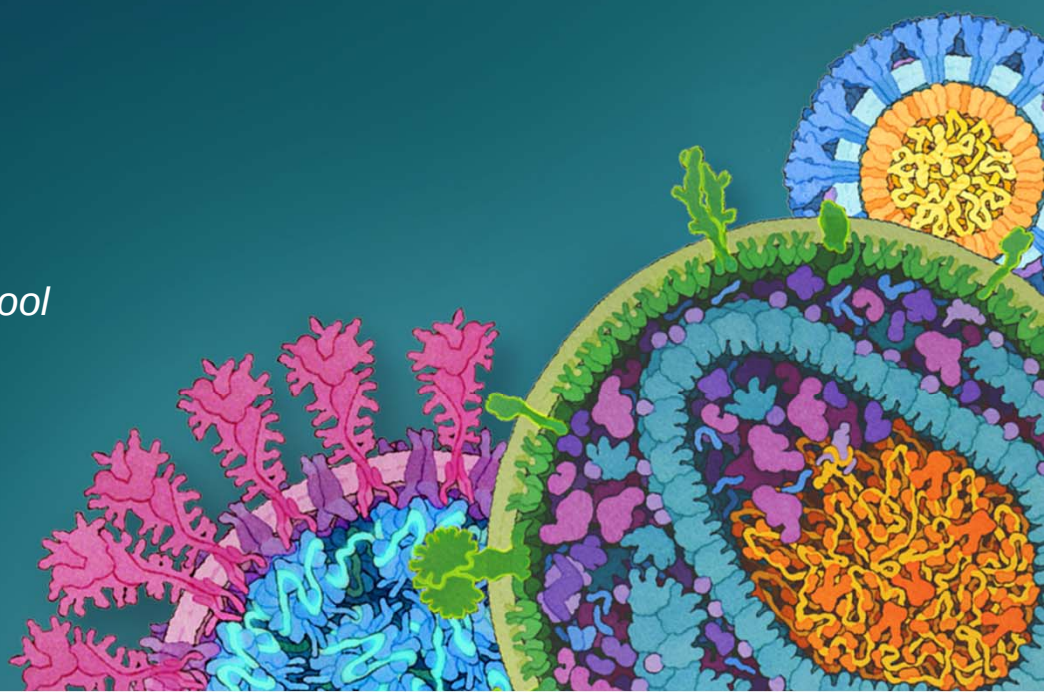
CROI 2022

Post-Treatment Controllers Maintain a Limited Intact Reservoir After ART Interruption

Presenter: Yijia Li, M.D.

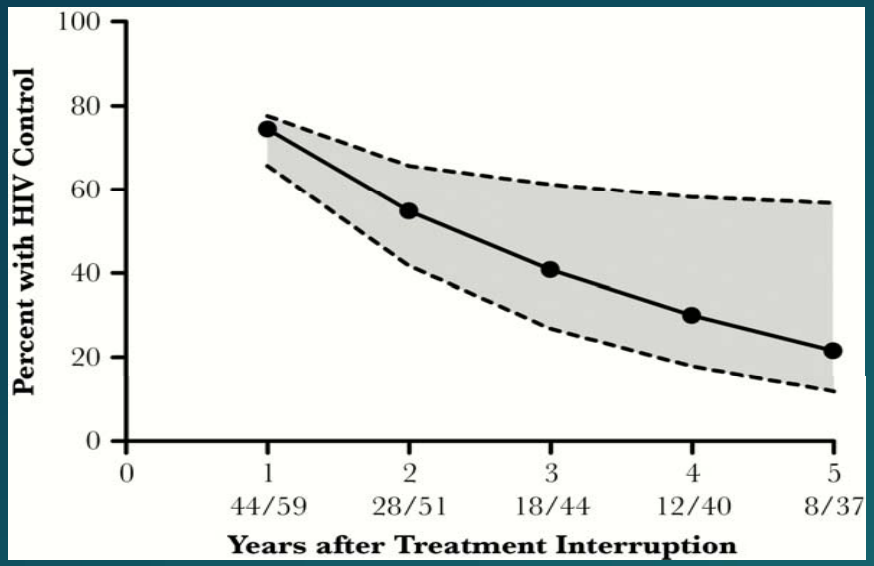
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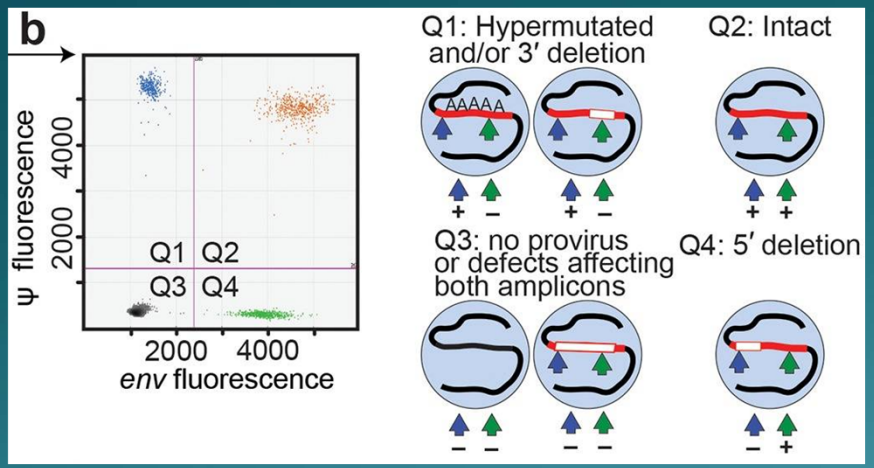
Disclosure: None



