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BHIVA 'Best of CROI' Feedback Meetings

London | Birmingham

Haydock | Newcastle

Cardiff | Wakefield

Edinburgh

New drugs

Dr David Asboe

Chelsea and Westminster Hospital, London

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- New drugs – phase 2/3
- ART strategies
- Early ART data
- Pharmacokinetics
- ART plus

Agents for HIV-1

- Integrase Inhibitors
  - Dolutegravir
  - Cabotegravir (III)
  - GS-9883 (Phase III)
- N(t)RTI
  - TAF
  - EFdA (4'-ethynyl-2-fluoro-2'-deoxyadenosine)(Phase I-II)
- NNRTI
  - Doravirine (Phase III)
- Maturation Inhibitors
  - BMS 955176 (Phase II)
- Attachment inhibitors
  - BMS 663068 -> 626529 (Phase III)
- Broadly neutralizing monoclonal antibodies (I)

New Targets: e.g. LEDGF, combination entry, additional maturation sites, HIV-1 RNA processing

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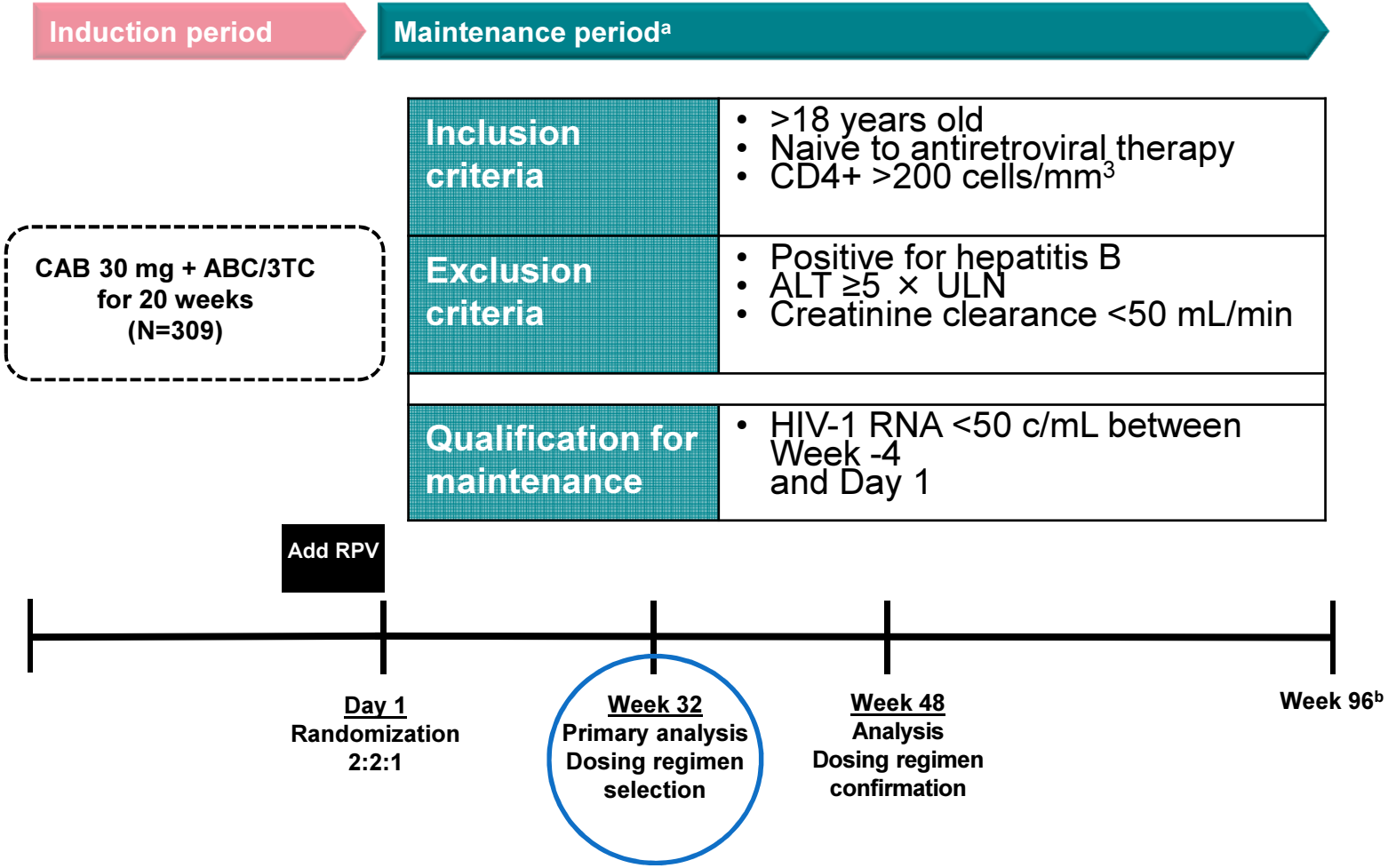
Cabotegravir + Rilpivirine as Long-Acting Maintenance Therapy: LATTE-2 Week 32 Results



- ABC/3TC, abacavir/lamivudine; ALT, alanine aminotransferase; IM, intramuscular; PO, orally; Q4W, every 4 weeks; Q8W, every 8 weeks; QD, once daily; ULN, upper limit of ormal. [a]Subjects who withdrew after at least 1 IM dose entered the long-term follow-up period. [b]Subjects can elect to enter LA Extension Phase beyond Week 96.
- Margolis et al. CROI 2016; Boston, MA. Abstract 31LB.

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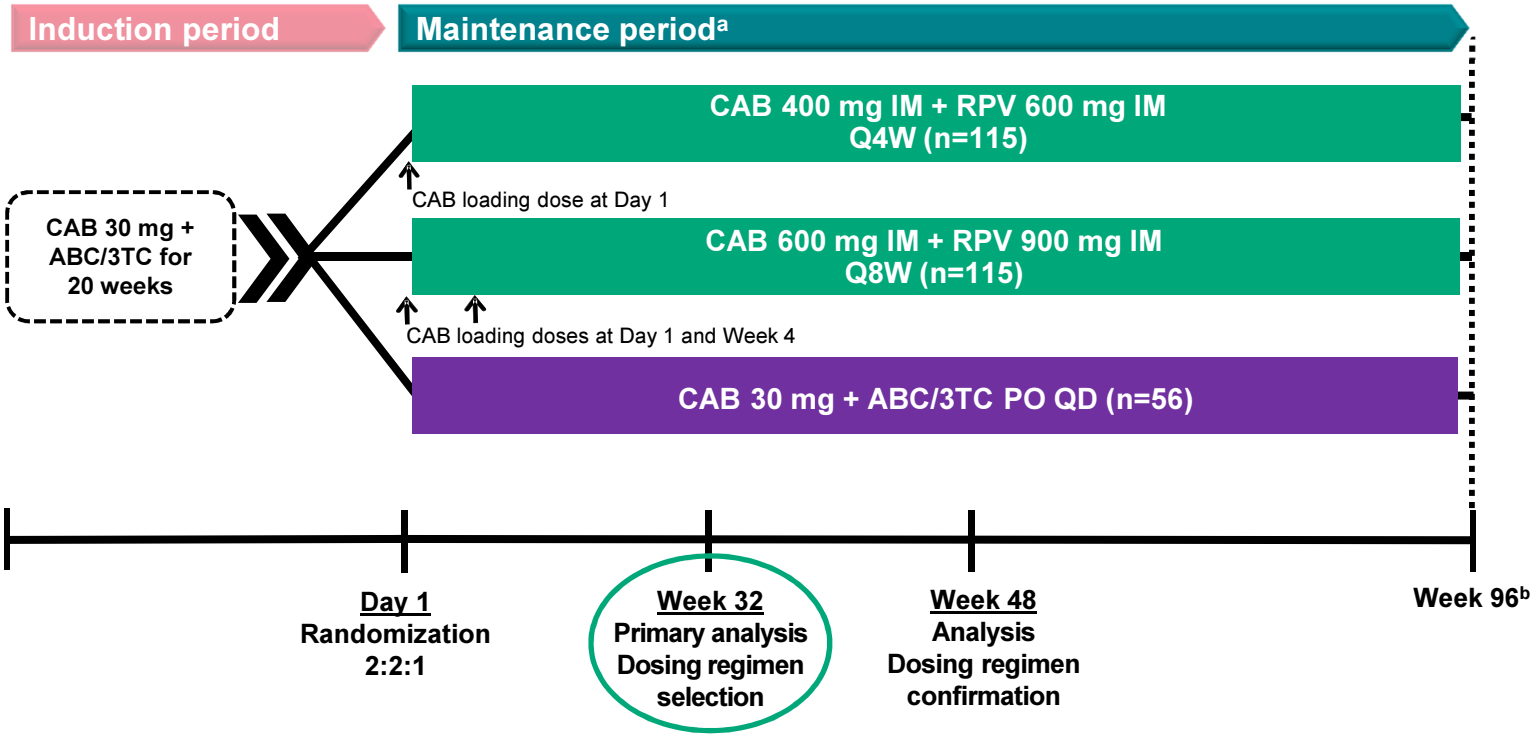
LATTE-2 Study Design



ABC/3TC, abacavir/lamivudine; ALT, alanine aminotransferase; IM, intramuscular; PO, orally; Q4W, every 4 weeks; Q8W, every 8 weeks; QD, once daily; ULN, upper limit of normal. [a]Subjects who withdrew after at least 1 IM dose entered the long-term follow-up period. [b]Subjects can elect to enter LA Extension Phase beyond Week 96.

Margolis et al. CROI 2016; Boston, MA. Abstract 31LB.

Baseline Characteristics: ITT-ME Population

	Q8W IM (n=115)	Q4W IM (n=115)	Oral CAB (n=56)	Total (N=286)
Median age, years	35.0	36.0	35.0	35.0
Female, n (%)	8 (7)	6 (5)	10 (18)	24 (8)
African American/African heritage, n (%)	17 (15)	12 (10)	15 (27)	44 (15)
CDC class C, n (%)	1 (<1)	2 (2)	0	3 (1)
Median HIV-1 RNA, $\log_{10}$ c/mL	4.419	4.455	4.289	4.393
≥100,000, n (%)	16 (14)	28 (24)	7 (12)	51 (18)
Median CD4+, cells/mm^3	449.0	499.0	517.5	489.0

CDC, Centers for Disease Control and Prevention; ITT-ME, intent-to-treat maintenance exposed.

Margolis et al. CROI 2016; Boston, MA. Abstract 31LB.

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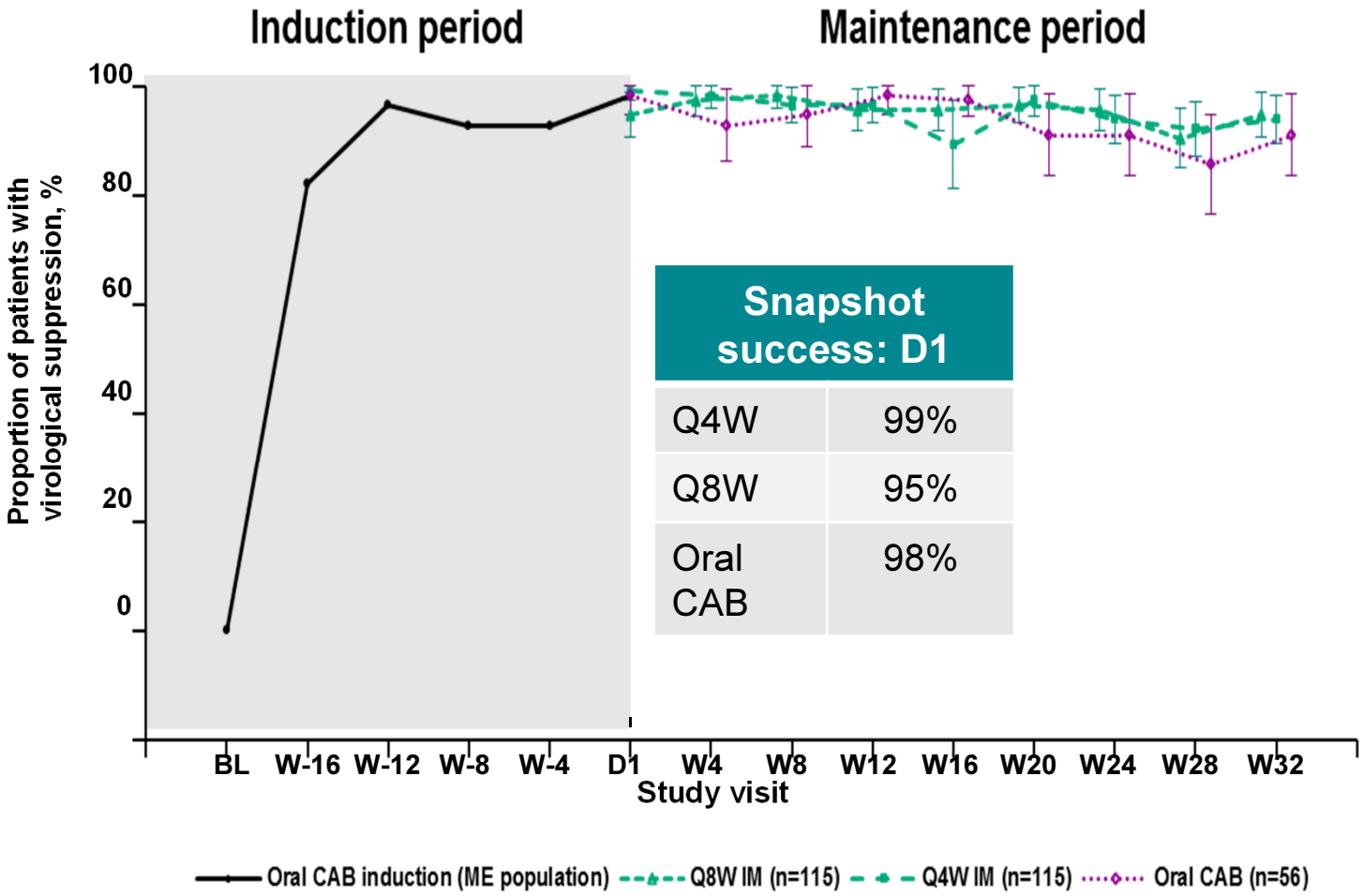
LATTE-2 Week 32 Results: HIV-1 RNA <50 c/mL by Snapshot (ITT-ME)



Snapshot success: D1	
Q4W	99%
Q8W	95%
Oral CAB	98%

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Snapshot Outcomes: HIV-1 RNA <50 c/mL at Week 32 (ITT-ME)

Week 32 outcome	Q8W IM (n=115)	Q4W IM (n=115)	Oral CAB (n=56)
Virologic success	**109 (95%)**	**108 (94%)**	**51 (91%)**
Virologic non-response	**5 (4%)**	**1 (<1%)**	**2 (4%)**
Data in window not <50 c/mL[a]	3 (3%)	1 (<1%)	1 (2%)
Discontinued for lack of efficacy	1 (<1%)	0	1 (2%)
Discontinued for other reason while not <50 c/mL	1 (<1%)	0	0
No virologic data in window	**1 (<1%)**	**6 (5%)**	**3 (5%)**
Discontinued due to adverse event or death[b]	0	4 (3%)	1 (2%)
Discontinued for other reasons[c]	1 (<1%)	2 (2%)	2 (4%)

- [a]Week 32 HIV-1 RNA Q8W: 53 c/mL, 70 c/mL, 91 c/mL; Q4W: 70 c/mL; oral CAB: 243 c/mL. All 5 are still in the study. [b]Q4W: hepatitis C, rash, depression, and psychosis; oral CAB: hepatitis C. [c]Q8W: ISR; Q4W: pregnancy and prohibited medication; oral CAB: lost to follow-up, relocation.
- Margolis et al. CROI 2016; Boston, MA. Abstract 31LB.

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Protocol-Defined Virologic Failure (PDVF): Genotype

Maintenance period	Q8W IM (n=115)	Q4W IM (n=115)	Oral CAB (n=56)
Subjects with PDVF[a]	1[b] (1%)	0	1 (2%)
INI-r mutations	0	0	0
NRTI-r mutations	0	0	0
NNRTI-r mutations	0	0	0

[a]One additional PDVF occurred during oral Induction Period due to oral medication non-adherence. [b]PDVF at Week 4; no detectable RPV at Week 4 and Week 8, suggesting maladministration.

