

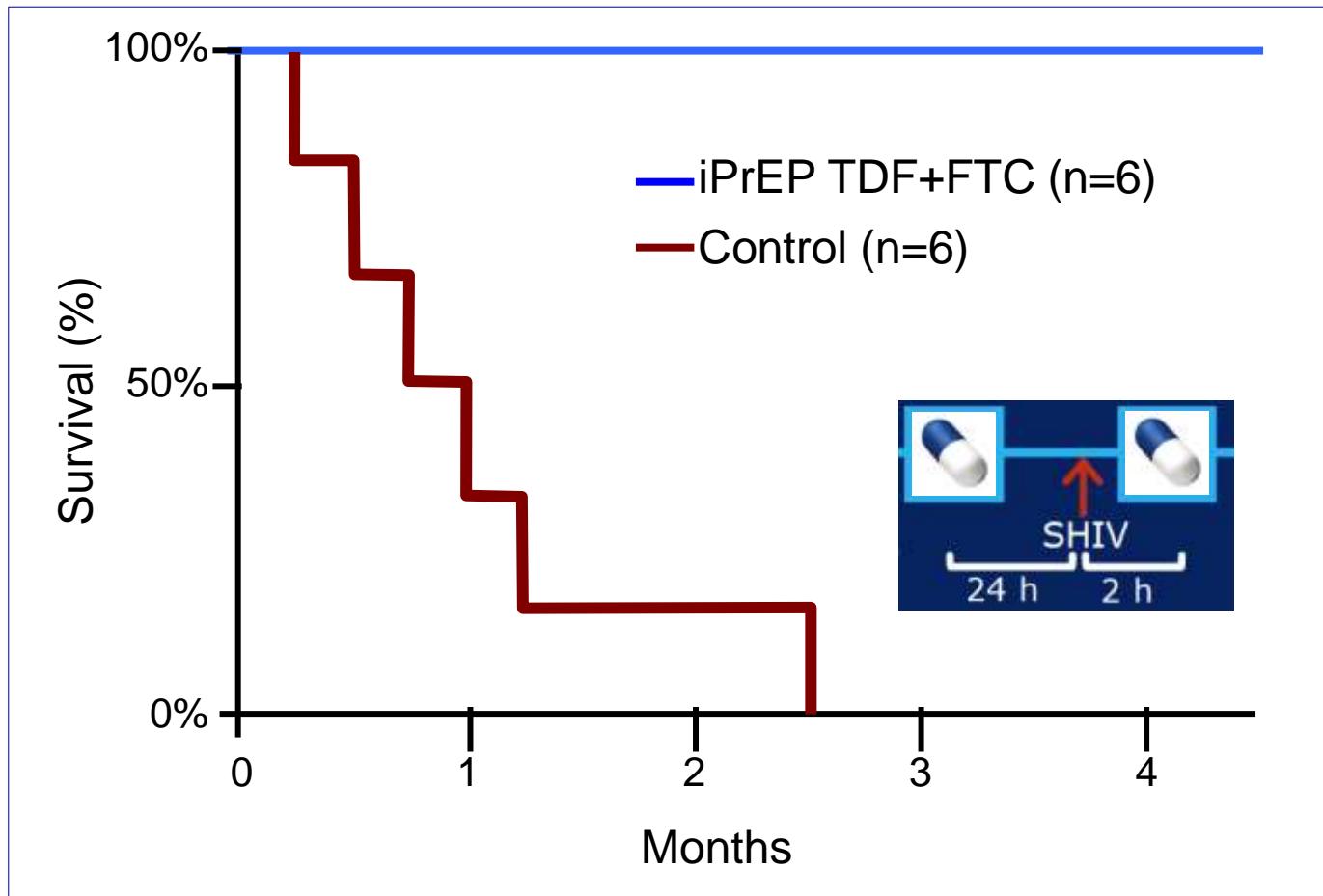
HIV Transmission & Prevention



Pietro Vernazza, St. Gallen

Macaque model

Weekly vaginal SHIV-Challenge (50 TCID₅₀)