Background

1. Post-treatment controllers: People with HIV who maintain viral suppression during analytical treatment interruption (ATI)
2. Hypothesis: PTCs and non-controllers (NCs) have different HIV reservoir dynamics during ATI
3. HIV reservoir: Only a small portion of integrated HIV DNA is intact and inducible
4. Intact proviral DNA assay (IPDA): a droplet-PCR based test to quantify intact HIV DNA in a high-throughput fashion

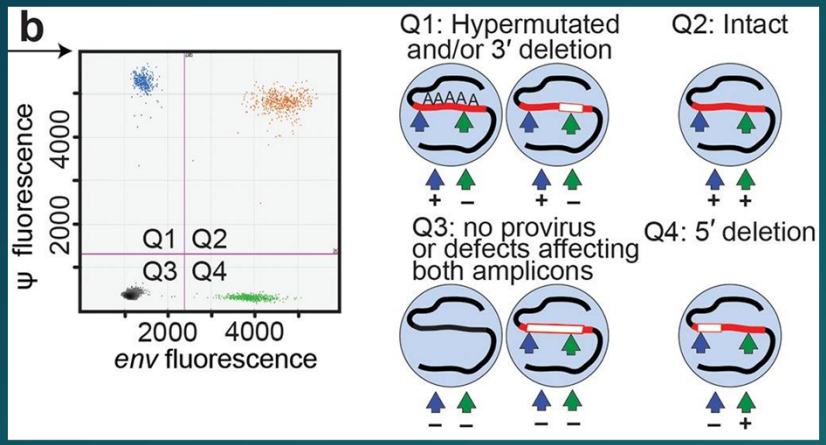


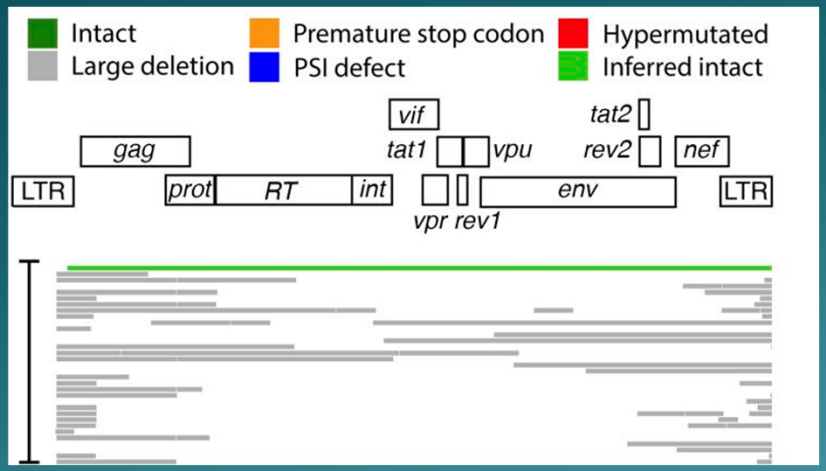


Namazi et al., JID 2018
Bruner and Wang et al., Nature, 2019

Methods

1. The Control of HIV After Antiretroviral Medication Pause (CHAMP)