- No INI, NNRTI, or NRTI mutations were detected through Induction or Maintenance

- PDVF: <1.0 $\log_{10}$ c/mL decrease in plasma HIV-1 RNA by Week 4, OR confirmed HIV-1 RNA ≥200 c/mL after prior suppression to <200 c/mL, OR >0.5 $\log_{10}$ c/mL increase from nadir HIV-1 RNA value ≥200 c/mL.
- Margolis et al. CROI 2016; Boston, MA. Abstract 31LB.

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Adverse Events and Labs—Maintenance Period

ITT-ME population, n (%)	Q8W IM (n=115)	Q4W IM (n=115)	Oral CAB (n=56)	IM subtotal (N=230)
Drug-related AEs, excluding ISRs (≥3%)				
Pyrexia	3 (3)	5 (4)	0	8 (3)
Fatigue	2 (2)	4 (3)	1 (2)	6 (3)
Influenza-like illness	3 (3)	2 (2)	0	5 (2)
Grade 3 and 4 AEs, excluding ISRs	10 (9)	12 (10)	1 (2)	22 (10)
Drug-related Grade 3/4 AEs[a], excluding ISRs	3 (3)	4 (3)	0	7 (3)
Serious AEs[b]	7 (6)	6 (5)	3 (5)	13 (6)
AEs leading to withdrawal[c]	2 (2)	6 (5)	1 (2)	8 (3)
Grade 3 and 4 labs[d]	17 (15)	20 (17)	8 (14)	37 (16)

- [a]Q8W: influenza-like illness, chills and pain, and lipase; Q4W: influenza-like illness, rash, depression, and psychosis. [b]None drug related; one death (epilepsy) evaluated as not likely related to study drug. [c]Q8W: ISR × 2; Q4W: Churg Strauss vasculitis, hepatitis C, depression, epilepsy, psychosis, and rash; oral CAB: hepatitis C. [d]Maintenance emergent. AE, adverse event; ISR, injection-site reaction.
- Margolis et al. CROI 2016; Boston, MA. Abstract 31LB.

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Summary of Injection Site Reactions (ISRs)

	Q8W IM (n=115)	Q4W IM (n=115)	IM subtotal (N=230)
Number of injections	1623	2663	4286
Number of ISRs (events/injection)	1054 (0.65)	1228 (0.46)	2282 (0.53)
Grades			
Grade 1	839 (80%)	1021 (83%)	1860 (82%)
Grade 2	202 (19%)	197 (16%)	399 (17%)
Grade 3	12 (1%)	10 (<1%)	22 (<1%)
Grade 4	0	0	0
Duration, days			
≤7	943 (89%)	1121 (91%)	2064 (90%)
Median	3.0	3.0	3.0

- Most common ISR events overall were pain (67%), swelling (7%), and nodules (6%)
- Number of subjects reporting ISRs decreased over time, from 86% (Day 1) to 33% (Week 32)[a]
- 2/230 subjects (1%) withdrew as a result of injection reactions (Q8W)

[a]Represents percent of subjects with a Week 32 visit (n=220).

Margolis et al. CROI 2016; Boston, MA. Abstract 31LB.

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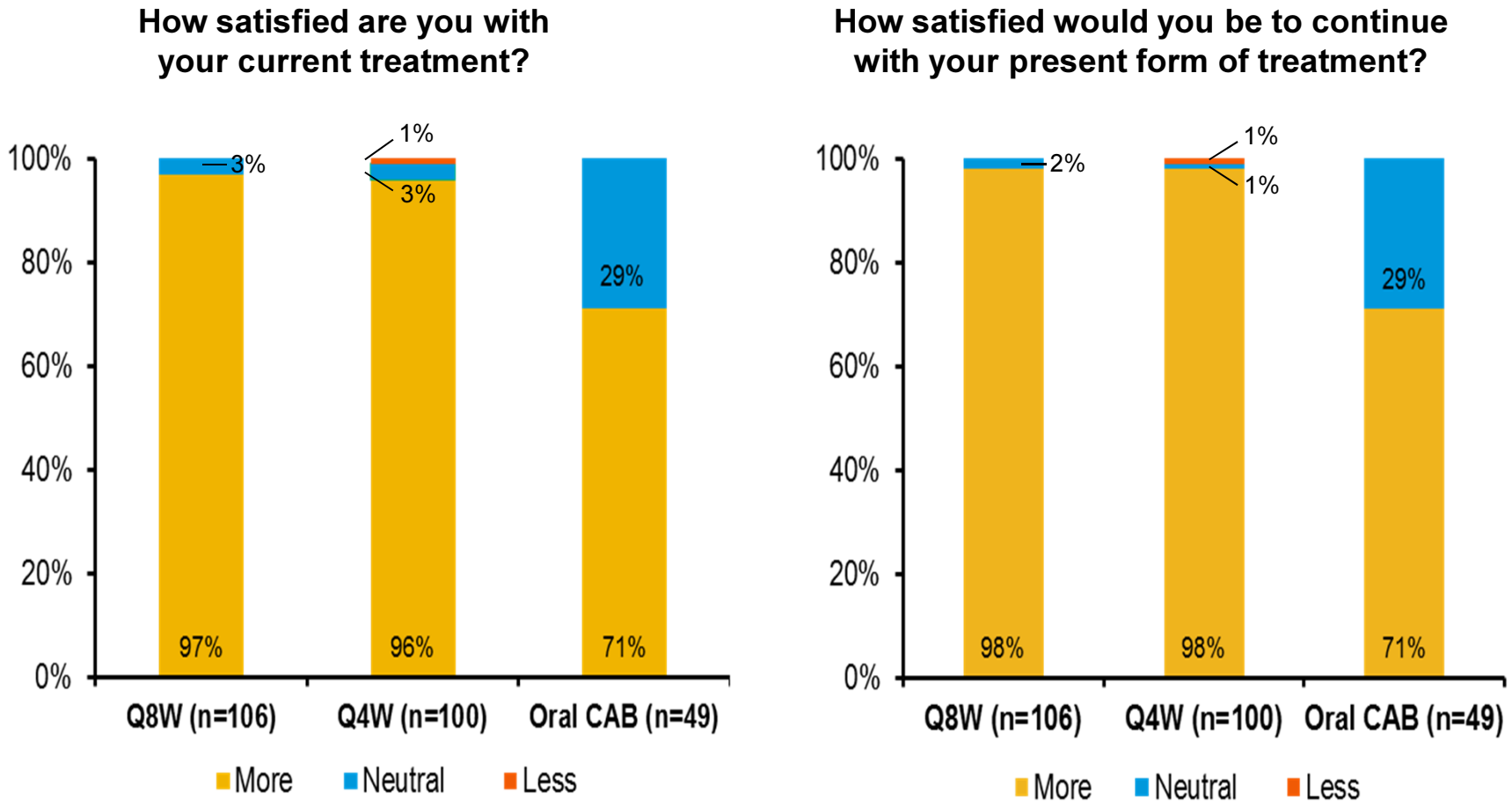
Patient-Reported Outcomes at Week 32: Maintenance Treatment Compared With Oral Induction Treatment[a]



- Note: based on observed case dataset of subjects who completed Week 32 questionnaires.
- [a]HIV Treatment Satisfaction Questionnaire change version (HIVTSQc).
- Margolis et al. CROI 2016; Boston, MA. Abstract 31LB.

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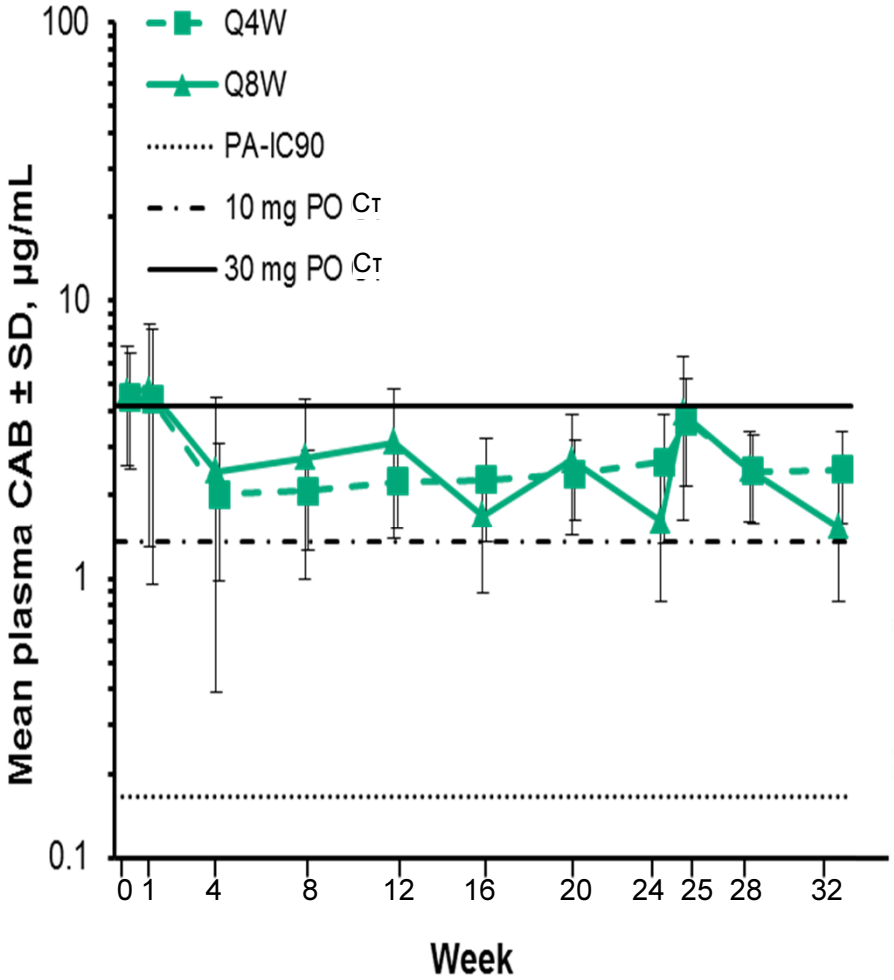
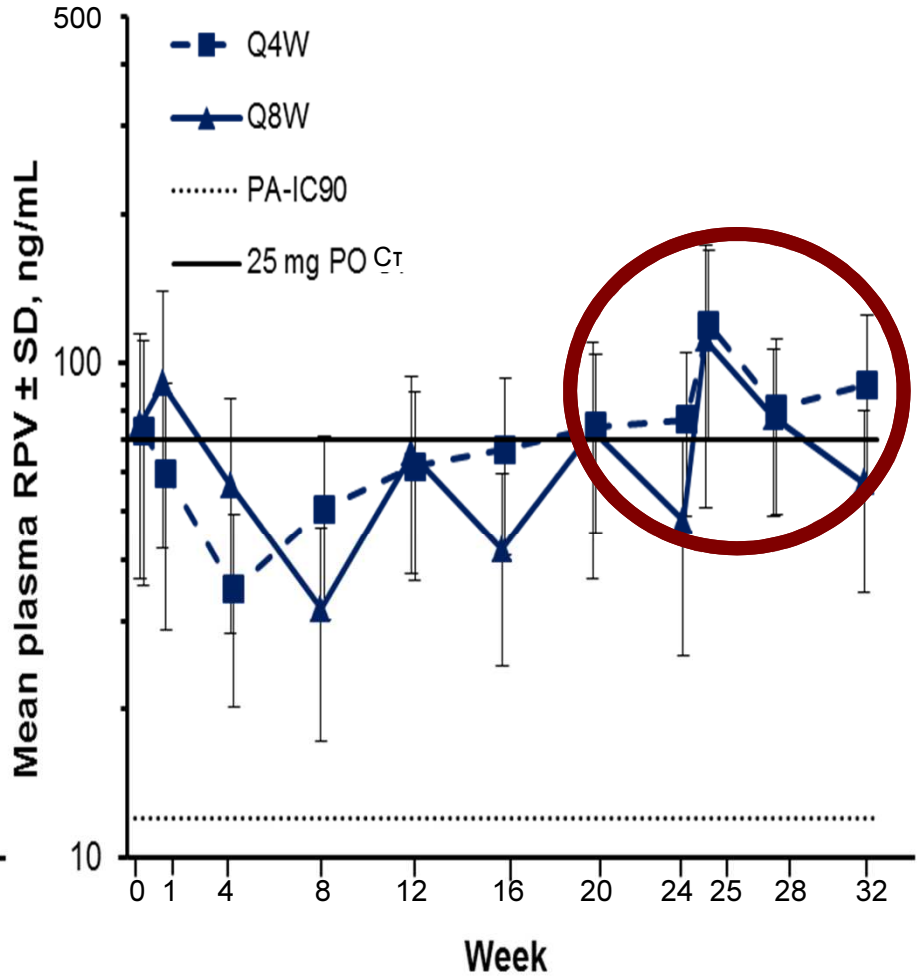
Pharmacokinetics





- C_T, trough concentration; PA-IC90, protein binding–adjusted 90% inhibitory concentration; SD, standard deviation.
- Margolis et al. CROI 2016; Boston, MA. Abstract 31LB.

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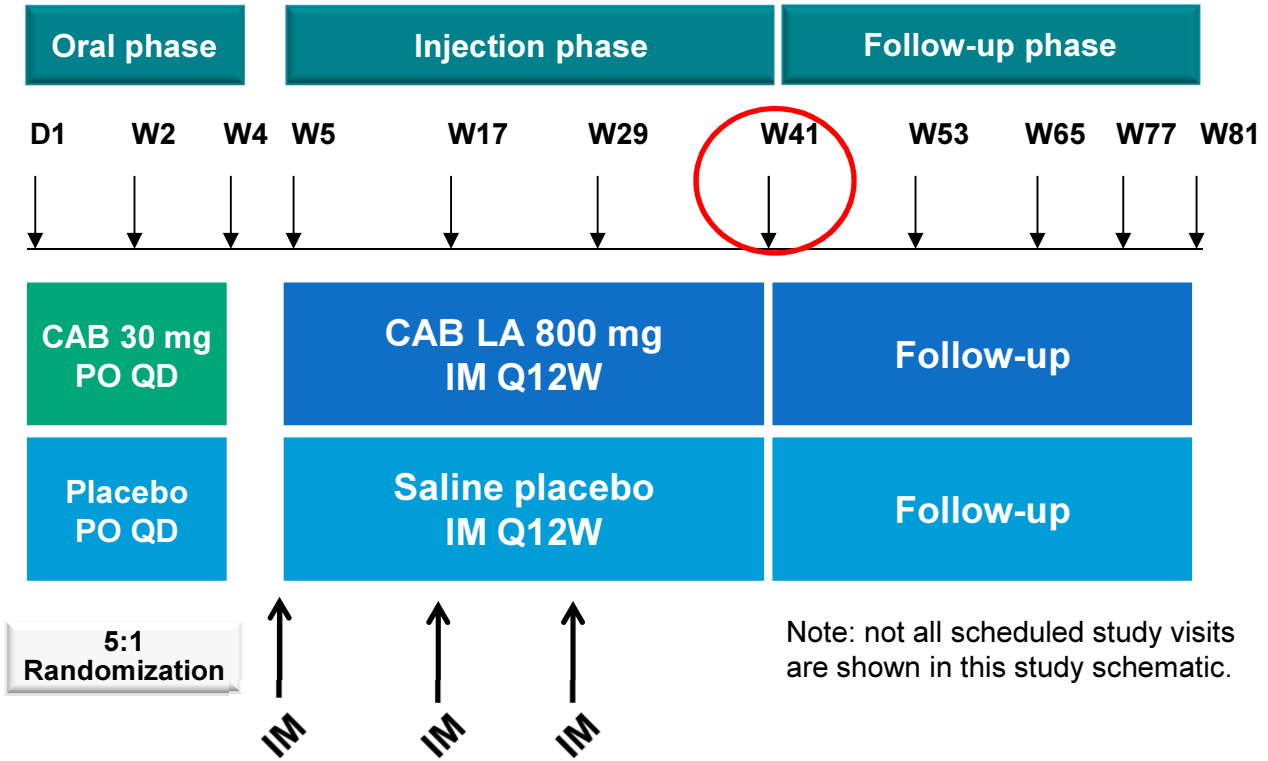
ÉCLAIR Phase 2A Safety and PK Study of Cabotegravir LA in HIV-Uninfected Men

Phase IIa, randomized, multi-site, 2-arm, double-blinded study in men at low risk of acquiring HIV



- PO, orally; Q12W, every 12 weeks; QD, once daily.

