3
- On EFV-based ART at enrollment: 113 (53%)
- Initiated on EFV-based ART within 8 weeks of enrollment: 80 (37%)
- Initiated on EFV-based ART >8 weeks following enrollment: 12 (6%)
- No ART initiated during trial participation: 9 (4%)

- **Criteria for PLWH**

-CD4+ count>100 cells/mm3
-EFV-based ART
*already on EFV-based with VL <200
*starting EFV-based ART within 8 weeks of TB tx

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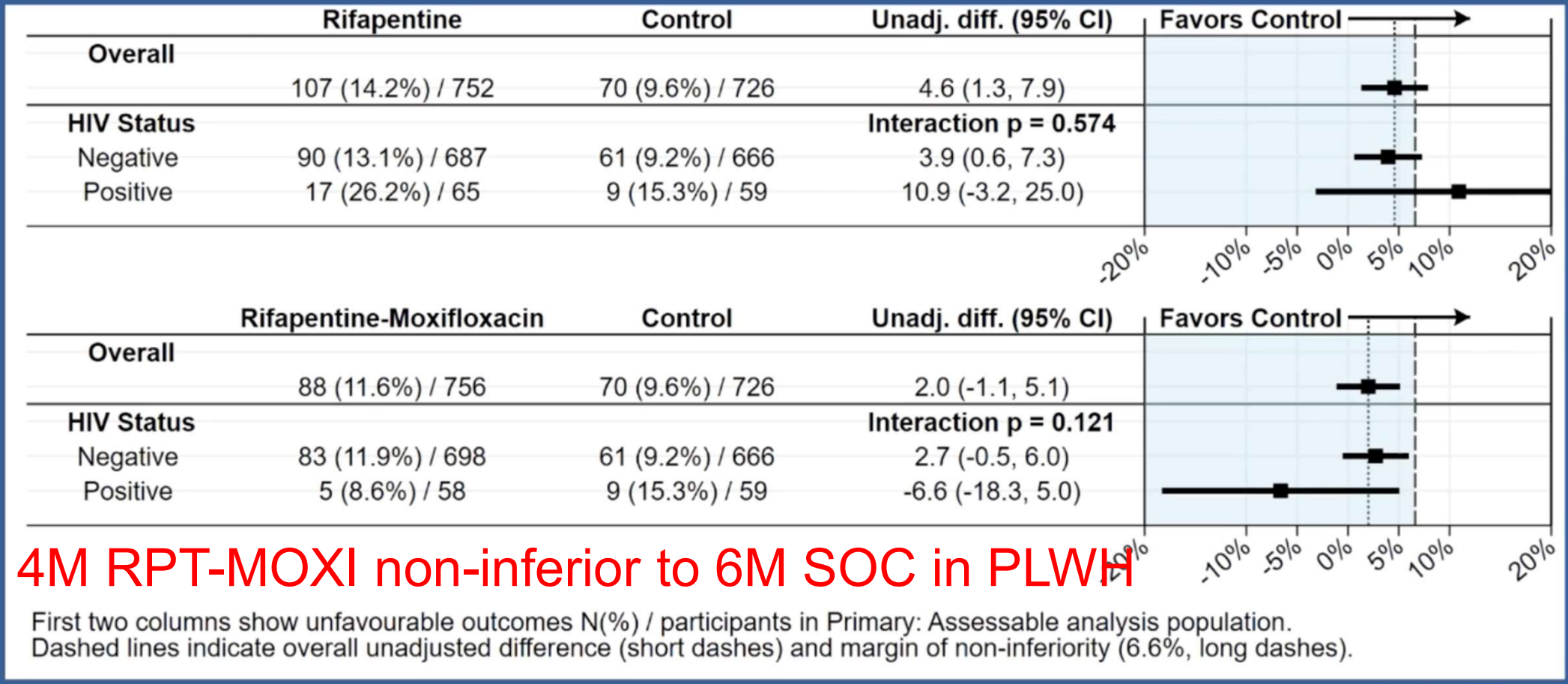
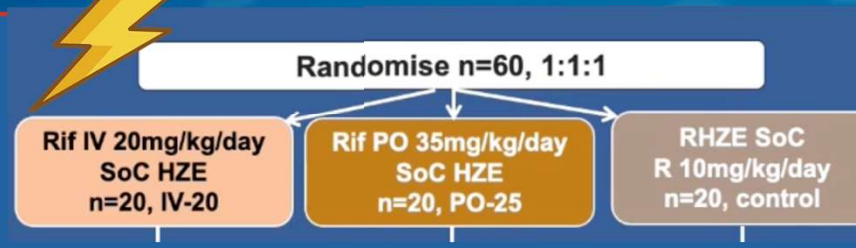
Efficacy outcomes (% favorable)	Control	Rifapentine Moxifloxacin	Rifapentine	Total
Microbiologically eligible	50/64 (78%)	**53/62 (85%)**	48/68 (71%)	151/194 (78%)
Assessable	50/59 (85%)	**53/58 (91%)**	48/65 (74%)	151/182 (83%)
Per-Protocol 95	**44/45 (98%)**	43/45 (96%)	41/52 (79%)	128/142 (90%)