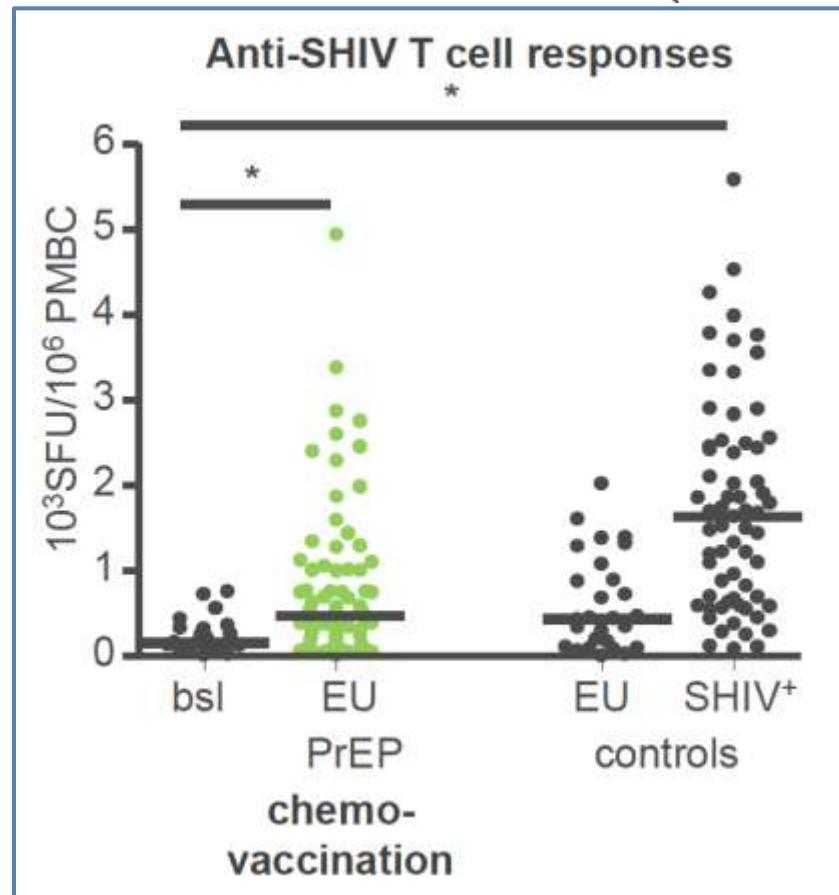


Macaque model

SHIV-Challenge and T-cell response

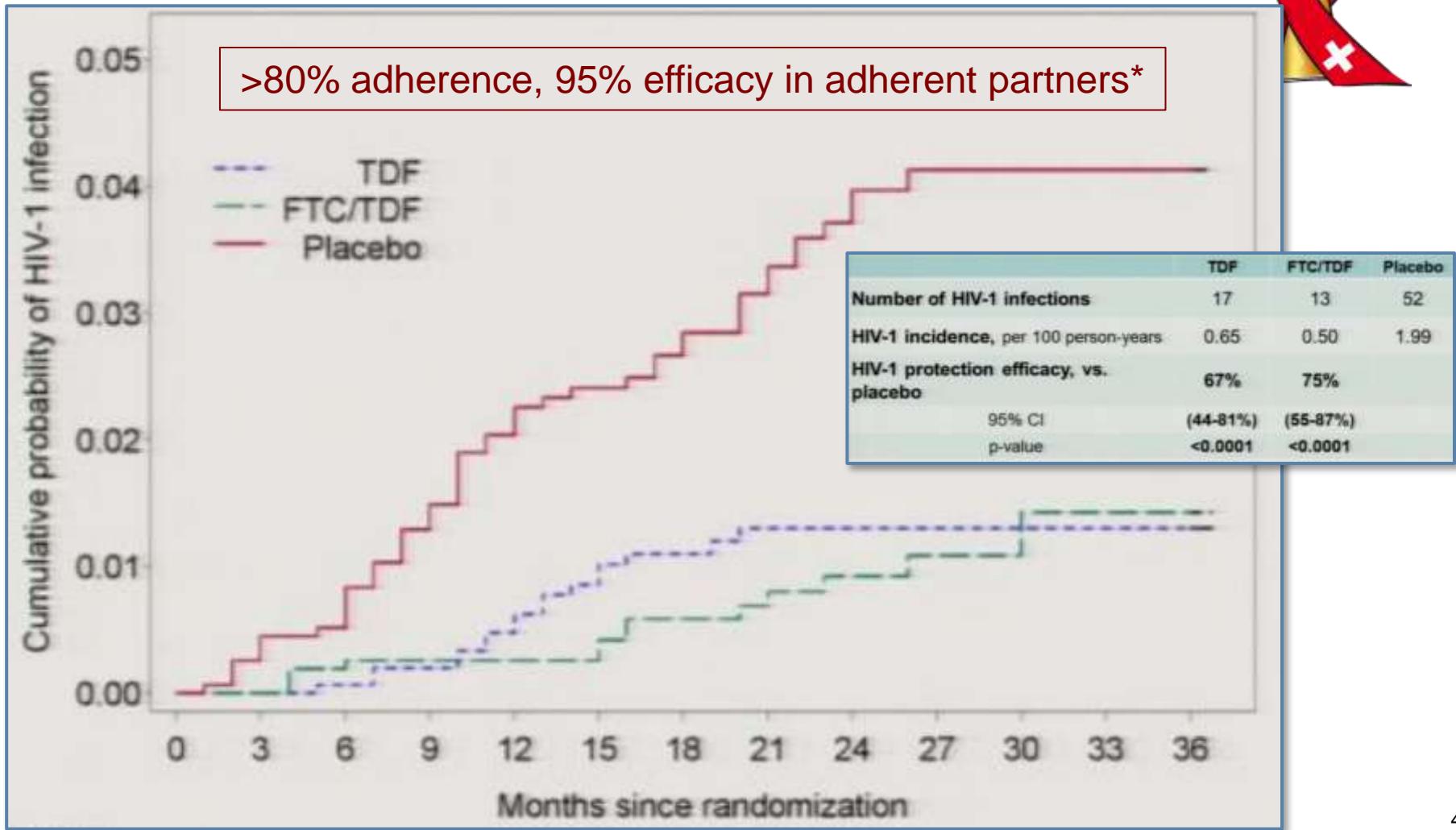


- 9 exposed macaques
 - TVD-PrEP (oral/topical)
- SHIV specific T-cells
 - 8 / 9 Animals w. PrEP
 - 4/12 Controls
- Response higher and lasted longer in PrEP protected animals