- Markowitz et al. CROI 2016; Boston, MA. Abstract 106.

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Adverse Events—Injection Phase (Primary Safety Evaluation)

	PBO (N=21) n (%)	CAB (N=94) n (%)
Grade 1-4 adverse events	19 (90)	92 (98)
Grade 2-4 adverse events (>5% in CAB arm)	10 (48)	75 (80)
Injection site pain	1 (5)	55 (59)
Pyrexia	0	7 (7)
Injection site pruritus	0	6 (6)
Injection site swelling	0	6 (6)
Serious adverse events[a]	1 (5)	1 (<1)

- No laboratory adverse events, including liver laboratory abnormalities, led to discontinuation throughout the injection phase

- [a]PBO: deep vein thrombosis (drug-related); CAB: appendicitis.
- Markowitz et al. CROI 2016; Boston, MA. Abstract 106.

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ISR Symptoms—Injection Phase

	PBO (N=21) n (%)		CAB (N=94) n (%)	
Subjects with any ISR event	12 (57)		87 (93)	
Total number of injections	62		272	
ISR events by maximum toxicity[a]	**Number of events (%)**	**Mean duration (days)**	**Number of events (%)**	**Mean duration (days)**
Pain	17/62 (27)	2.0	250/272 (92)	5.4
Grade 1	16 (26)		122 (45)	
Grade 2	1 (2)[b]		101 (37)	
Grade 3	0		27 (10)	
Pruritus	4 (6)	1.8	26 (10)	2.5
Swelling	0		22 (8)	3.8
Nodule/Bump	0		21 (8)	9.7
Warm to touch	0		19 (7)	3.2
Bruising	1 (2)	2.0	16 (6)	3.3
Induration	0		15 (6)	4.3

- No subjects discontinued due to AEs during the injection phase; 4 subjects who withdrew consent cited injection tolerability as a reason

[a]Percentages are out of total number of injections. With the exception of Grade 3 pain, all ISRs listed were Grade 1-2. [b]Subject was misdosed with CAB on third injection.

Markowitz et al. CROI 2016; Boston, MA. Abstract 106.

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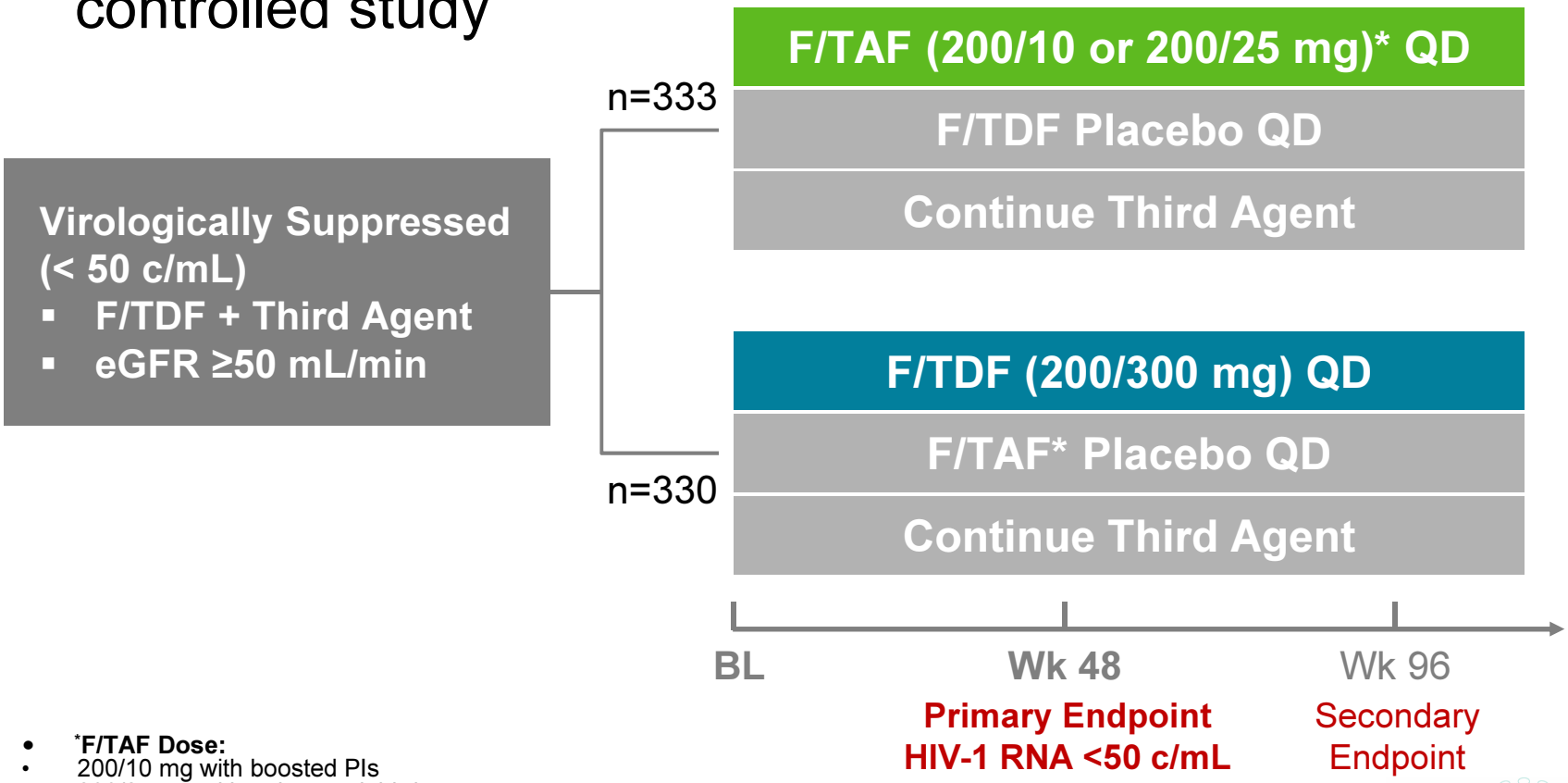
Switching to F/TAF (Tenofovir Alafenamide)from F/TDF (Tenofovir DF) based Regimen Study 311-1089: 48-Week Data

- Randomized, double-blind, double-dummy, active-controlled study



- *F/TAF Dose:
- 200/10 mg with boosted PIs
- 200/25 mg with unboosted third agents

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Baseline Characteristics

	F/TAF n=333	F/TDF n=330
Median age (range), years	48 (22, 78)	49 (22, 79)
Female, n (%)	48 (14)	54 (16)
Race, n (%)		
White	244 (73)	253 (77)
Black or African descent	69 (21)	67 (20)
Other	20 (6)	10 (3)
Hispanic/Latino ethnicity, n (%)	48 (14)	78 (24)
Median CD4 count, cells/mm^3	663	624
<200 cells/mm^3, n (%)	5 (2)	4 (1)
Median eGFR*, mL/min	99	100
Use of third agent, n (%)		
Boosted PI	155 (47)	150 (45)
Unboosted third agents	178 (53)	180 (55)

*eGFR calculated with Cockcroft-Gault equation

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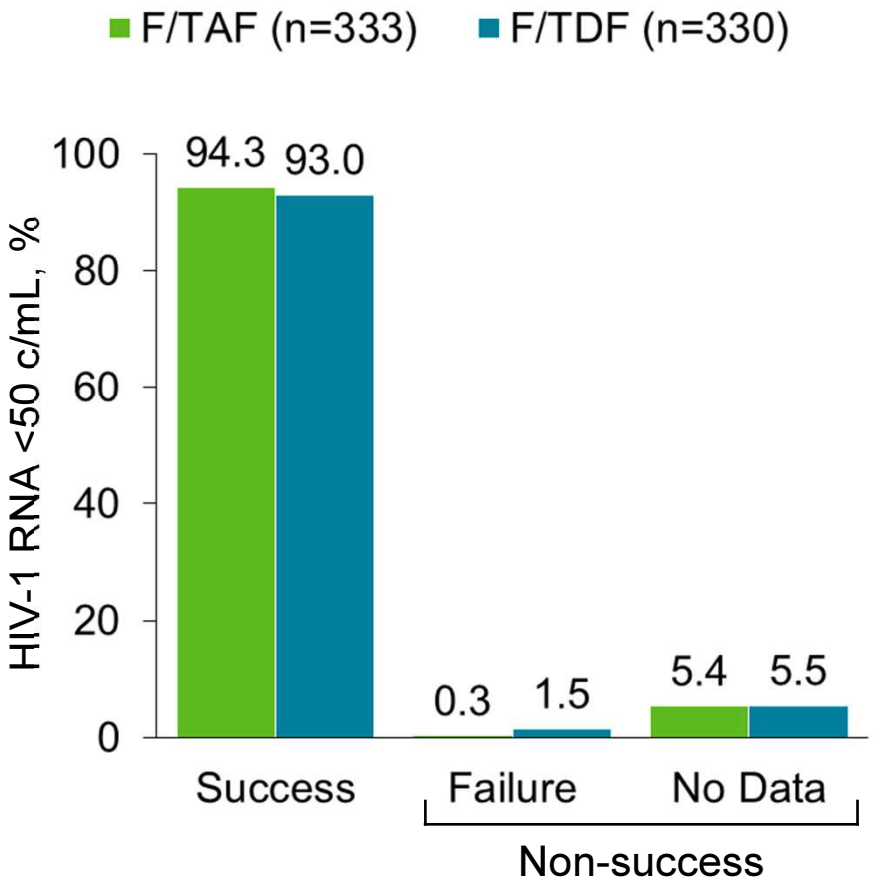
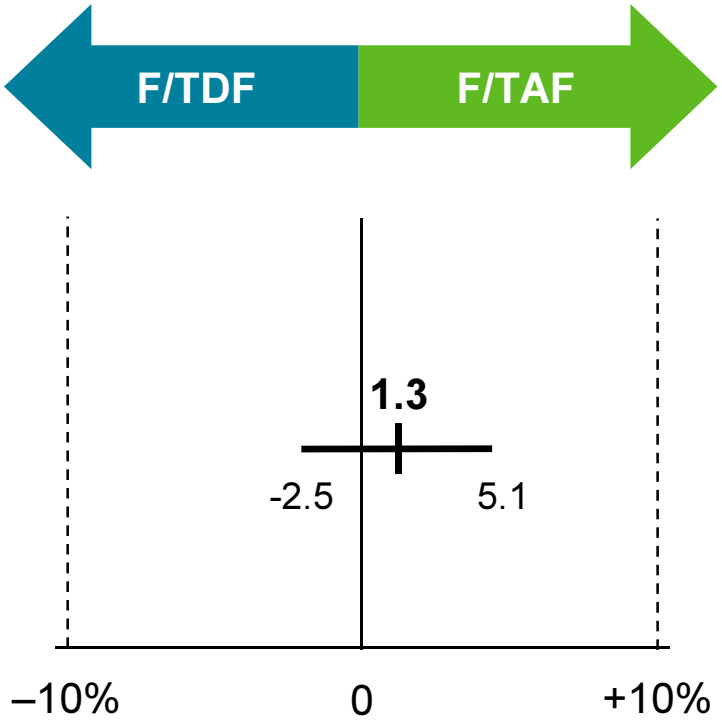
Efficacy at Week 48 (Snapshot)

Virologic Outcome



Treatment Difference (95% CI)



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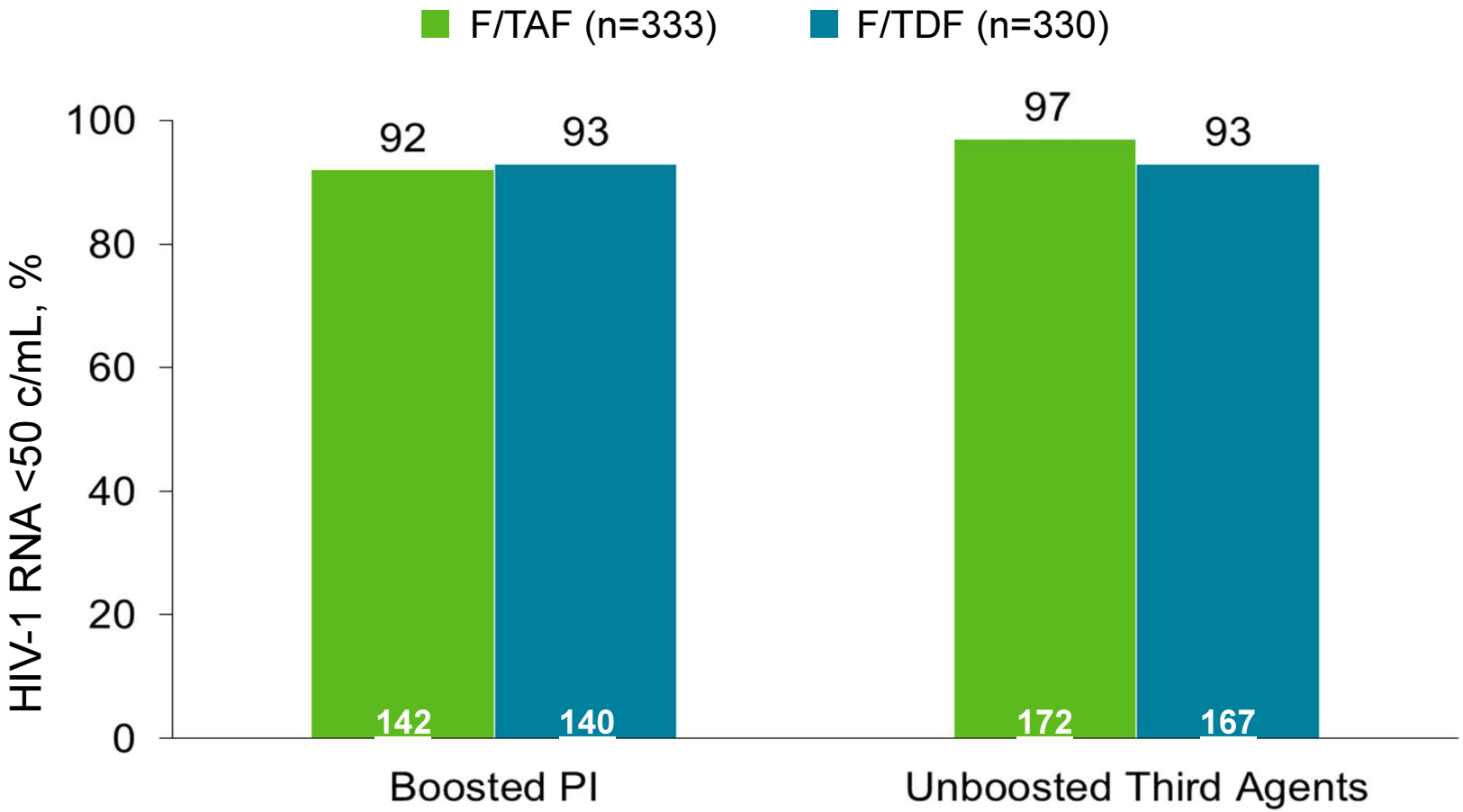
Virologic Success by Third Agent



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Adverse Events Leading to Discontinuation

n (%)	F/TAF n=333	F/TDF n=330
Overall	**7 (2)**	**3 (1)**
Insomnia / Mood altered	1	0
Dysphagia	1	0
Atrial fibrillation	1	0
Diarrhea	1	0
Peripheral edema	1	0
Overdose	1	0
Lymphoma	1	0
Increased serum creatinine	0	1
Rectal tenesmus	0	1
Feeling abnormal / Headache	0	1

- No reported cases of proximal renal tubulopathy or Fanconi syndrome in either group

