AETC AIDS Education & Training Center Program Mountain West

HIV Testing in PrEP
Injectable Cabotegravir

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Last Updated:

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Disclosures

As of June 24, 2021, only FTC/TDF and FTC/TAF are approved by the U.S. Food and Drug Administration (FDA)

Approval is only for use as daily PrEP in some, but not all populations

This talk will include discussion of other options for PrEP

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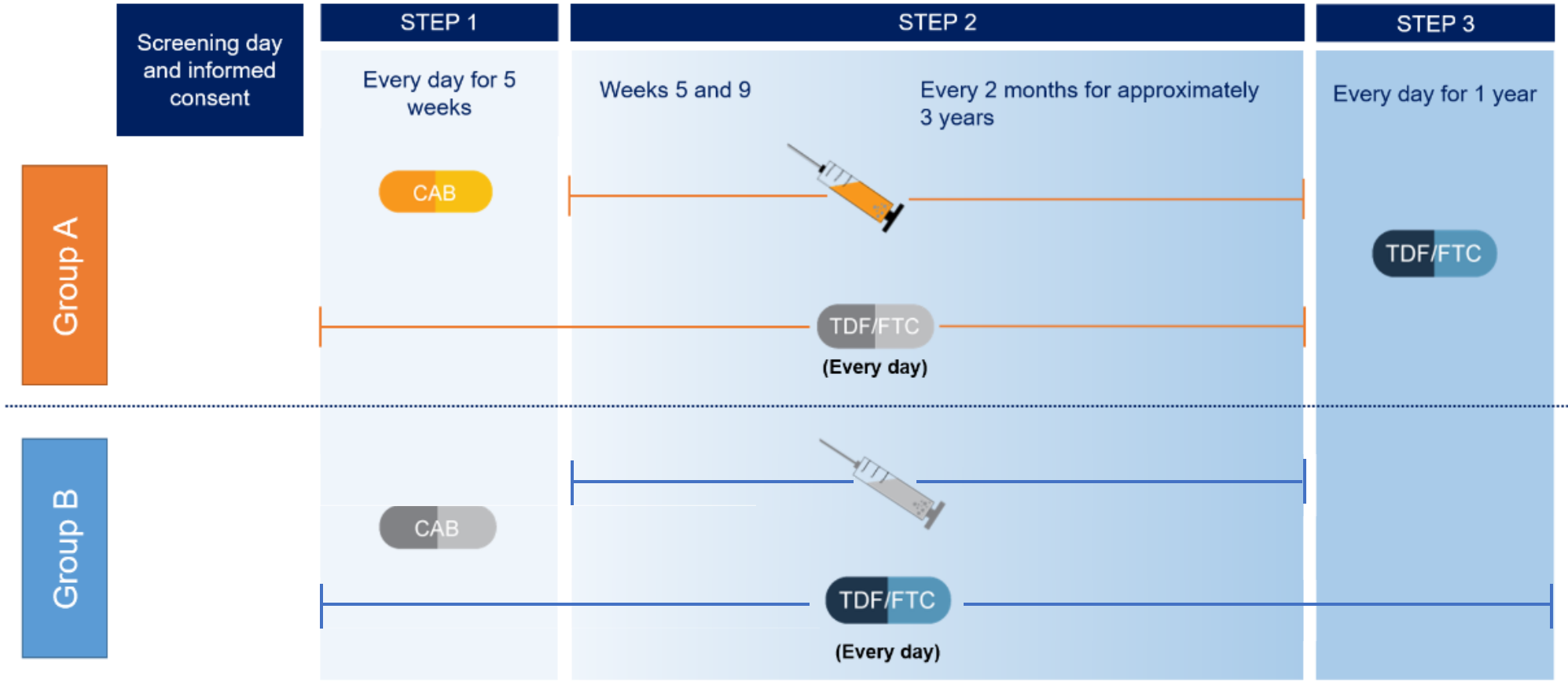
HPTN 083 and 084 Study Designs



Slide courtesy of Dr. Landovitz

Injectable cabotegravir (CAB)

- Superior to oral FTC/TDF
  - HPTN 083: 4570 cisgender men and transgender women
    - 13 infections in the CAB arm — incidence rate 0.41%
    - 39 infections in the FTC/TDF arm — incidence rate 1.22%
    - Hazard ratio — 0.34 (95% CI 0.18-0.62)
  - HPTN 084: 3223 cisgender women
    - 4 infections in the CAB arm — incidence rate 0.21%
    - 34 infections in the FTC/TDF arm — incidence rate 1.79%
    - Hazard ratio — 0.11 (95% CI 0.04-0.32)

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Injectable cabotegravir (CAB)

Submitted to FDA with approval expected late 2021/early 2022

CDC Draft Guidelines: “Conditioned on a PrEP indication approved by FDA, PrEP with intramuscular cabotegravir (CAB) injections is recommended for HIV prevention in men and women who report sexual behaviors that place them at substantial ongoing risk of HIV exposure and acquisition. **(IA)”**