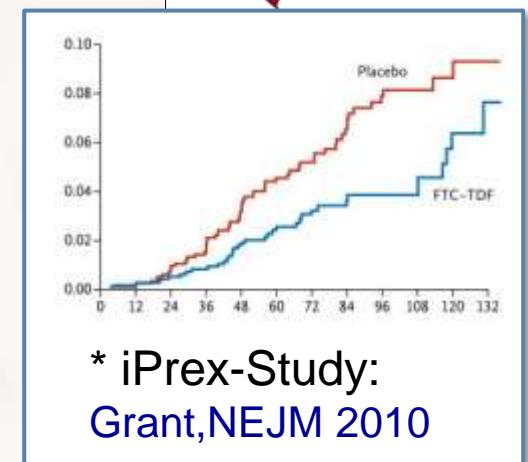
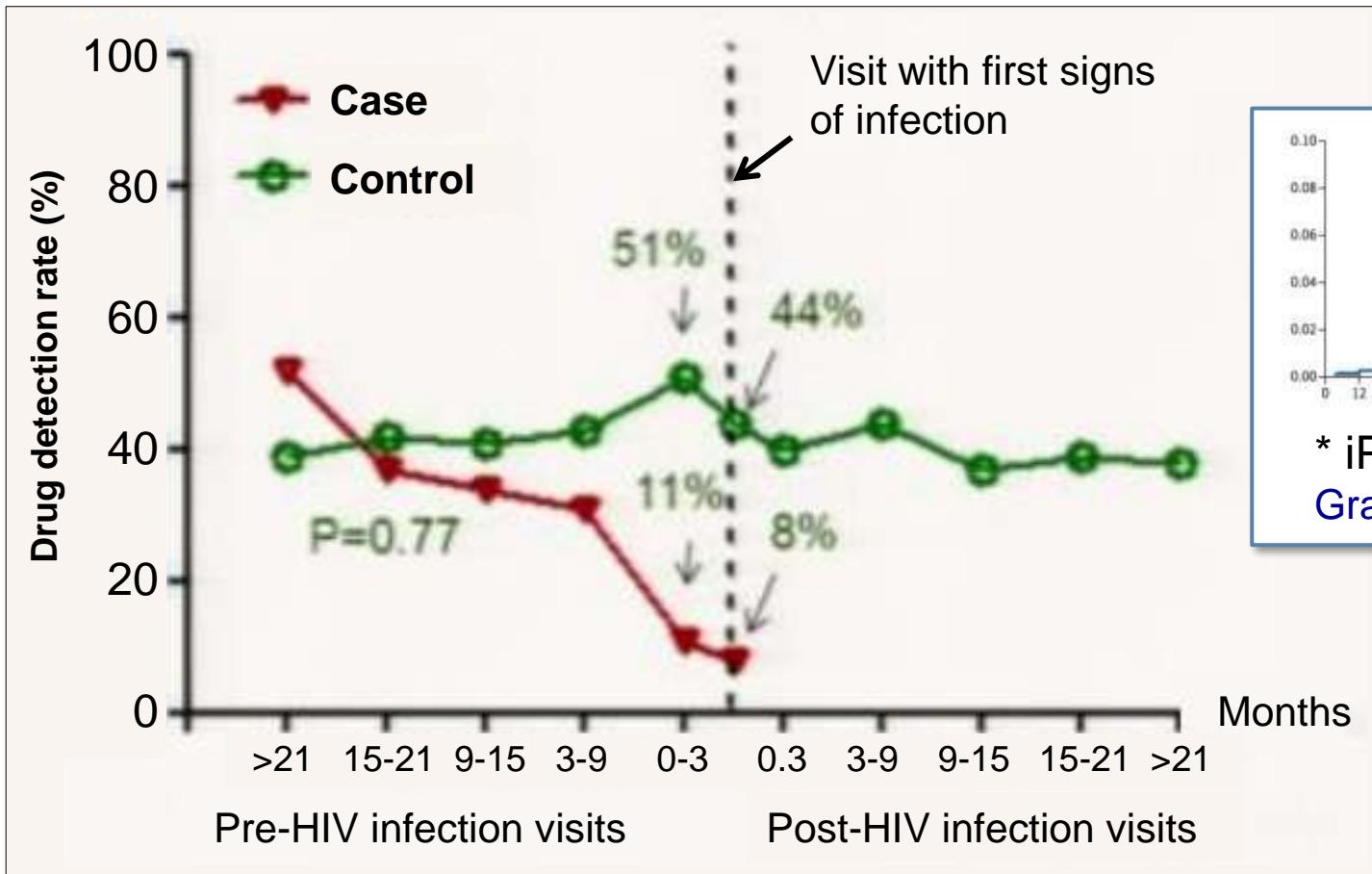
Partners PrEP Study in sero d/c heterosexual partners

PrEP: daily therapy to prevent HIV ?