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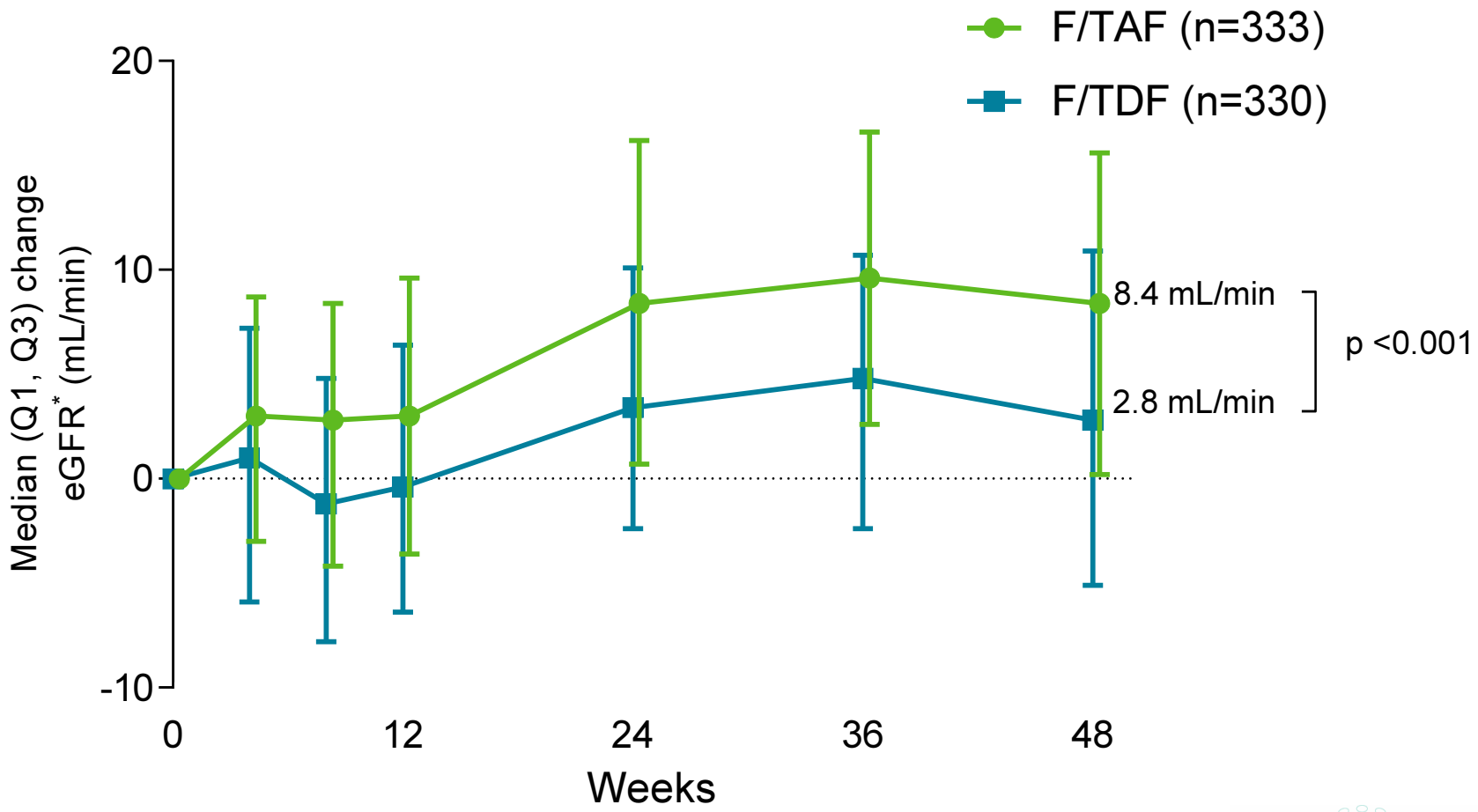
Changes in eGFR



- *eGFR calculated with Cockcroft-Gault equation

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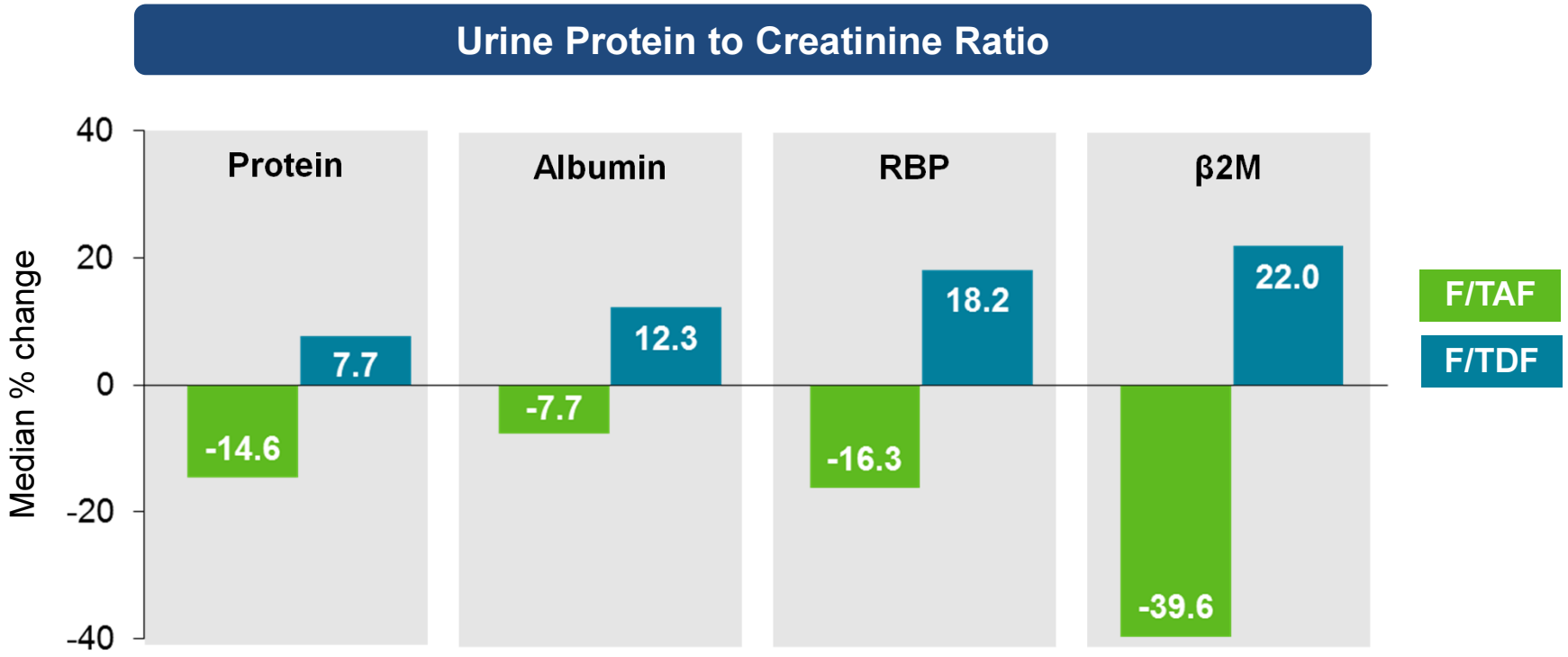
Change in Renal Biomarkers at Week 48



All differences between treatments statistically significant (p <0.001)

- RBP, retinol-binding protein; β2M, β2-microglobulin.

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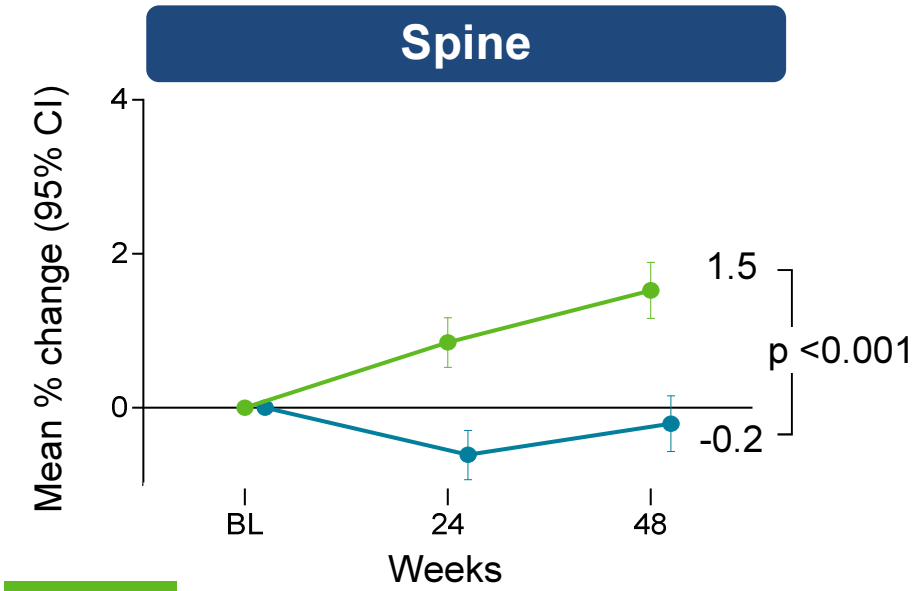
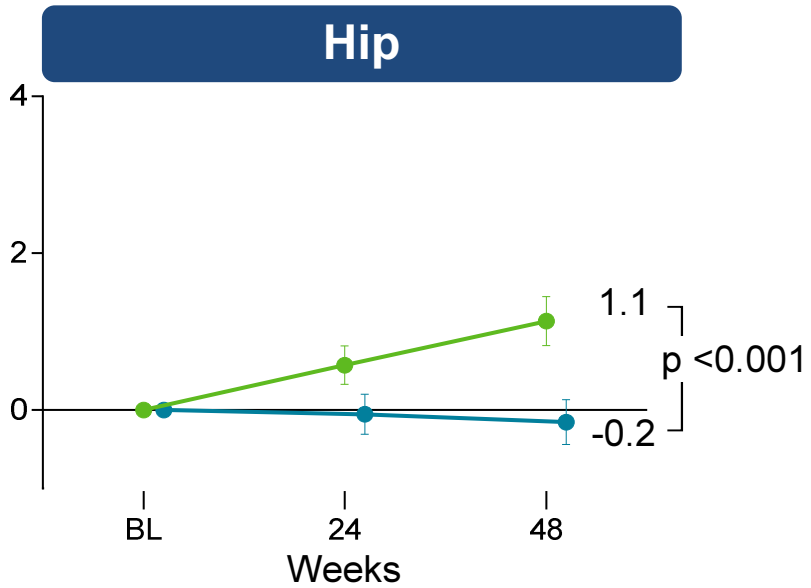
Change in Bone Mineral Density through Week 48





	Spine BL	Spine 24	Spine 48	Hip BL	Hip 24	Hip 48
F/TAF, n	321	310	300	321	309	300
F/TDF, n	320	310	306	317	305	303

≥ 3% BMD increase at Week 48

	Spine		Hip	
F/TAF	30%	p<0.001	17%	p=0.003
F/TDF	14%		9%	

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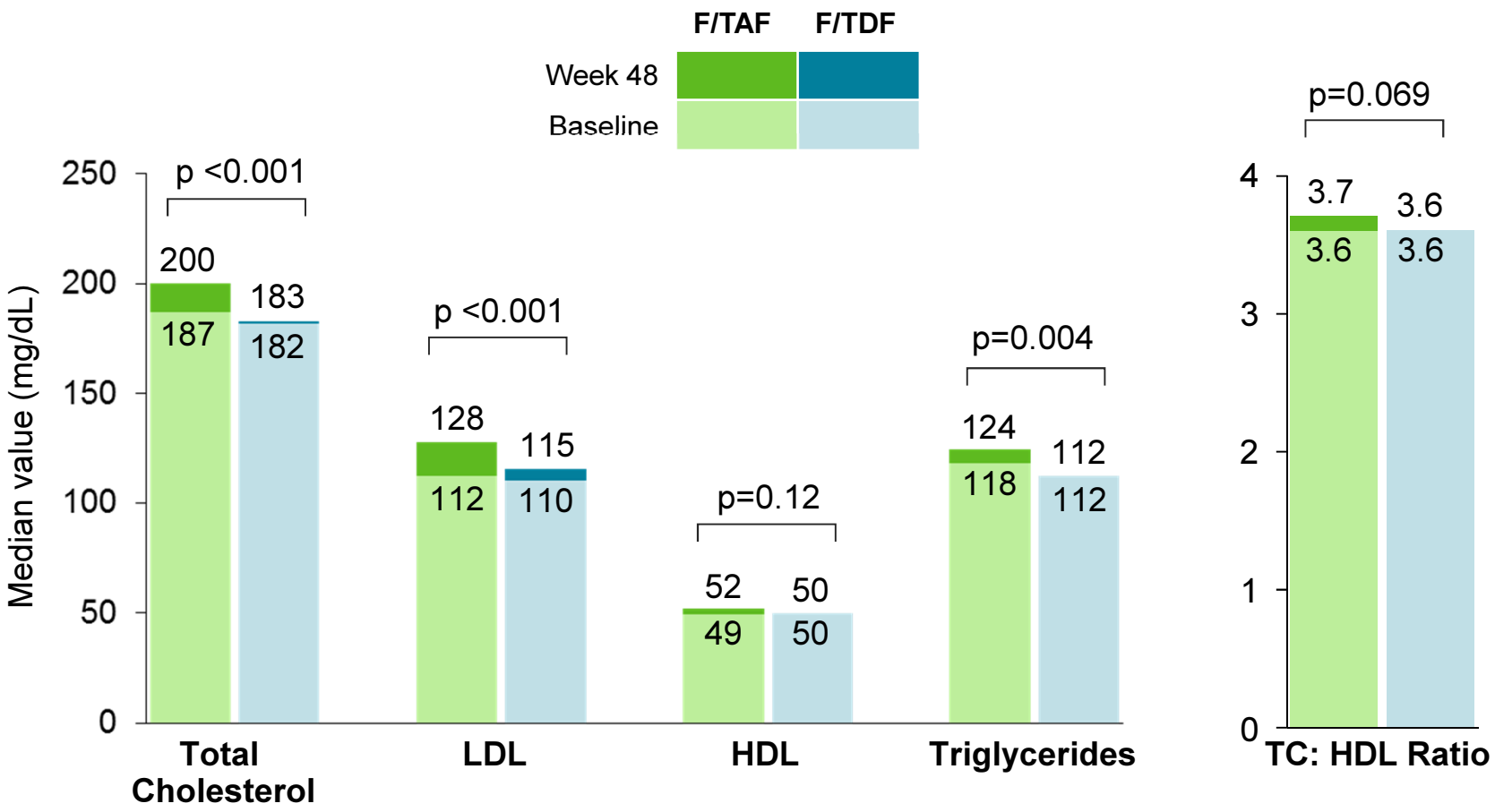
Fasting Lipid Results