4M RPT-MOXI non-inferior to 6M SOC in PLWH

First two columns show unfavourable outcomes N(%) / participants in Primary: Assessable analysis population.
Dashed lines indicate overall unadjusted difference (short dashes) and margin of non-inferiority (6.6%, long dashes).

TB & HIV Lightning Round



#131 Cresswell (Uganda):
Phase II TB Meningitis tx w/ high-dose RIF
-90% participants had HIV, median CD4+=50
-SOC RIF reached detectable CSF levels in <50%, vs 94% in both intensified arms
-No excess toxicity with high-dose RIF (not powered for clinical endpoints)

RifT STUDY

#132 Sun (Taiwan): BIC/TAF/FTC with 1HP for LTBI in PLWH with VL <200
- N=50 started, 1 discontinued
-16 had VL rebound during 1HP, all re-suppressed at 3 & 6 months post-1HP

#178 Gupta (multi): Pregnancy outcomes in PLWH receiving 9M INH for prevention of TB
N=128 women with known pregnancy outcomes while on study
Increased risk of non-live birth (RR 1.92 (1.11, 3.33) and other adverse pregnancy outcome in INH-exposed 1st trimester

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Hepatitis C

Hep C

ORAL ABSTRACT

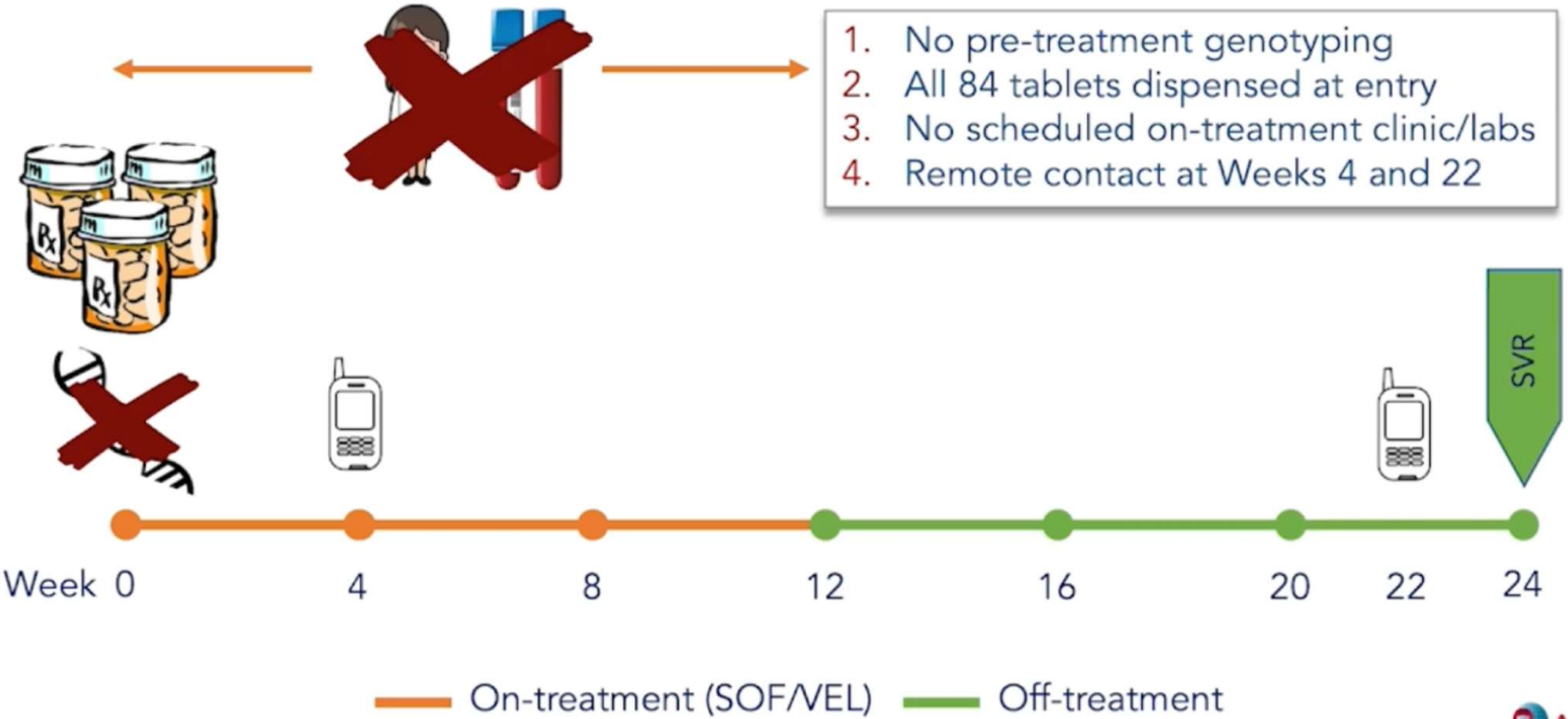
#135

A SIMPLE AND SAFE APPROACH TO HCV TREATMENT: FINDINGS FROM THE ACTG 5360 (MINMON) TRIAL

Sunil S Solomon

Johns Hopkins University School of Medicine
Baltimore, MD

The "MINMON" Approach



Epclusa

Baseline Characteristic	N=399
Median age in years (Range)	47 (20 – 82)
Female sex at birth, n (%)	139 (35)
Identity across transgender spectrum, n (%)	22 (6)
Race/Ethnicity, n(%)	
Non-Hispanic White	99 (25)
Non-Hispanic Black	57 (14)
Non-Hispanic Asian	113 (28)
Hispanic, any race	95 (24)
History of substance use*, n (%)	
Current	56 (14)
Previous	170 (43)
Never	171 (43)
Cirrhosis (FIB-4 ≥ 3.25), n (%)	34 (9)
HIV co-infection, n(%)	166 (42)
*On cART, HIV RNA<400 copies/ml, n (%)****	164 (99)
Median HCV RNA in log10 IU/ml (IQR)	6.1 (5.6 – 6.6)
HCV Genotype**, n(%)	
Genotype 1	249 (62)
Genotype 2	26 (7)
Genotype 3	80 (20)
Genotypes 4, 5, 6, 7	41 (10)

Exclusion:

- De-compensated cirrhosis
- Pregnancy
- Chronic HBsAg+

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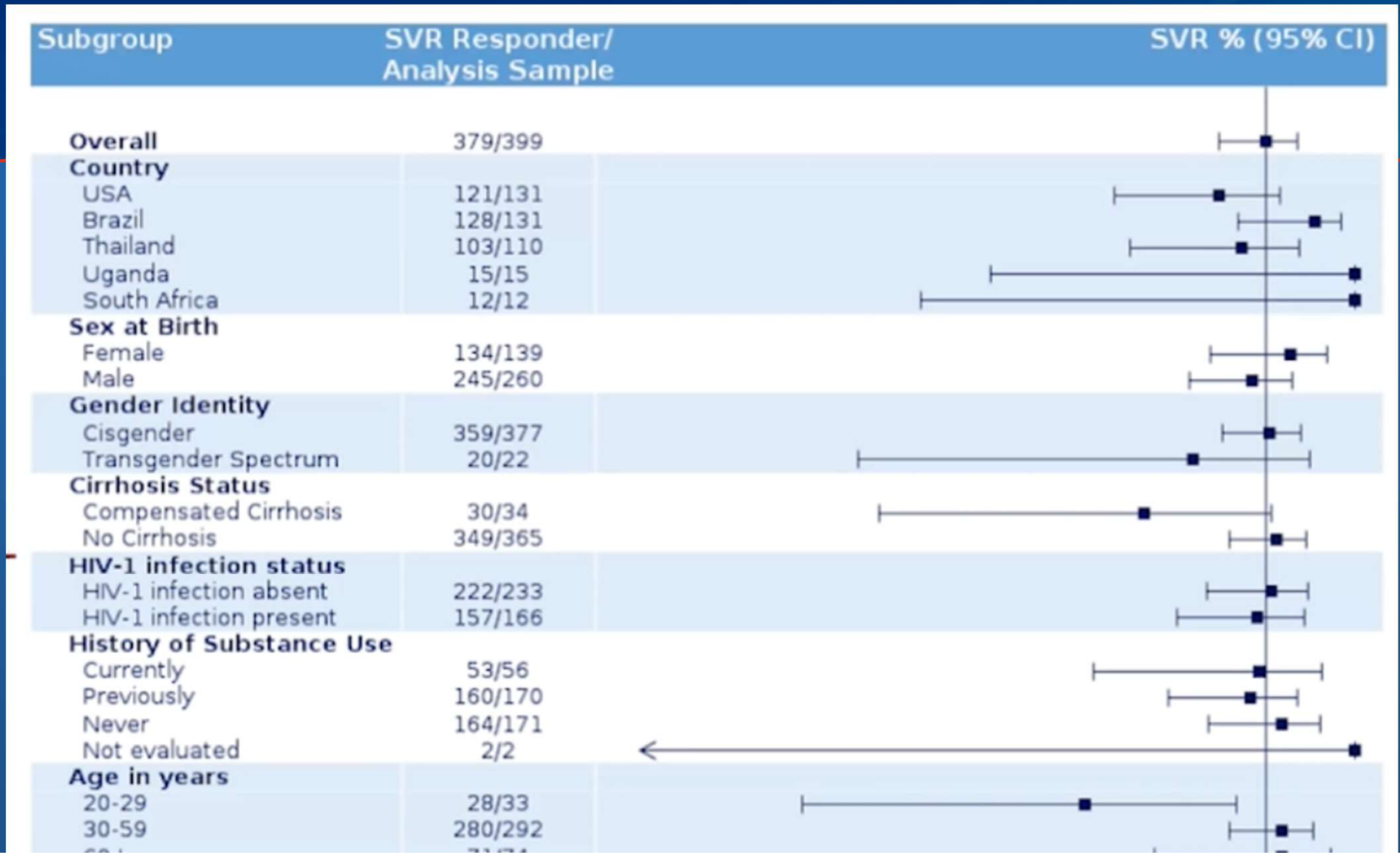

N=20 nonresponders (34% self-reported incompleted adherence)

SAE occurrence: 3.5%, none related to treatment or resulting in d/c study med

Conclusions

Multi-month dispensing, minimal-interaction HCV treatment safe and effective for treatment-naïve persons without decompensated cirrhosis

Limitations:
-No control group
-Not fully generalizable – PLWH limited to persons with VL<400 → may be more adherent
-Sequence data needed to determine non-response/relapse vs reinfection

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HCV Lightning Round

#446 Reipold: Self-testing for HCV is acceptable and preliminarily feasible in multi-country study using an OraQuick HCV rapid antibody test.
N=775 PWID and MSM in Georgia, Kenya, Vietnam, China (unassisted ST), and gen pop in Egypt (assisted)
High acceptability (>90%) would use, variable ease of use & reliability of results.

#440 Martin: Cost-effectiveness modeling to determine testing frequency to achieve HCV elimination in MSM in the US (90% reduction in incidence by 2030):
q6M for MSM with HIV; annually for MSM using PrEP; at time of HIV testing for non-PrEP-using MSM
Modestly Increased frequency vs CDC/IDSA/AASLD guidelines
ICER: $35,000/QALY gained (WTP $100,000/QALY gained)

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HIV & Malignancies

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HIV & Malignancies Lightning Round

 # 478 Sigel : VACS cohort analysis: No increased risk of toxicities/side effects in PLWH receiving chemo or XRT for lung cancer (stage I-III) vs PLwoH

#471 Chiao: In a cohort of male US Veterans with well-controlled HIV (N=25,088), colorectal cancer risk (total cases 105) was decreased (HR, 0.60; 95% CI, 0.36-1.00) in persons with a statin use history (vs never stains) and increased in persons with diabetes (HR, 1.57; 95% CI, 1.00-2.48). Lower nadir CD4 also associated with increased risk.

#473 Weiss: In a cohort of N=144 cis WLH screened for anal cancer and cervical HPV, 31% had bx-proven anal HSIL, anal HPV more common than cervical; high-risk HPV types not concordant between anal and cervical sites.

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Acknowledgment

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