Adherence also key in iPrex* study



PrEP for women: FEM-Prep and Vaginal Ring



- FEM-Prep trial failed due to low adherence
 - daily Truvada → see [Abstract 32-LB](#)
 - some evidence for resistance, will be further studied
- Vaginal ring (RCT)
 - Dapivirine
 - 280 women
 - 12 weeks
 - Adherence to ring was 92%
 - excellent safety shown
 - → Phase III planned

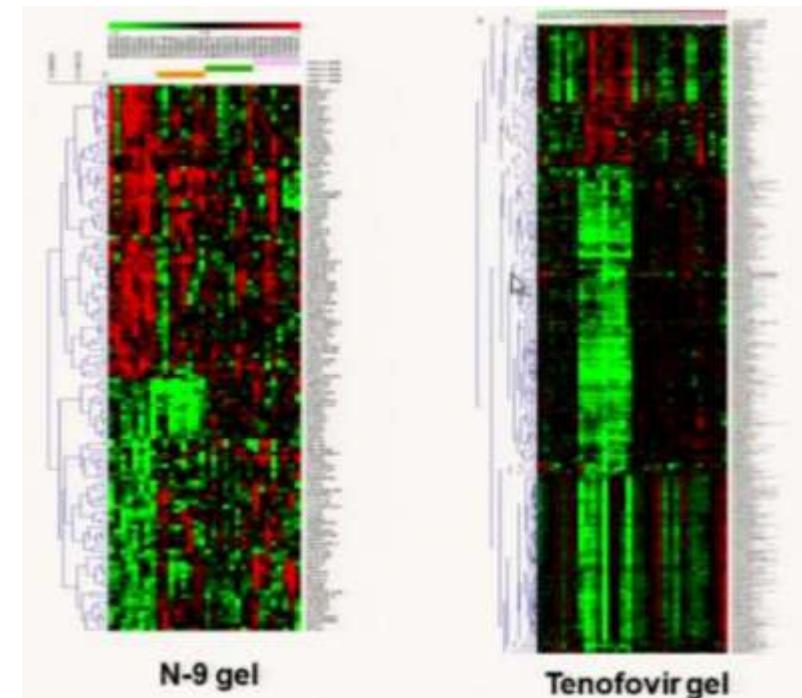
Safety Variable	Dapivirine Ring N=140 n (%)	Placebo Ring N=140 n (%)
Serious adverse event	1 (0.7)	4 (2.9)
HIV seroconversion	0	3 (2.1)
Positive pregnancy test	2 (1.4)	4 (2.9)
Grade 2+ laboratory safety test	3 (2.1) ^a	7 (5.0)
Abnormal vaginal pH ^b	100 (71.4)	99 (70.7)
Abnormal vaginal flora ^b	57 (40.7)	62 (44.3)
Sexually transmitted infection ^c	29 (20.7)	34 (24.3)
Abnormal colposcopy finding ^d	23 (16.4)	23 (16.4)