	F/TAF	F/TDF
Patients initiating lipid-lowering agents	4%	4%

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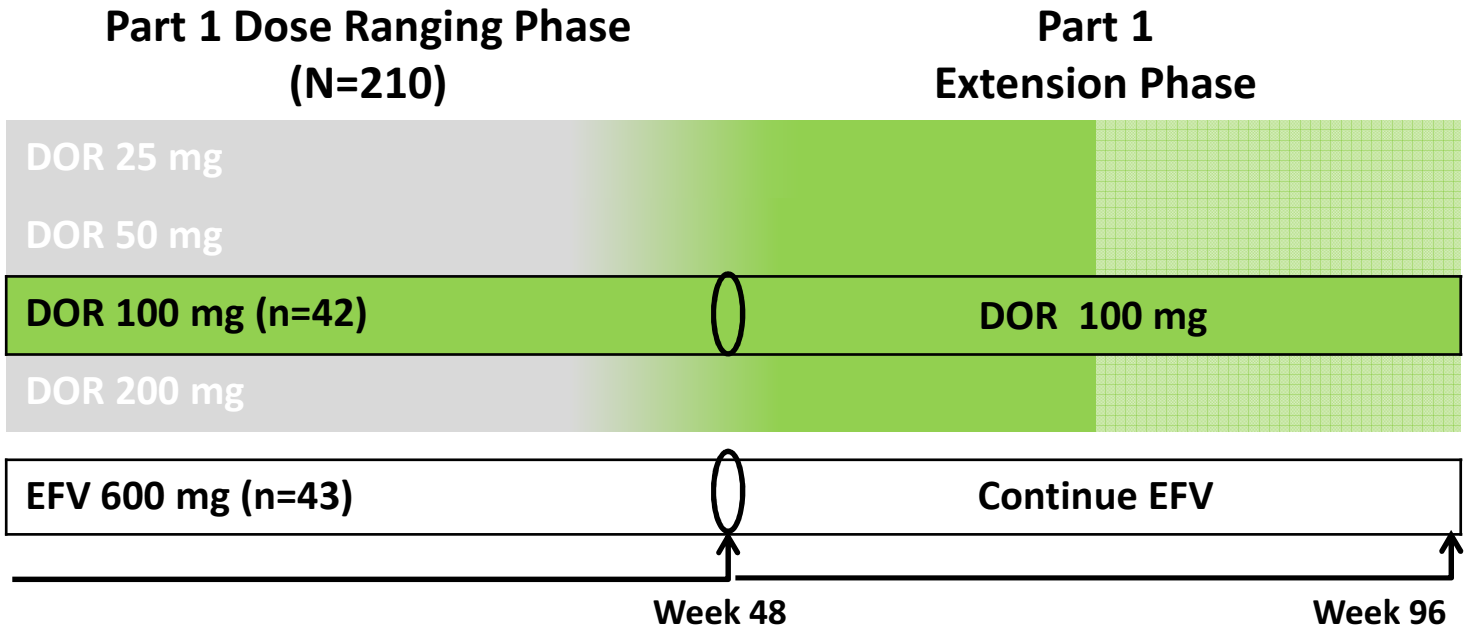
Doravirine 100 mg QD vs Efavirenz +TDF/FTC in ART-Naive HIV+ Patients: Week 48 Results MK1439-007

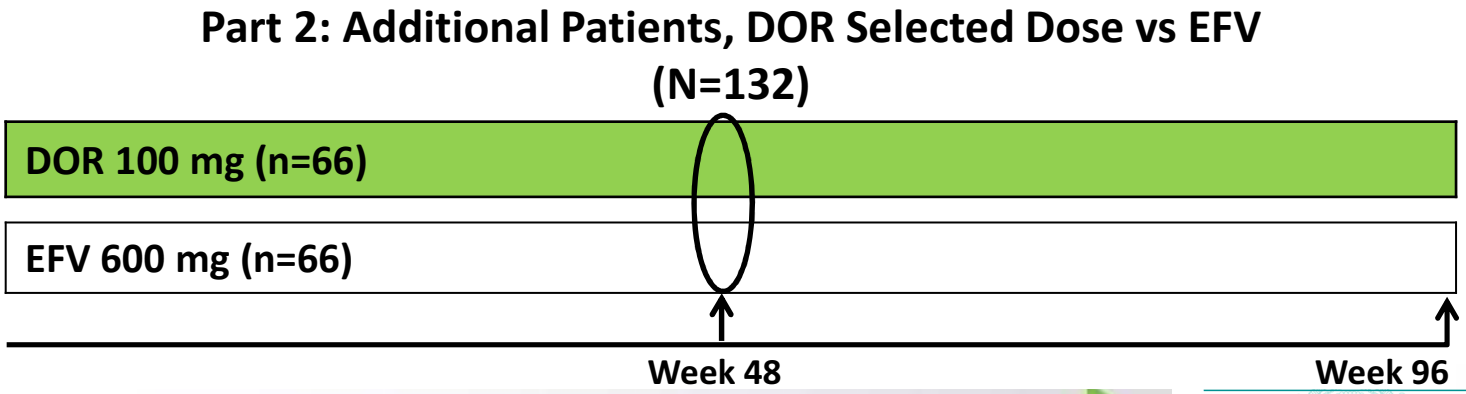
CROI 2016 Boston, MA
Abstract #470 MK-1439 P007

RCT, DB, dose-finding, 2 part study

Patients:
- HIV-1+ ART-naïve
- RNA ≥1,000 c/mL
- CD4 ≥100 cells/µL
- Stratified by screening RNA (≤/> 100K c/mL)



Part 2 began after dose selection based on Part 1 week 24 results.



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Baseline Patient Characteristics

	DOR 100 mg	EFV 600 mg
Treated patients	N=108	N=108
% Male	91.7	93.5
Age (years), median (range)	35 (19 – 67)	34 (20 – 57)
% White	79.6	79.6
% with AIDS	3.7	6.5
HIV RNA ($\log_{10}$ c/mL), median (range)	4.6 (2.6 – 6.5)	4.6 (3.0 – 6.7)
% with HIV RNA >100,000 c/mL, at screening	35.2	37.0
CD4 Count (cells/μL), median (range)	402 (92 – 1110)	430 (118 – 1121)
% with CD4 count ≤ 200 cells/μL	6.5	9.3
% with Clade B viral subtype	69.4	79.6

All patients also received TDF/FTC.

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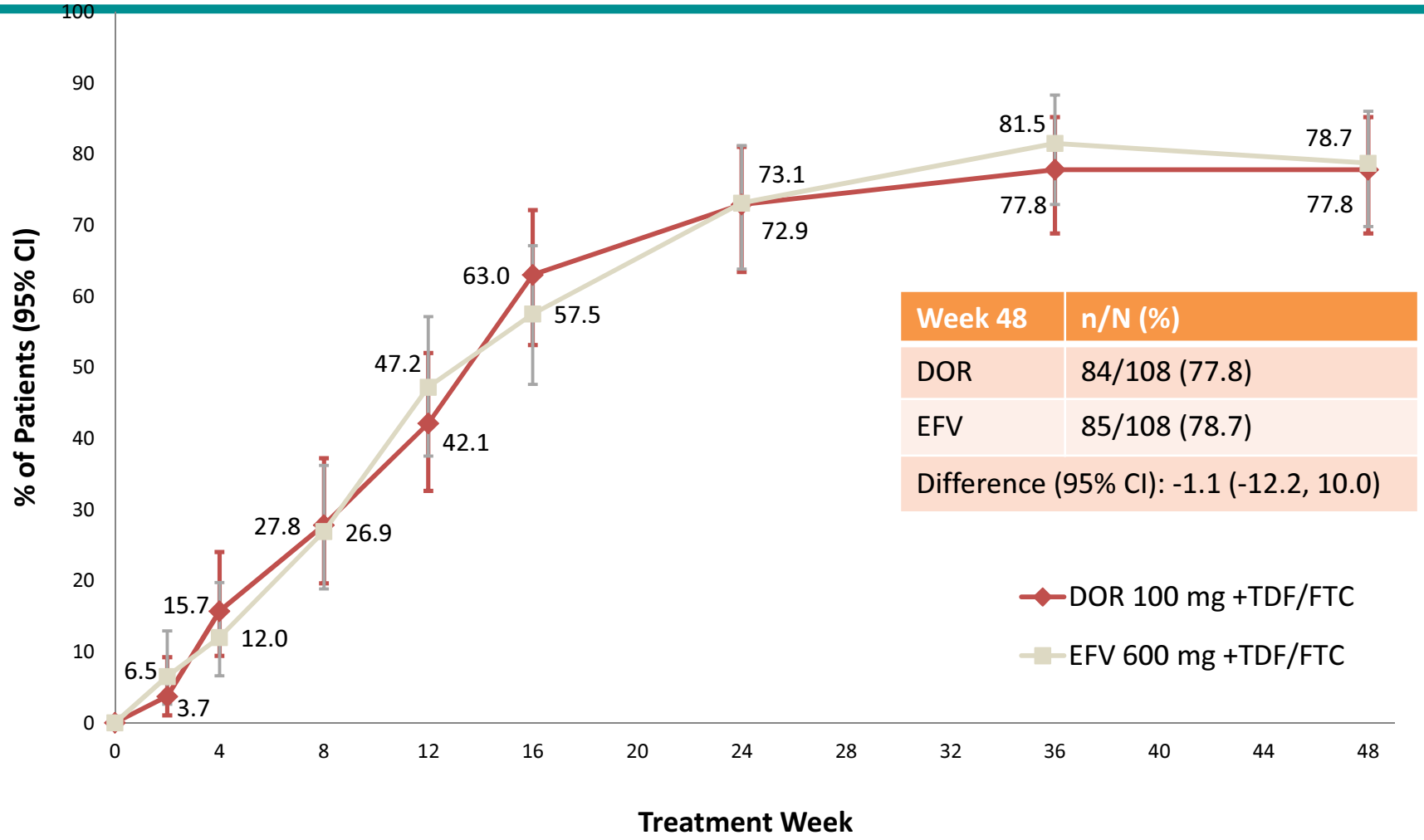
HIV RNA <40 copies/mL (NC=F Approach)



Week 48	n/N (%)
DOR	84/108 (77.8)
EFV	85/108 (78.7)
Difference (95% CI): -1.1 (-12.2, 10.0)	

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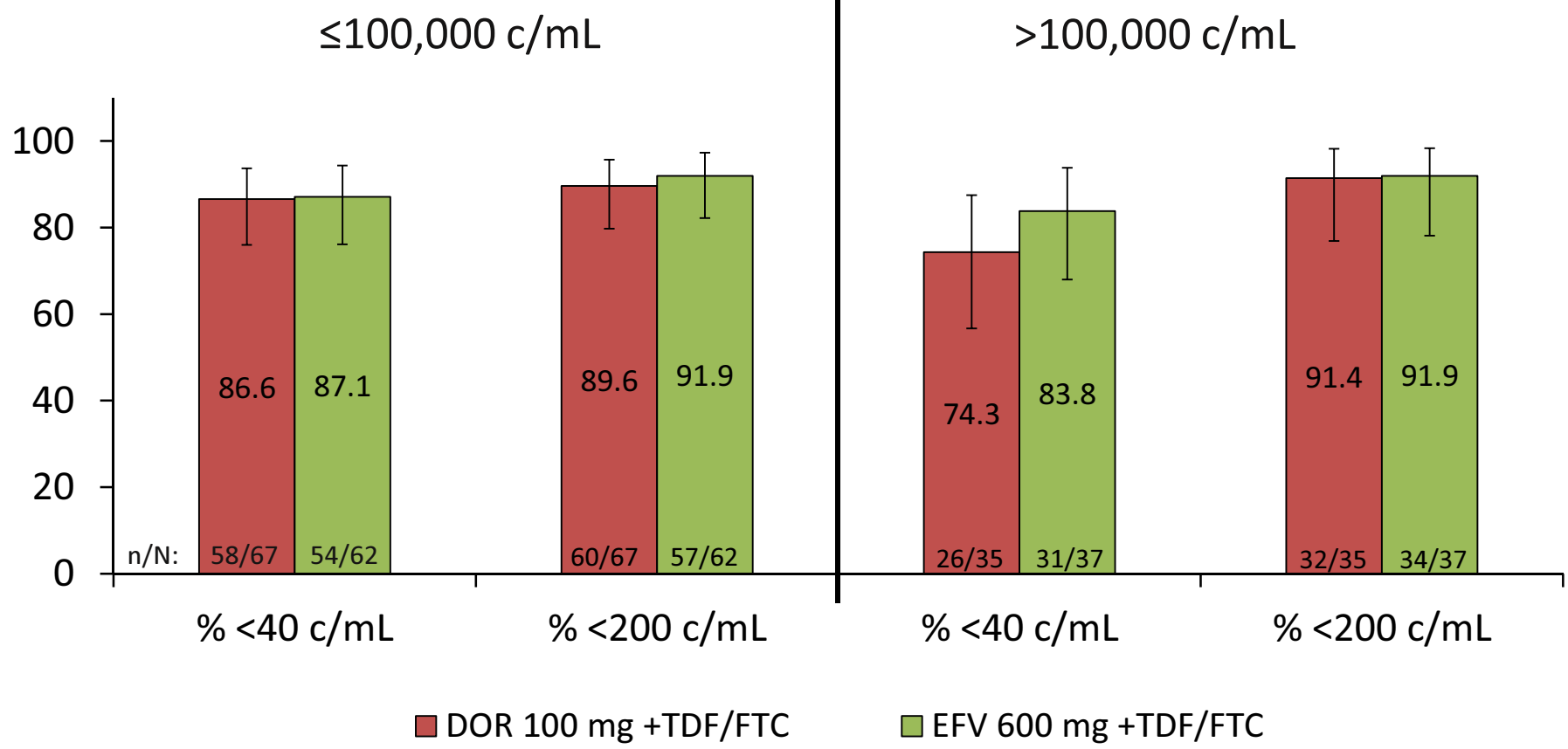
Virologic Response by Screening RNA

Week 48 (OF Approach*)



*Excludes patients who (1)discontinued due to AE, (2) discontinued due to non-treatment related reasons and had last RNA <40 c/mL, or (3) were on-study but missing data in week 48 window.

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Clinical Adverse Events (%)

	DOR 100 mg (N=108)	EFV 600 mg (N=108)	Difference [DOR – EFV] (95% CI)
One or more adverse events (AE)	87.0	88.9	-1.9 (-10.9, 7.1)
Serious AE†	6.5	8.3	-1.9 (-9.5, 5.6)
Death	0	0	
Discontinued due to AE	2.8	5.6	-2.8 (-9.2, 3.0)
Drug-related‡ AE	31.5	56.5	-25.0 (-37.3, -11.8)
Diarrhea	0.9	6.5	---
Nausea	7.4	5.6	---
Dizziness	6.5	25.9	---
Headache	2.8	5.6	---
Abnormal dreams	5.6	14.8	---
Insomnia	6.5	2.8	---
Nightmares	5.6	8.3	---
Sleep disorder	4.6	6.5	---

All patients also received TDF/FTC.
† Two serious AEs in the EFV group were considered drug-related: depression (1) and dizziness (1).
‡ Determined by investigator to be related to study therapy; specific AEs with >5% incidence are listed.

Specific AEs causing discontinuation (n): DOR – hallucination (1), B-cell lymphoma (1), Hodgkin's disease (1); EFV – dysaesthesia (1), hallucinations (2), drug eruption (1), dizziness (1), disturbance in attention (1).