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HIV Testing Plan

- Real time:
  - Screening visit (within 14d of enrollment)
    - HIV RNA test
  - Entry and follow-up
    - Point-of-care test
    - Laboratory-based Ag/Ab combo test
- Confirmation
  - Supplemental antibody testing
  - Quantitative HIV RNA
  - Ultrasensitive DNA testing (performed at Johns Hopkins U)
- Retrospective (for incident HIV-positive cases) until negative
  - Ag/Ab combo test
  - Qualitative HIV RNA → quantitative HIV RNA (“viral load”)
  - Single copy viral load test as needed (U Pittsburgh)

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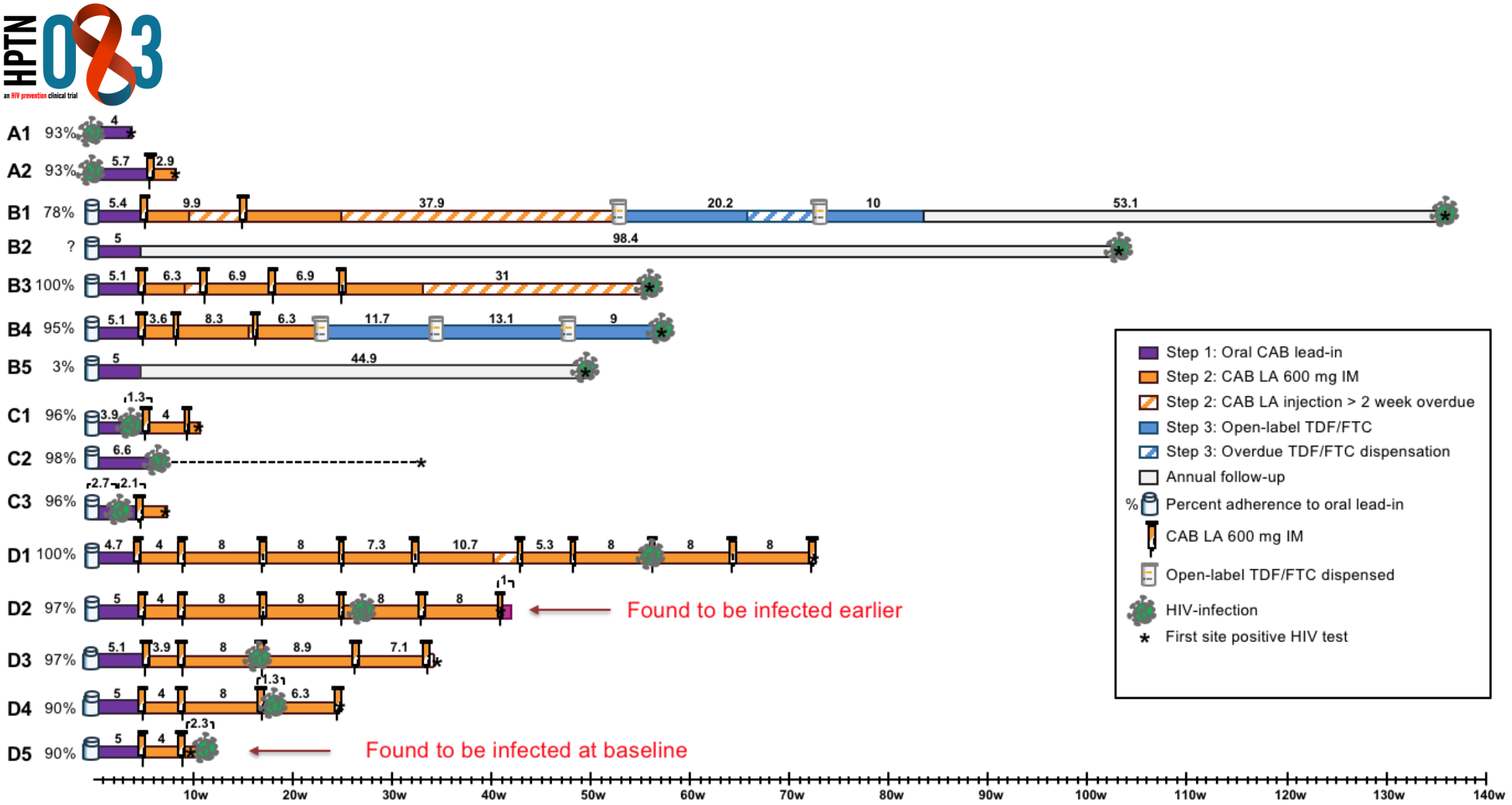
Classification of infections in CAB-LA studies

A: baseline (infected at enrollment)