2. PTC: Off antiretroviral therapy (ART) for ≥24 weeks with post-ATI viral loads ≤400 copies/mL for at least 2/3 of the time points
3. Inclusion criteria:
   (1) Suppressed HIV viral load before ATI
   (2) IPDA data available before ATI
4. IPDA: Conducted by Accelevir Diagnostics.
5. Near full length sequencing (NFL-seq): Performed on a subset of participants (n=8)
6. A panel of proinflammatory markers (n=27)
7. Statistics: Wilcoxon with Benjamini-Hochberg correction for P values

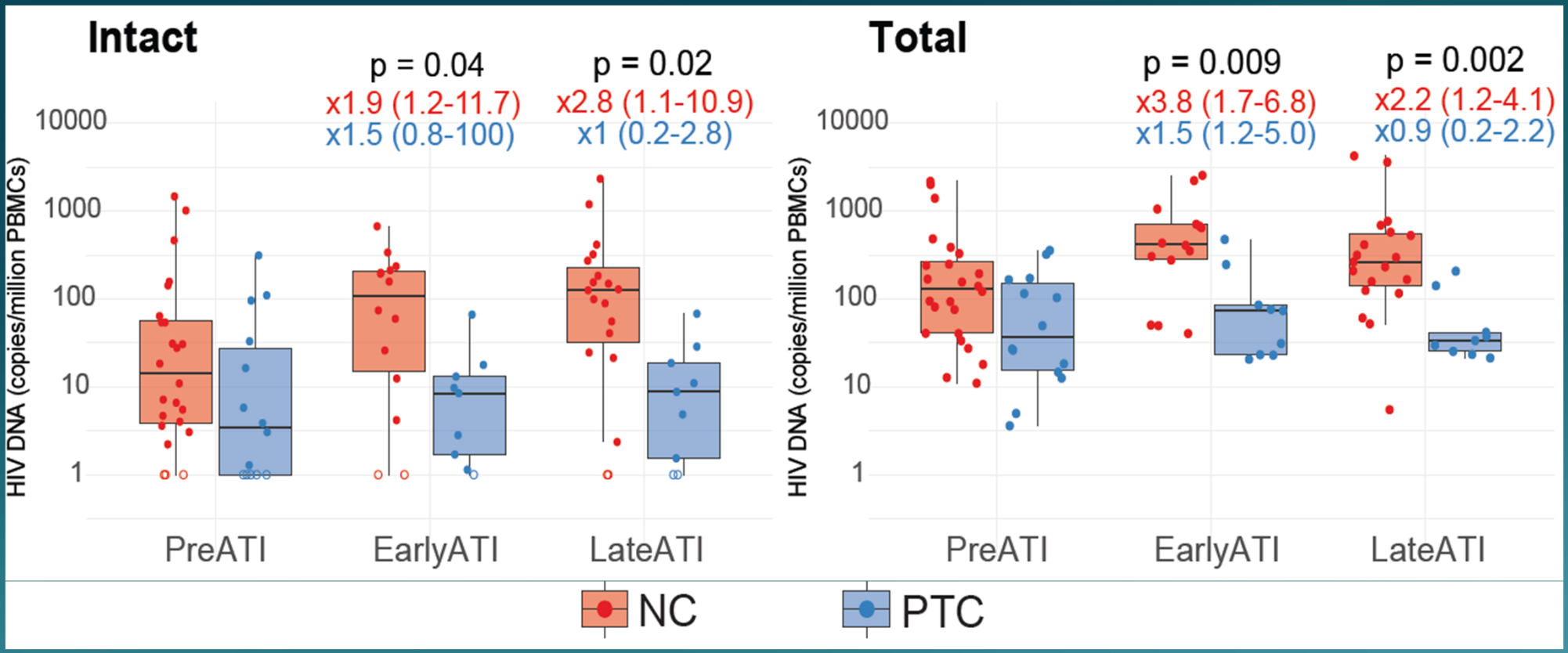




Namazi et al., JID 2018
Bruner and Wang et al., Nature, 2019
Sharaf et al., JCI 2018