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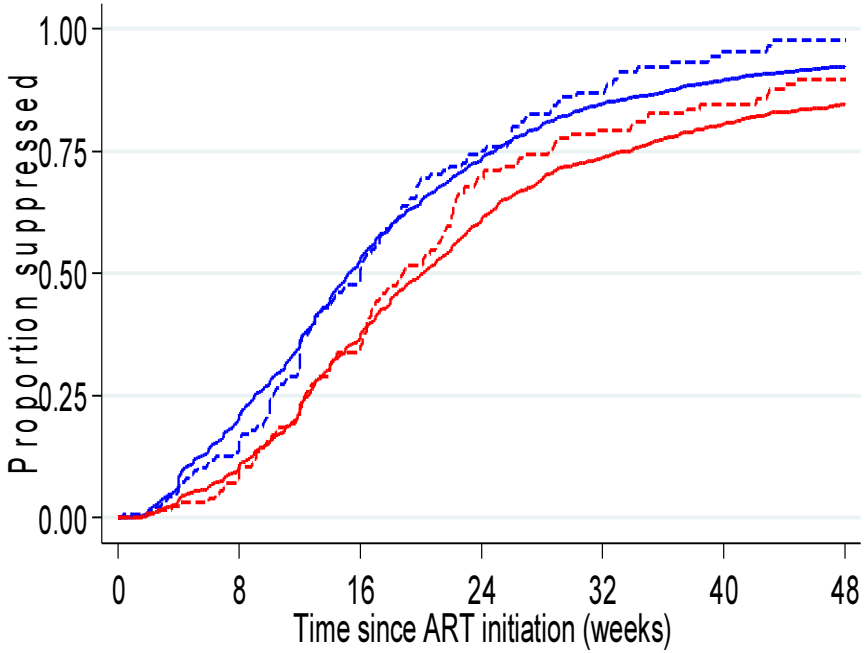
Pr Proprietary

ART strategies

Impact of Transmitted Thymidine Analogue Mutations on Responses to First-Line ART Anna Maria Geretti Abstract 482



Number at risk

1	4749	3557	2030	1082	562	356	251
2	1581	1301	857	504	315	219	157
3	140	114	65	31	15	4	2
4	129	114	82	37	25	16	10

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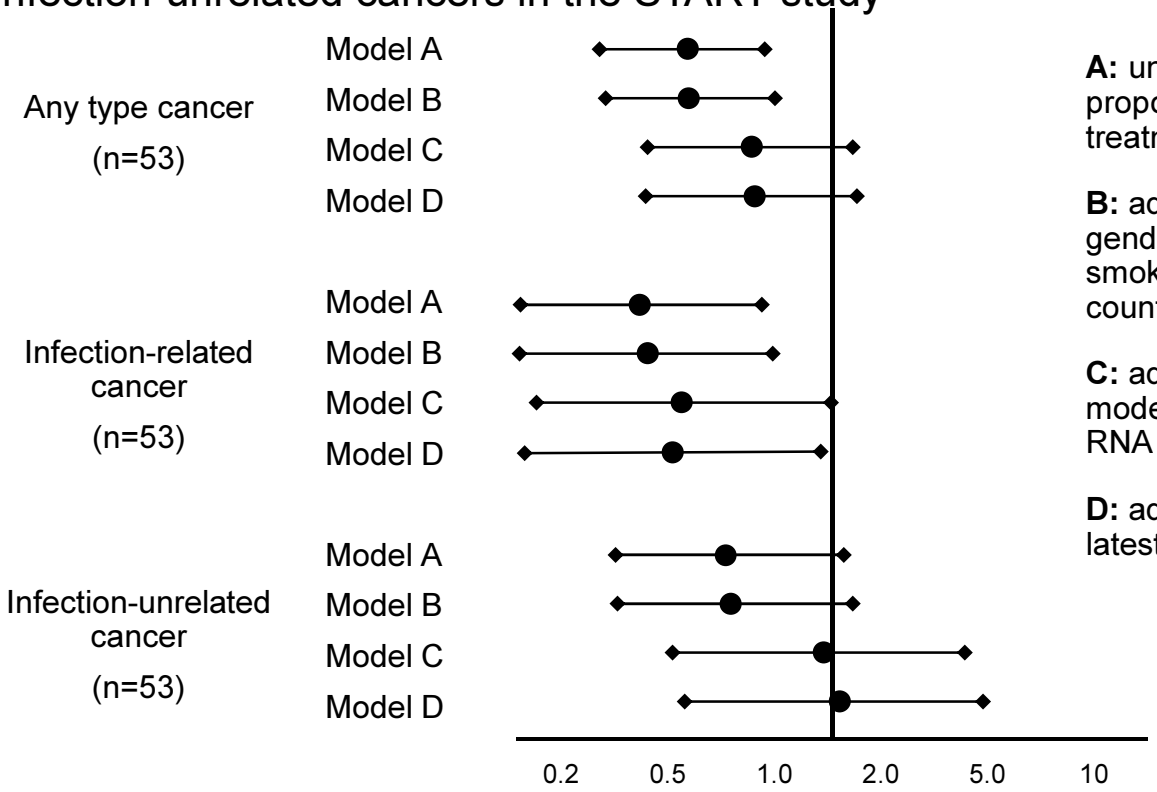
START Trial: Impact on Cancer

- Results: Immediate vs. deferred ART initiation and the risk of any type cancer, infection-related and infection-unrelated cancers in the START study



A: univariable, estimated in a Cox proportional hazards model with a single treatment indicator

B: adjusted for baseline covariates; age, gender, race, geographical region, smoking, BMI, hepatitis B/C, CD4 cell count and baseline $\log_{10}$ HIV RNA

C: adjusted for latest HIV RNA, modelled as <200 copies/mL vs HIV RNA >200 copies/mL

D: adjusted for latest CD4 cell count and latest HIV RNA (<200 copies/mL

74% reduction in risk of infection related cancers (KS, HL & NHL,HPV)
Factors associated with ↑ risk of Infection-related cancers

- Age
- Baseline HIV-RNA

↓ risk:

- high income country

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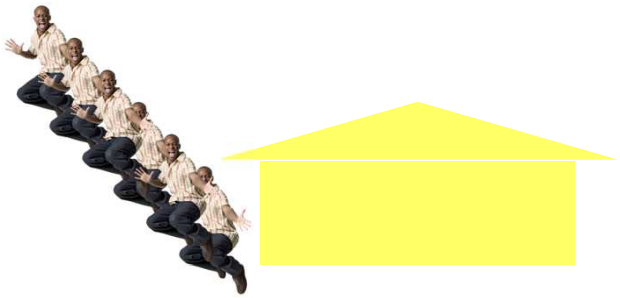
Borges A, et al. 23rd CROI; Boston, MA; February 22-25, 2016. Abst. 160.

Rap-IT trial -Starting Treatment Isn't Easy!



- HIV test; result positive
- Give blood sample for CD4 count
- Complete TB symptom screen
- Provide sputum sample if symptomatic

- Provide CD4 count results; treatment eligible
- Provide TB test results and initiate TB treatment if required

- Individual counseling session (education/adherence)

- Group counseling session (education/adherence)

- Provide results of other blood tests
- Treatment buddy session

- Conduct physical examination
- Dispense ARVs

Rosen S et al CROI 2016 abstract 1091

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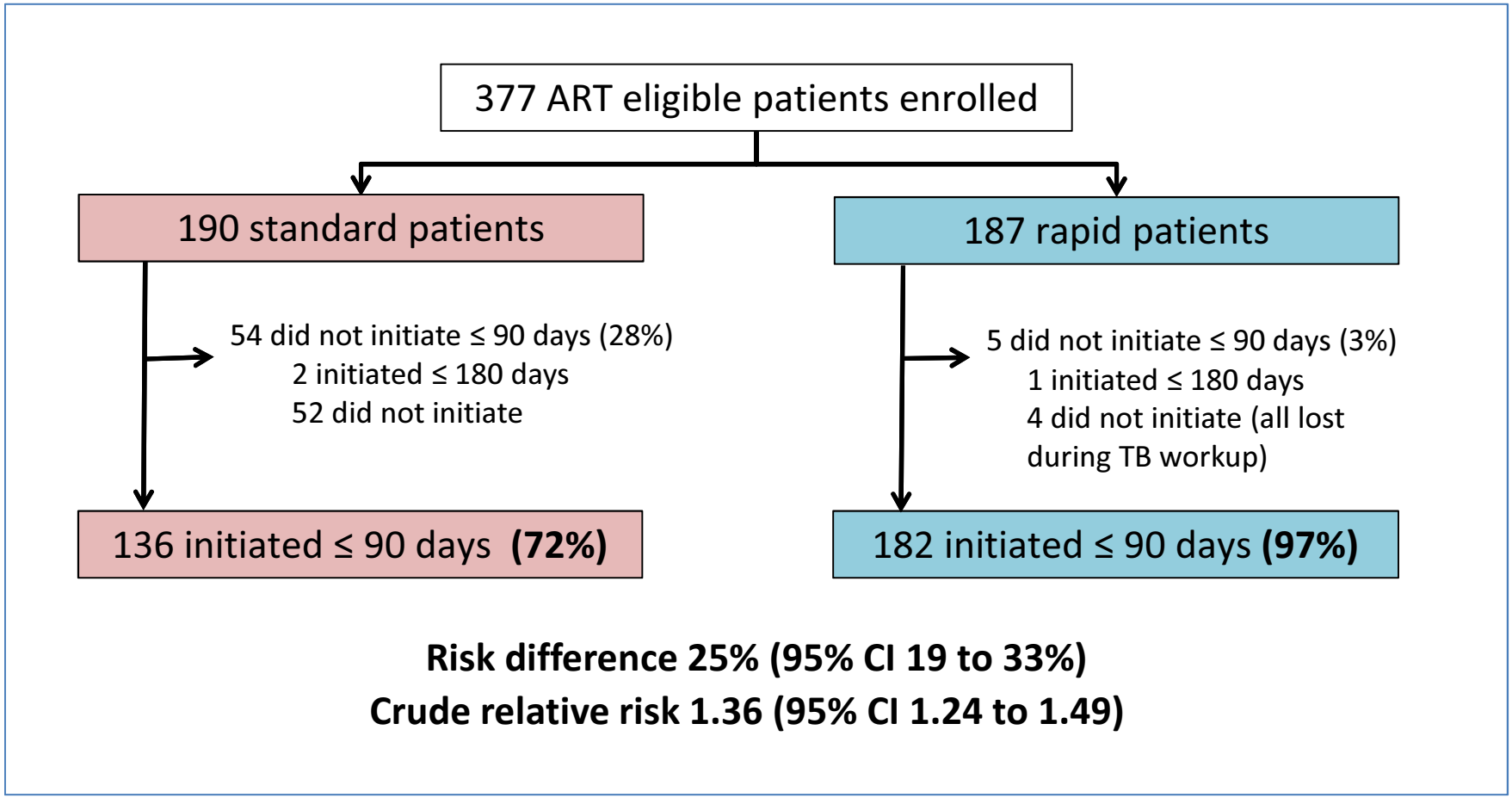
Major Programmatic Outcome: ART Initiation ≤ 90 Days



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Primary Protocol Outcome: Initiated, Retained, and Suppressed ≤ 10 Months

Outcome	Standard arm (n, %) n=190	Rapid arm (n, %) n=187	Crude risk difference [95% CI]	Crude relative risk* [95% CI]
Initiated ≤ 90 days	136 (72%)	182 (97%)	25% (19-33%)	1.36 (1.24-1.49)
Initiated ≤ 90 days and retained and suppressed by 10 months	**96 (51%)**	**119 (64%)**	**13% (3-23%)**	**1.26 (1.05-1.50)**
Of those not initiated ≤ 90 days and suppressed by 10 months:				
Not initiated	54 (28%)	5 (3%)		
Initiated but not suppressed or with no viral load reported	40 (21%)	63 (34%)		
Initiated ≤ 90 days and retained at 10 months	121 (64%)	151 (81%)	17% (5-23%)	1.27 (1.12-1.44)
Of those not initiated ≤ 90 days and retained at 10 months:				
Not initiated	54 (28%)	5 (3%)		
Initiated but not retained	15 (8%)	31 (17%)		

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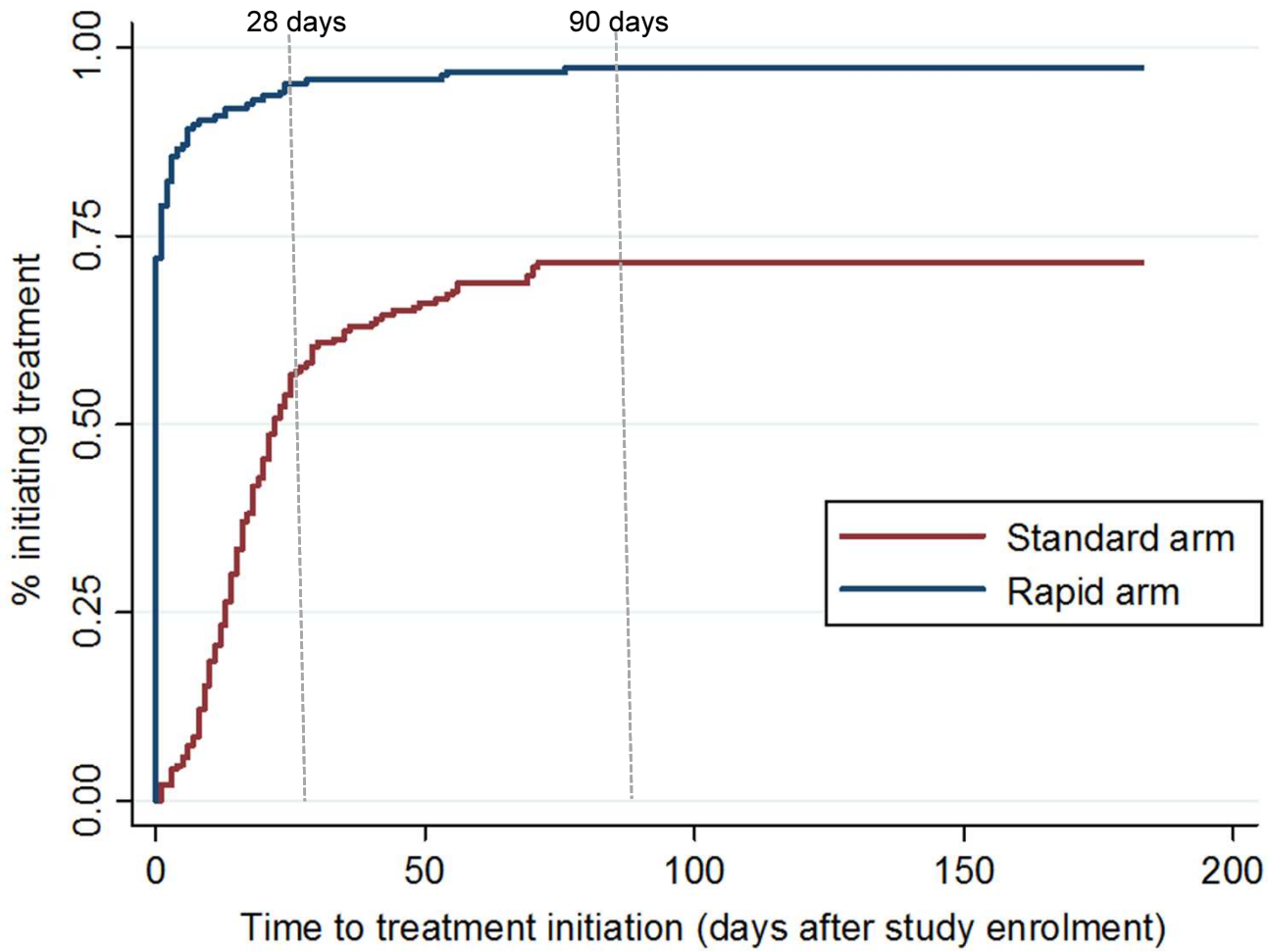
How Long Did It Take?