MTN-007-Study

Rectal use of topical microbicide



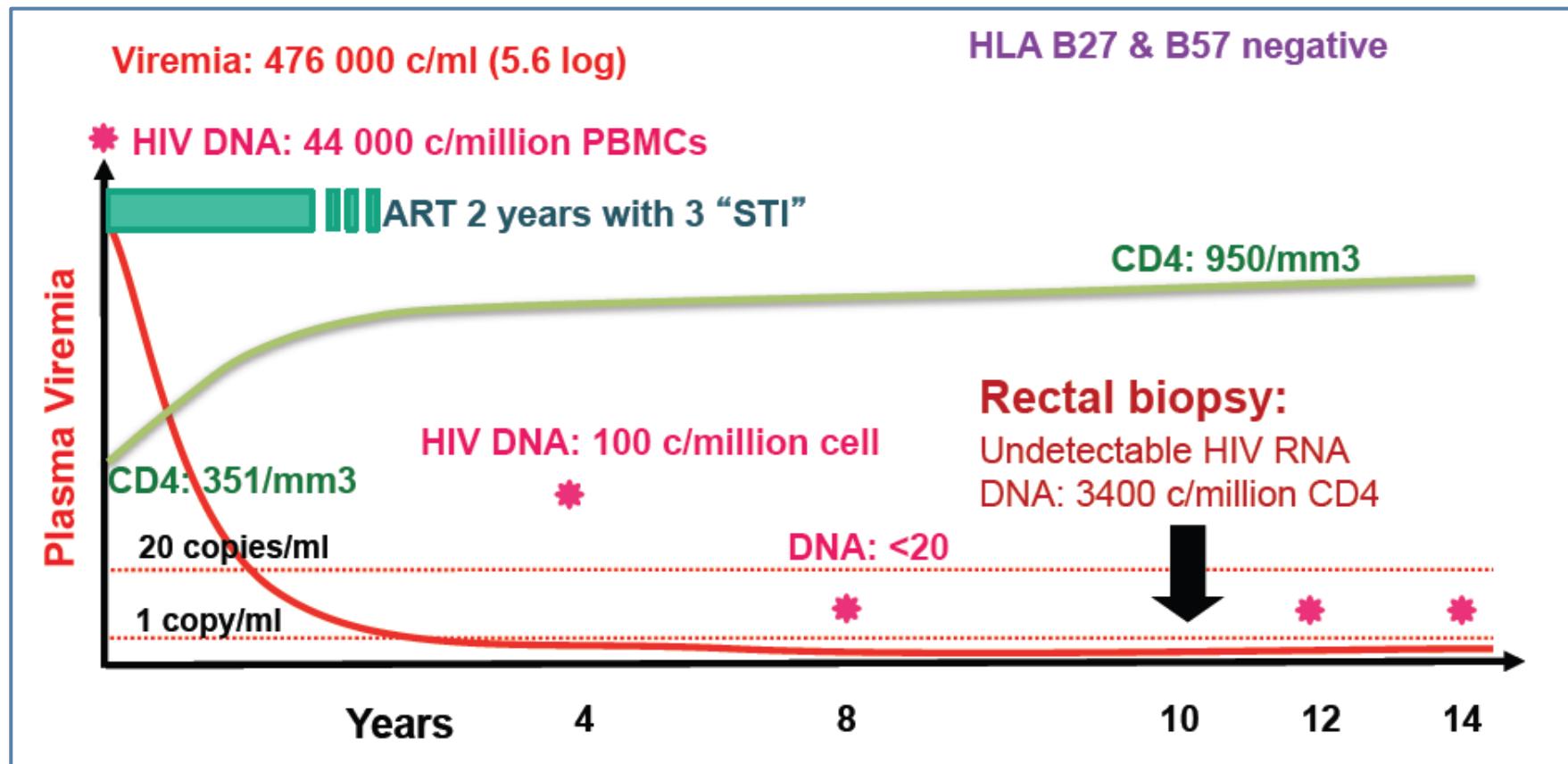
- RCT to study safety & acceptability of rectal MC
 - Nonoxytol-9 (“toxic control”)
 - Tenofovir 1% Gel (reduced glycerin formulation)
 - HEC (Gel control)
 - No Treatment (n=16/arm)
- One third women
- Toxicity in biopsy
 - Micro array
 - N-9 most toxic
 - TDF well tolerated





Can HIV ever be cured?