B: incident but without recent CAB exposure

C: incident during oral lead-in phase

D: incident despite on time injections



Landovitz RJ et al AIDS 2020, Abstract #OAXLB01010

HPTN
HIV Prevention Trials Network

Case D2

	Visit type	Diagnosis visit type	Site Testing: Rapid 1 test	Site Testing: Ag/Ab test	Site Testing: DNA test	Site Testing: Viral load	Site Testing: Confirmatory Ab test	HPTN LC Testing: Ag/Ab test	HPTN LC Testing: Qualitative RNA test	HPTN LC Testing: Confirmatory Ab test	HPTN LC Testing: Viral load
	Enrollment		NR	NR				NR	NR		
	Week 2		NR	NR					NR		
	Week 4		NR	NR					NR		
	Week 5		NR	NR					NR		
	Week 6		NR	NR					NR		
	Week 9		NR	NR					NR		
	Week 10		NR	NR					NR		
	Week 17		NR	NR				NR	NR		
	Week 19		NR	NR				NR	NR		
	Week 25		NR	NR				NR	NR		
14 weeks	Week 27	1st HIV POS	NR	NR				NR	R		SCA 6.1
14 weeks	**Week 33**		NR	NR				NR	NR		
14 weeks	Week 35		NR	NR				NR	R		ND
14 weeks	**Week 41**	1st SITE POS	NR	R		ND		NR	NR		
48 weeks	Interim		R	R	Detect <LLOD	ND		R	NR	NEG	
48 weeks	Interim		NR	R				R	NR	NEG	
48 weeks	Week 43		NR	R				NR	NR		
48 weeks	Interim		NR	R	ND	ND		R	NR	INDET	
48 weeks	Interim*		R	R	Detect <LLOD	ND		NR	NR		
48 weeks	Interim		NR	R				R	NR	INDET	
48 weeks	Interim		NR	R	Detect 5.8	23	POS	R	R	NEG	<40
48 weeks	Interim		R	R		23		R	R	INDET	<40

*Started a 30-day course of TDF/3TC/DRVr 7 days later for PEP; later started ART with TDF/3TC/DRVr with a viral load of 1700

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Delayed detection of HIV infection in CAB-LA PrEP (n=11)

	Group A (baseline)	Groups C + D
Median delay 1st pos (range)	62 (28-72) days	98 (35-185 days)
Median log VL at 1st pos visit	4.4 (3.1-4.7)	2.1 (ND-2.9)
		5 of 7 detectable
Received CAB p infection	4/4	6/7

5 of these participants acquired INSTI resistance.

These 11 are 0.2% of the 4570 participants in the study.

Eshleman, 2021 HPTN Meeting

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Delayed detection of HIV infection in oral PrEP

PrEP may lead to delayed seroconversion and false-negative tests, particularly with oral fluid tests

Curlin et al CID 2017; 64(12): 1663-69

- Delayed diagnosis occurred in 80 of 287 seroconverting individuals
- OFOQ conversion delay: median 98.5, range 14.5-547.5 days
- Delay was associated with low plasma RNA level

Donnell et al AIDS 2017; 31(14): 2007-16

- PrEP was associated with more frequent delayed diagnosis >100 days by POC Ab testing (17% v 6%)

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My interpretation and conclusions about CAB-LA/HPTN 083

- CAB-LA is superior to FTC-TDF and highly effective at HIV prevention.
- Ag-Ab testing failed to identify 3 of 4 participants with AHI (VL range 3.1-4.7log)
- Ag-Ab testing was sufficient in participants without recent CAB injections
- HIV NAT would have identified many but not all incident infections.
- Ag-Ab positivity was delayed in a way not previously identified with oral PrEP.
- Delayed diagnosis was associated with further injections and INSTI resistance in 5 of 11 cases. Whether resistance could have been prevented is unclear.
- HIV testing in PrEP is going to get more confusing. Please don't hesitate to reach out for help with interpretation.

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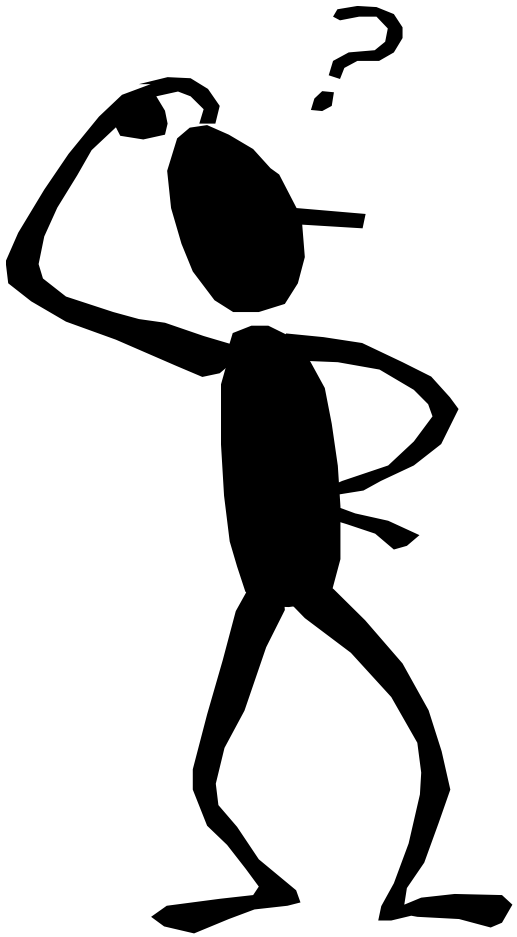
Questions?



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