Median time in clinic between study enrollment and ARV dispensing in rapid group:

2.4 hours (IQR 2.1-2.8 hours)

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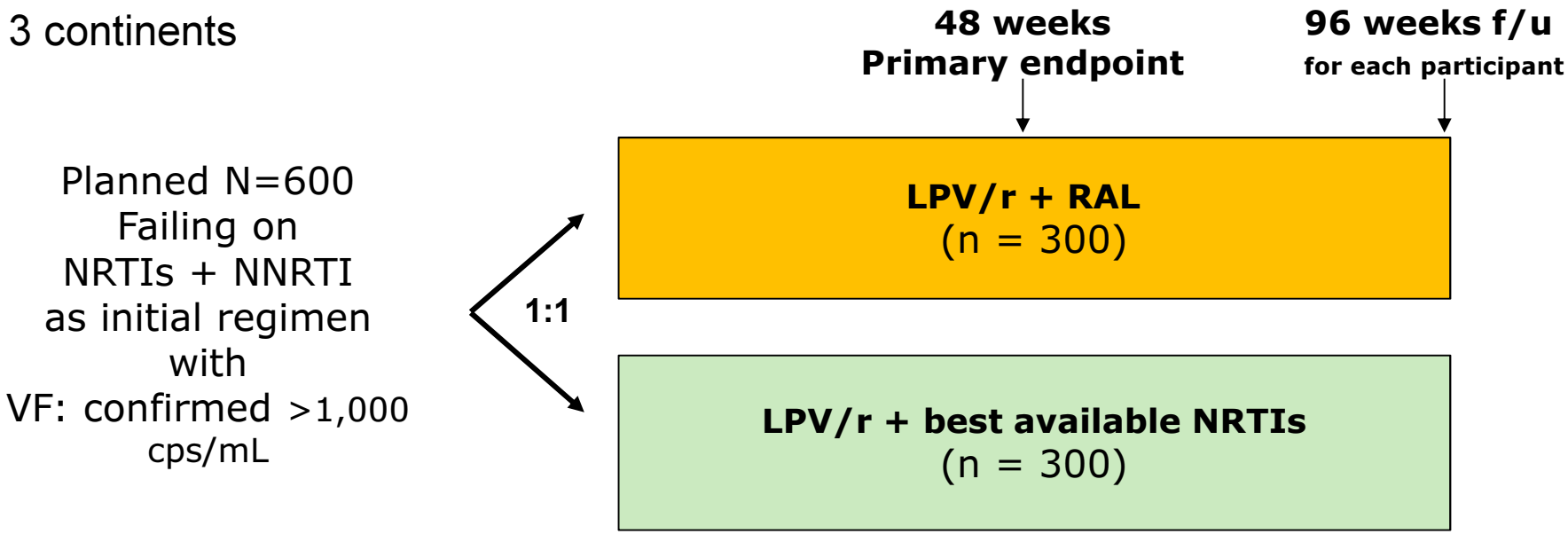
ACTG 5273 Randomized Trial of Second-line ART Supports WHO Guidance

Phase III, open-label, randomized, non-inferiority study
15 sites in 9 low-middle income countries
3 continents



- **Primary objective**: To determine whether the efficacy of RAL arm is non-inferior to that of NRTI arm by 48 weeks
- **Primary endpoint**: Time to VF= confirmed VL>400 cps/mL at ≥ 24 wks
- **N adjusted** to 480 after results of SECOND LINE, EARNEST and A5234:
  - Power >90% and 10% non-inferiority margin maintained
  - Follow up shortened to 52 weeks after the last enrollment

La Rosa A et al CROI 2016 abstract 30

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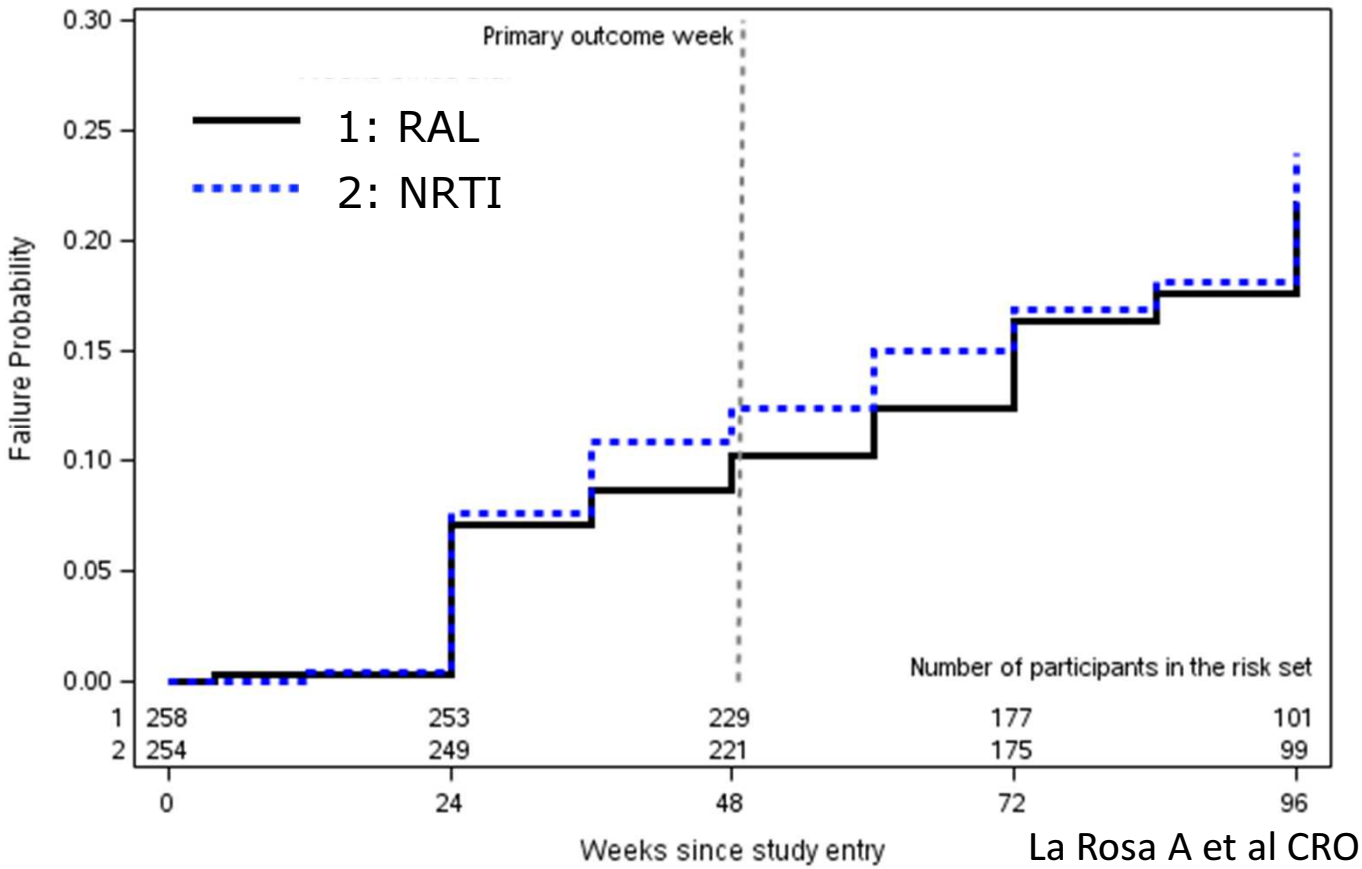
Results: Primary Endpoint

Time to virologic failure (confirmed VL>400 c/mL at/after 24 weeks)

Difference in failure probability by week 48

RAL - NRTI: **-3.4%** (95% CI -8.4, 2.5)



Upper bound of CI <10%
(non-inferiority boundary)
RAL non-inferior

Upper bound of CI > zero
RAL not superior

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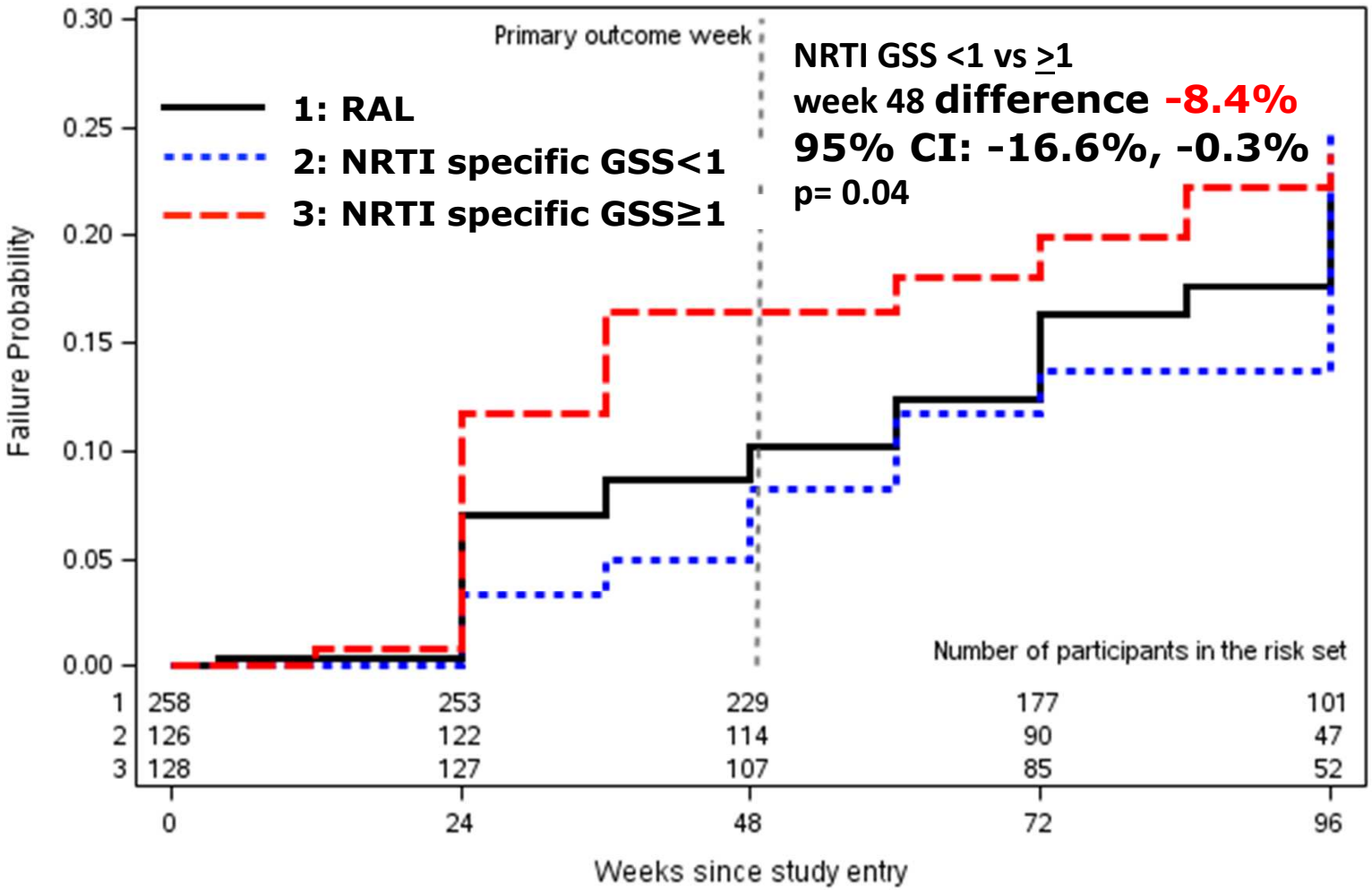
Effect of Prescribed NRTI GSS on primary endpoint of time to VF



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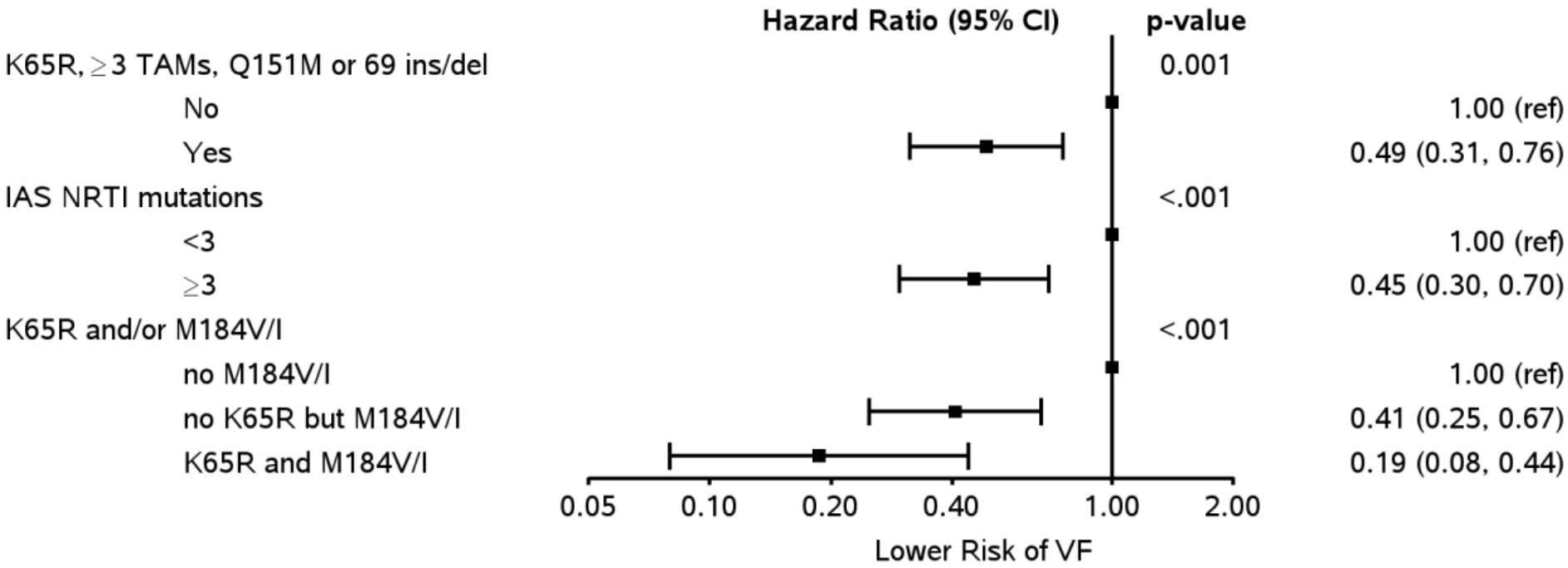
Associations of other NRTI Resistance Characteristics at Entry with the risk of Virologic Failure (VF) – Both arms included



No difference by arm

Results consistent when adjusted for entry HIV-1 RNA, week 4 self-report adherence, prior exposure to TDF, and country

La Rosa A et al CROI 2016 abstract

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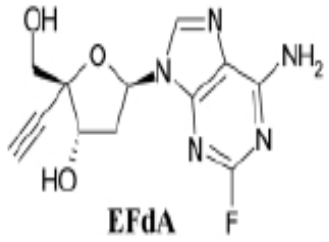
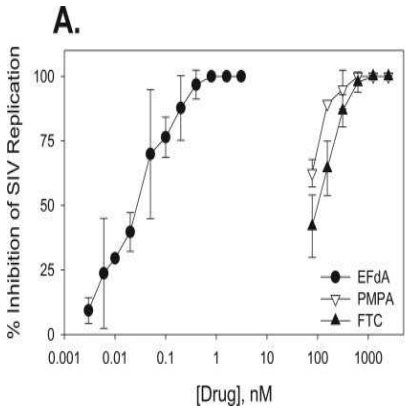
New ART, phase I-II

4′-ethynyl-2-fluoro-2′-deoxyadenosine (EFdA)

- EFdA (MK-8591) is a nucleoside reverse transcriptase translocation inhibitor (NRTTI)



- Sub-nanomolar potency in vitro[1] and prolonged suppression of SIV in macaque model[2]



B.