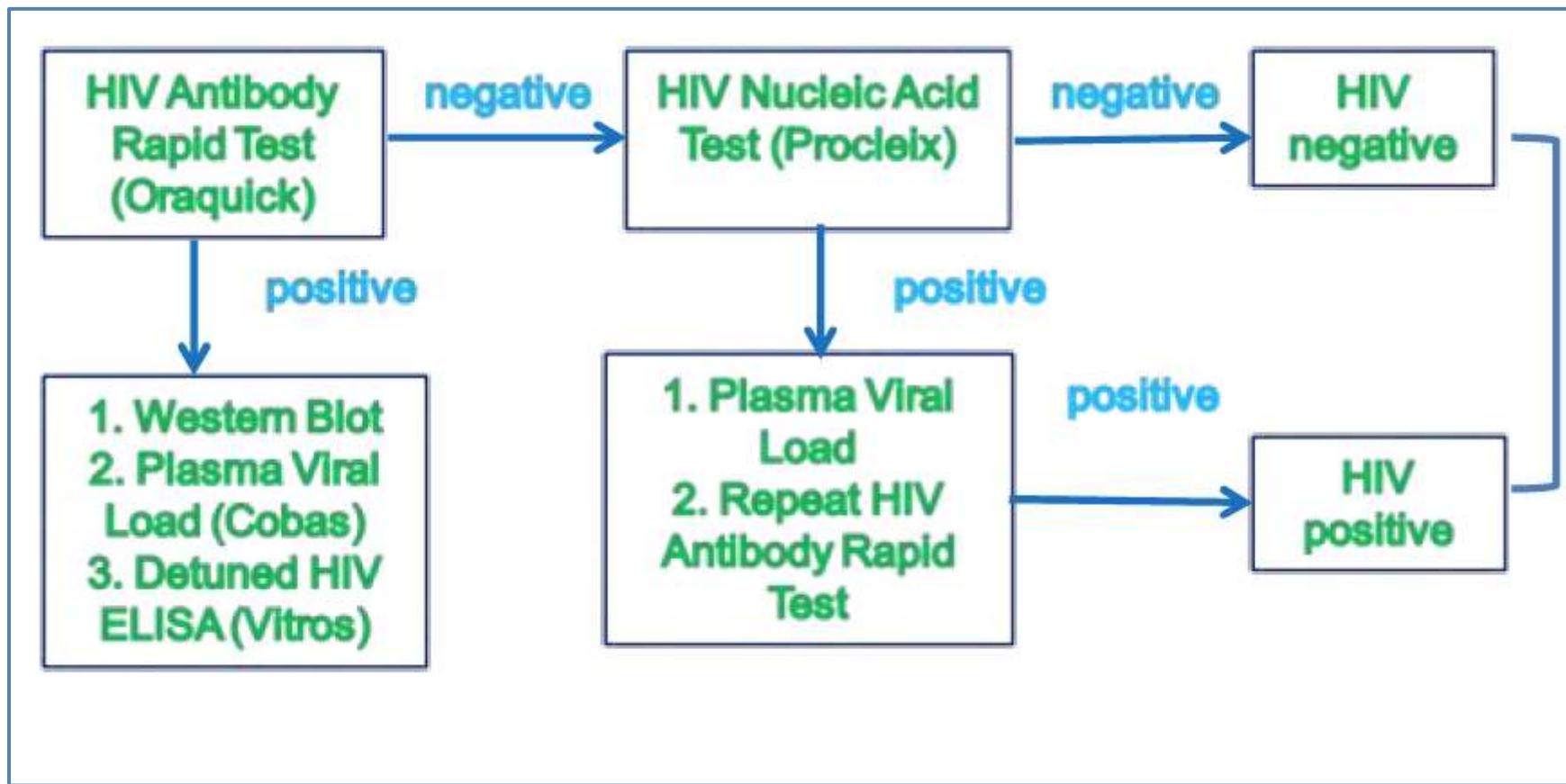
- 45 patients with treatment starting during PHI
- 8 remain without treatment after tx interruption
- 2 patients have no detectable virus, one example given:



Early Testing: Identifying the most infectious individuals



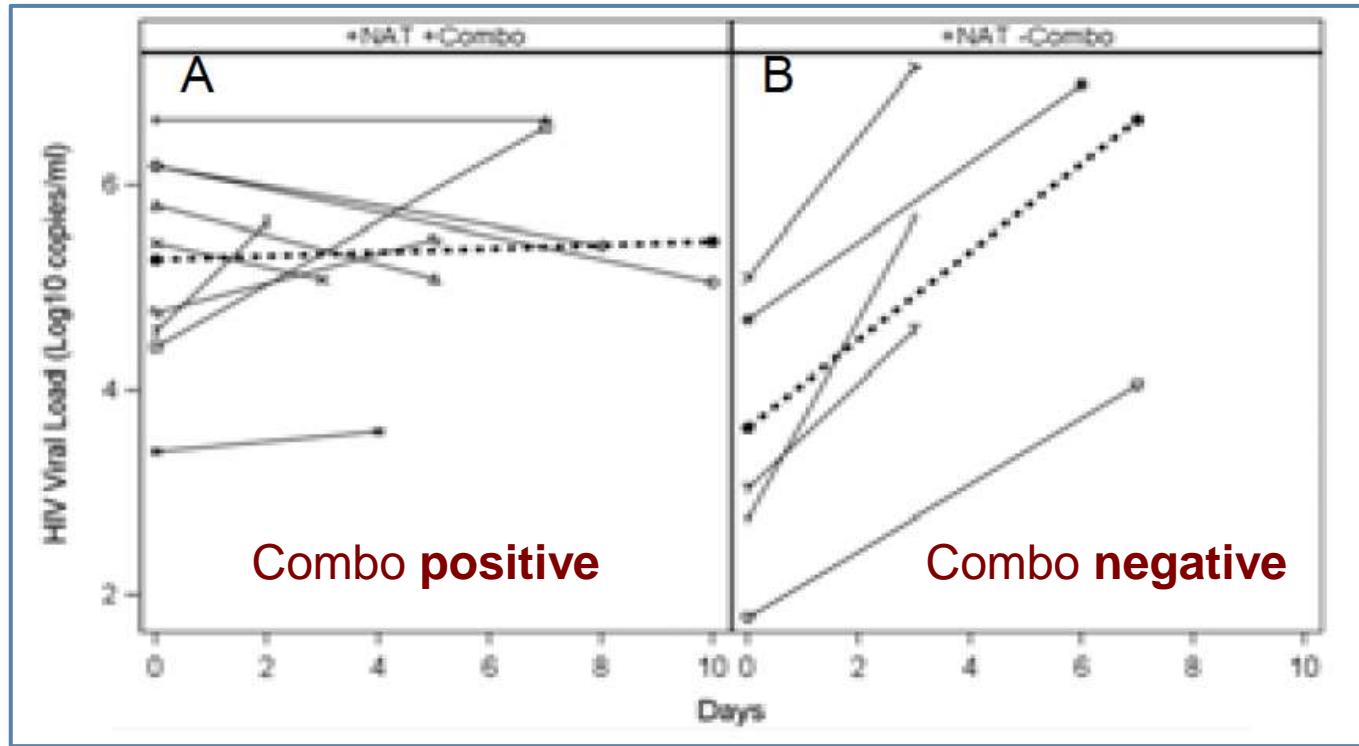
- The role of NA-Testing in PHI (2008-2010)





San Diego: NAT in PHI (n=2744 Tests)

- 14 cases of PHI identified (0.5%)
 - 9 positive with HIV-Ab/Ag-Combo assay
 - 5 (36%) negative w. Combo





Risk factors for Combo-NEG PHI

- ◆ Risk behavior in past month

Patient ID	# Partners	Protected anal sex		Unprotected	
		# PIAI	# PRAI	# UIAI	# URAI
1	10	2	0	9	0
2	3	1	0	0	0
3	2	2	2	0	0
4	20	2	2	3	3
5	2	0	2	0	18
Total	37	7	6	12	21

→ PHI symptoms and / or recent risk behavior should prompt NA-Testing

→ Authors calculate cost-effectiveness based on price of NAT = 14-40 US\$