	EC_{50} (nM)	EC_{95} (nM)
EFdA	0.04 +/- 0.01	0.4
PMPA	67.5 +/- 6.5	240
FTC	108.6 +/- 9.2	580

- Prolonged persistence of triphosphate form in PBMC and macrophage
- On dose allowed a VL drop of 1.78log ut to Day 10
- Potential for once weekly dosing **(Friedman et al Abstract 437LB)**
- Long-acting formulations under development **(Grobler et al Abstract 98)**

[1]Michailidis et al J Biol Chem 284: 35681-91; 2009 [2]Murphey-Corb et al AAC 56:4707-12; 2012

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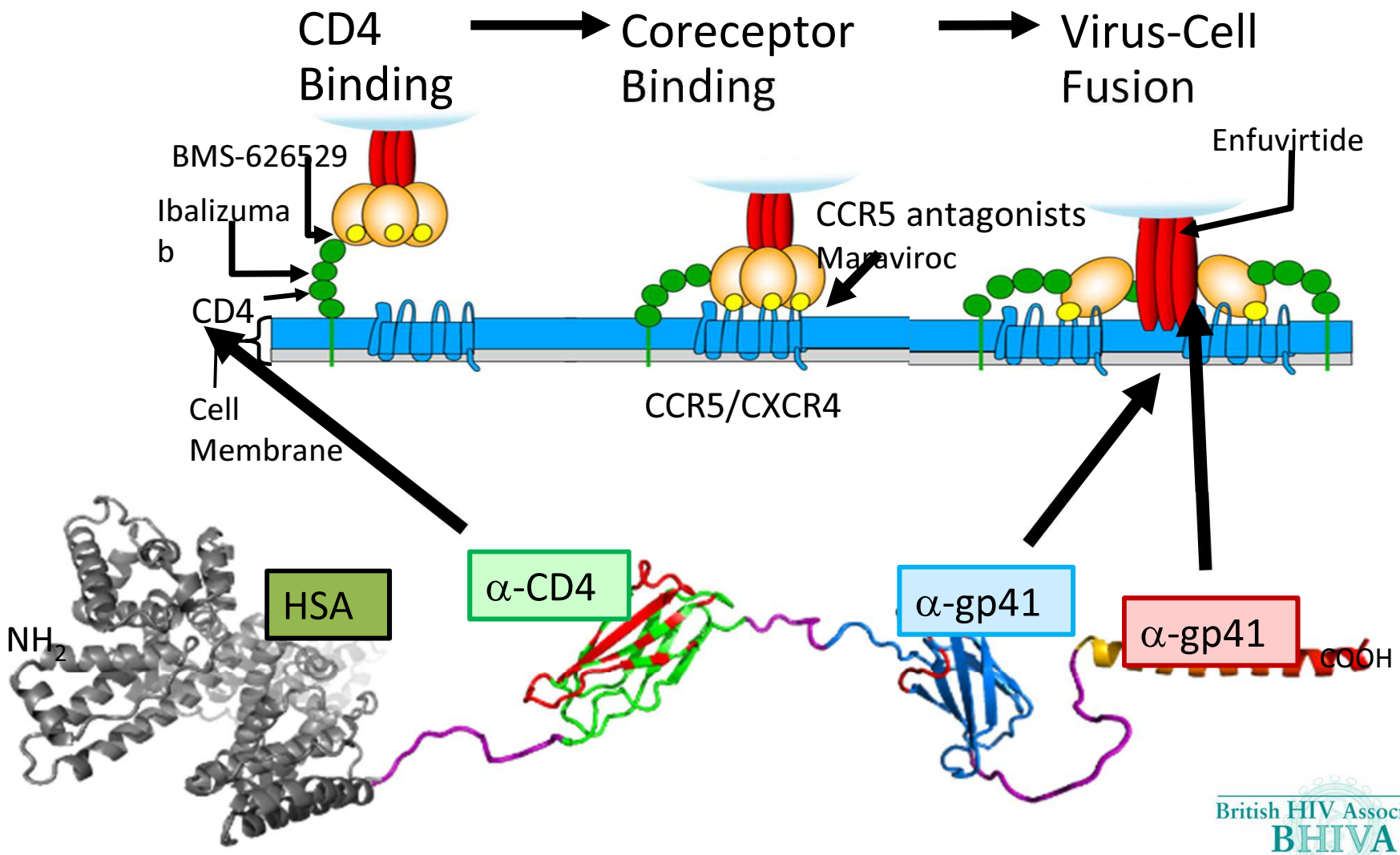
HIV-1 Combinectin: BMS-986197-mouse model

- BMS-986197 contains 2 α-HIV-1 Adnectins and a peptide fusion inhibitor

Krystal et al Abstract 97



- long-acting (weekly dose) biologic molecule containing 3 individual inhibitors of HIV-1

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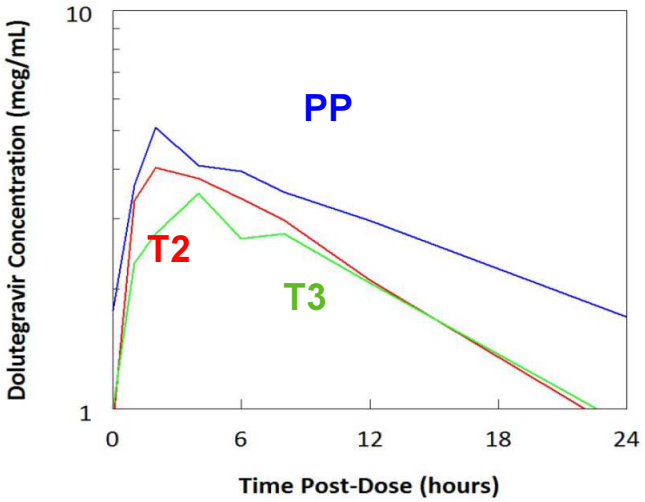
Pharmacokinetics

- Dolutegravir in pregnancy
- Dabigatrin and cobicistat

IMPAACT P1026

- Pregnant women (N=21)
- DTG 50mg qd
- Age 31.8 (21.6 – 42.3)



Mothers

- Differences in exposure (NS; low N)
- 2 pre-eclampsia
- 1 ↑ALT
- 100% suppressed

Infants

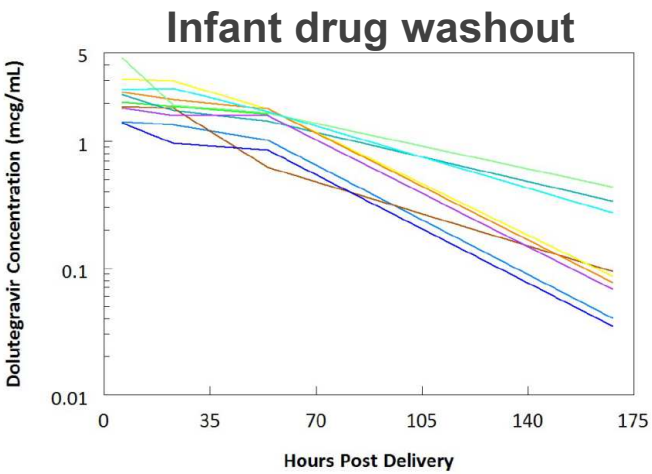
DTG T½ 35h vs ~11h in mum

9 uninfected, 9 pending

4 Infants hypoglycaemia

4 congenital anomalies:

- Total anomalous pulmonary venous return
- Polycystic kidney and cystic fibrosis
- Congenital chin tremor
- Fibrum terminale fibrolipoma & sacral dimple



Mulligan et al CROI 2016; Abstr 438

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Oral Anticoagulants

Anticoagulants

- Generally narrow therapeutic index
- Inhibitors – bleeding can be prolonged – consider reversibility
- Inducers – adverse consequences on discontinuation

Novel Oral Anticoagulants

- **Rivaroxaban & Apixaban – CYP3A4 and PgP substrate**
- **Dabigatran – PgP substrate**
- **Dabigatran and cobicistat (CROI 2016, Abstr 430) – prolonged TT**
- **Caution. Anti-factor Xa useful ?**

	DTG	EVGc	RAL	EFV	RPV	DRV c/r	ATV c/r	TDF	ABC	(X)TC
Acenocumarol	◆	■	◆	■	◆	■	■	◆	◆	◆
Phenprocoumon	◆	■	◆	■	◆	■	■	◆	◆	◆
Warfarin	◆	■	◆	■	◆	■	■	◆	◆	◆
Dalteparin	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Enoxaparin	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Dabigatran	◆	■	◆	◆	■	■	■	◆	◆	◆
Rivaroxaban	◆	●	◆	■	◆	●	●	◆	◆	◆

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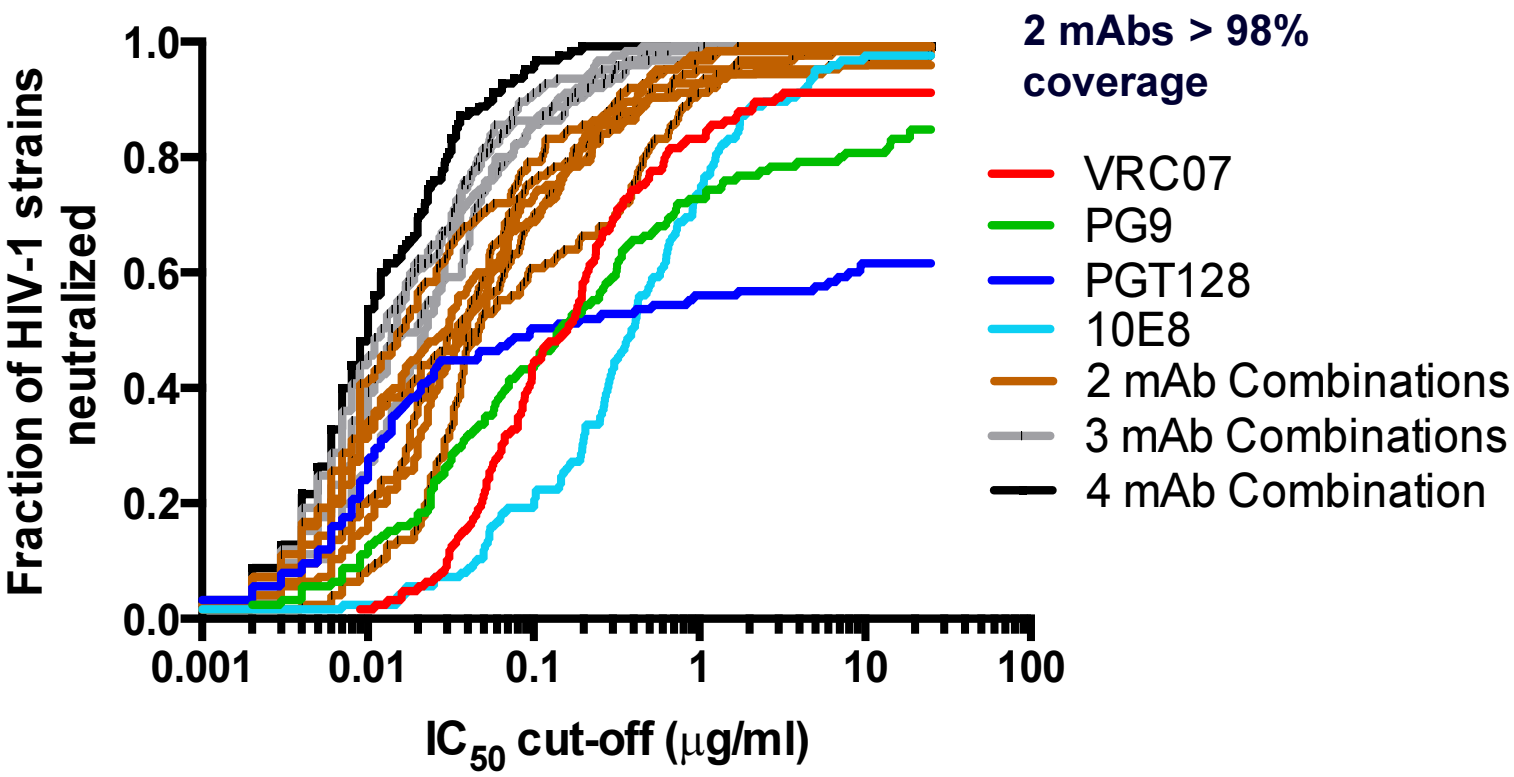
ART ‘Plus’

- Antibodies for HIV-1 prevention and treatment
  (Mascola plenary, abstract 15)

Combined Antibodies:
Improved Potency and Breadth



Kong, Montefiori Korber et al. J. Virol (2015)

CAVIMC Comprehensive Antibody - Vaccine Immune Monitoring Consortium

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Broadly Neutralizing Antibodies as Therapy

- Can they be used successfully as therapy with ART?
  - Single antibodies lack needed breadth[refs]
  - Combinations of antibodies with differing targets
    - Anti-CD4 binding plus anti-V3 or V2 plus others?
  - Modifiable to increase half-life
  - In combination with long-acting antiretrovirals?
- But…
  - Cumbersome delivery, increasing potency = decreasing dose
  - Virus escape – frequency of monitoring
  - Anti-idiotype or other inhibitory antibodies

Caskey et al Nature 2015;
Lynch et al Sci Transl Med 2015; Bar et al Abstract 32LB; Chun et al Abstract 311LB

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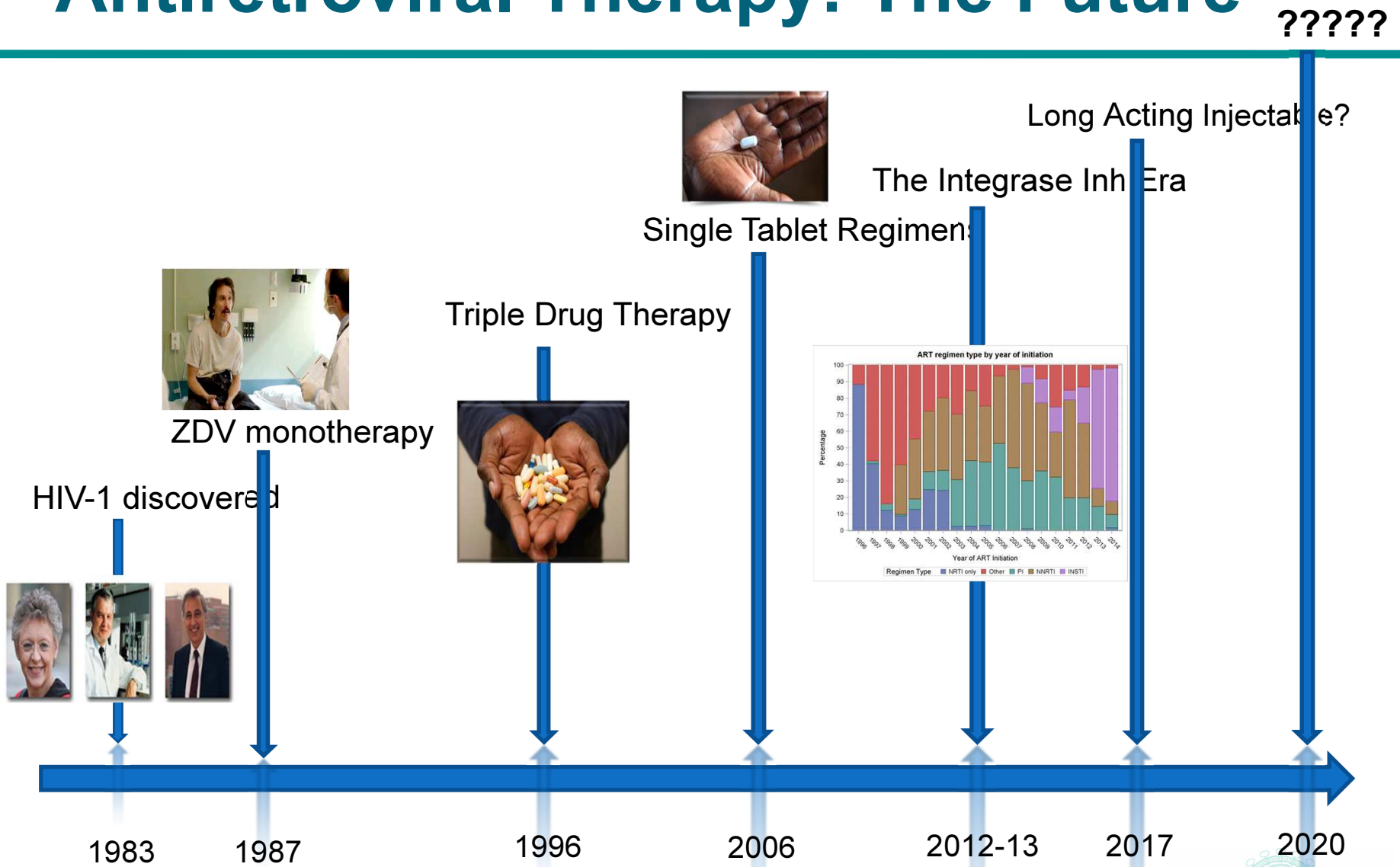
Antiretroviral Therapy: The Future



Joe Eron

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ART

- New drugs and new classes continue in development
- New formulations, new routes for delivery
- Implementing universal treatment
- Sustaining long term treatment
- Managing resistance
- New treatment goals?

BHIVA 'Best of CROI' Working Party 2016

- Dr Jasmini Alagaratnam
- Prof Brian Angus
- Dr David Asboe
- Dr Sanjay Bhagani
- Dr Daniel Bradshaw
- Dr Kate Childs
- Dr Duncan Churchill
- Dr Amanda Clarke
- Dr Paul Collini
- Mr Simon Collins
- Prof Satyajit Das
- Dr Annemiek de Ruiter
- Prof David Dockrell
- Prof Lucy Dorrell
- Dr Ellen Dwyer
- Dr Sarah Fidler
- Dr Julie Fox
- Dr Andrew Freedman
- Dr David Hawkins
- Prof Saye Khoo
- Prof Clifford Leen
- Prof Derek Macallan
- Dr Achyuta Nori
- Dr Ed Ong
- Dr Chloe Orkin
- Dr Adrian Palfreeman
- Dr Brendan Payne
- Dr Frank Post
- Dr Iain Reeves
- Dr Jonathan Underwood
- Dr Jaime Vera
- Dr Ed Wilkins

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