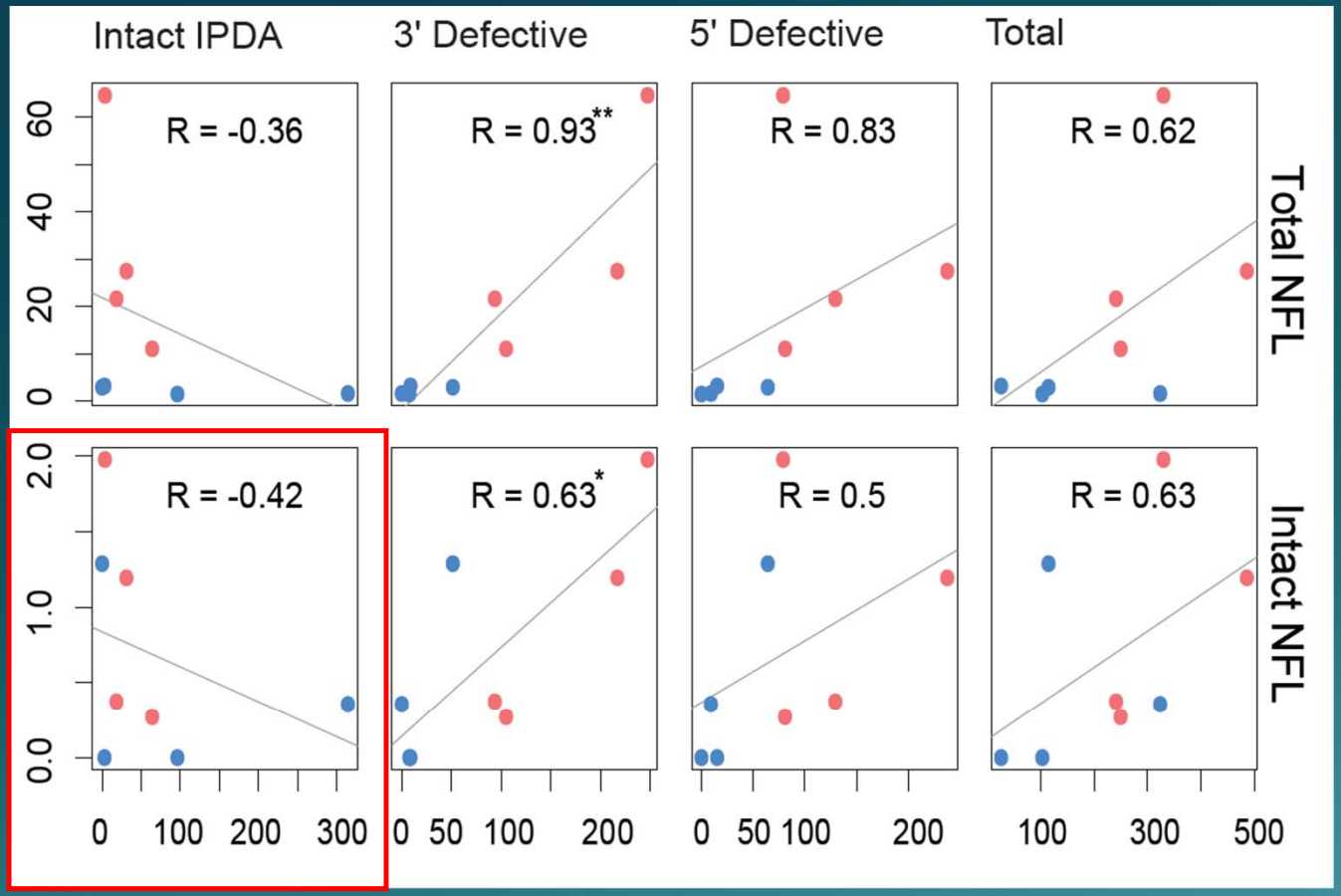
Results

- 14 PTCs and 24 NCs were included. A median age of 41 years' old, 14% female, and 28% non-Caucasian.
- Fold changes (compared to PreATI) with 95% confidence intervals were labeled.



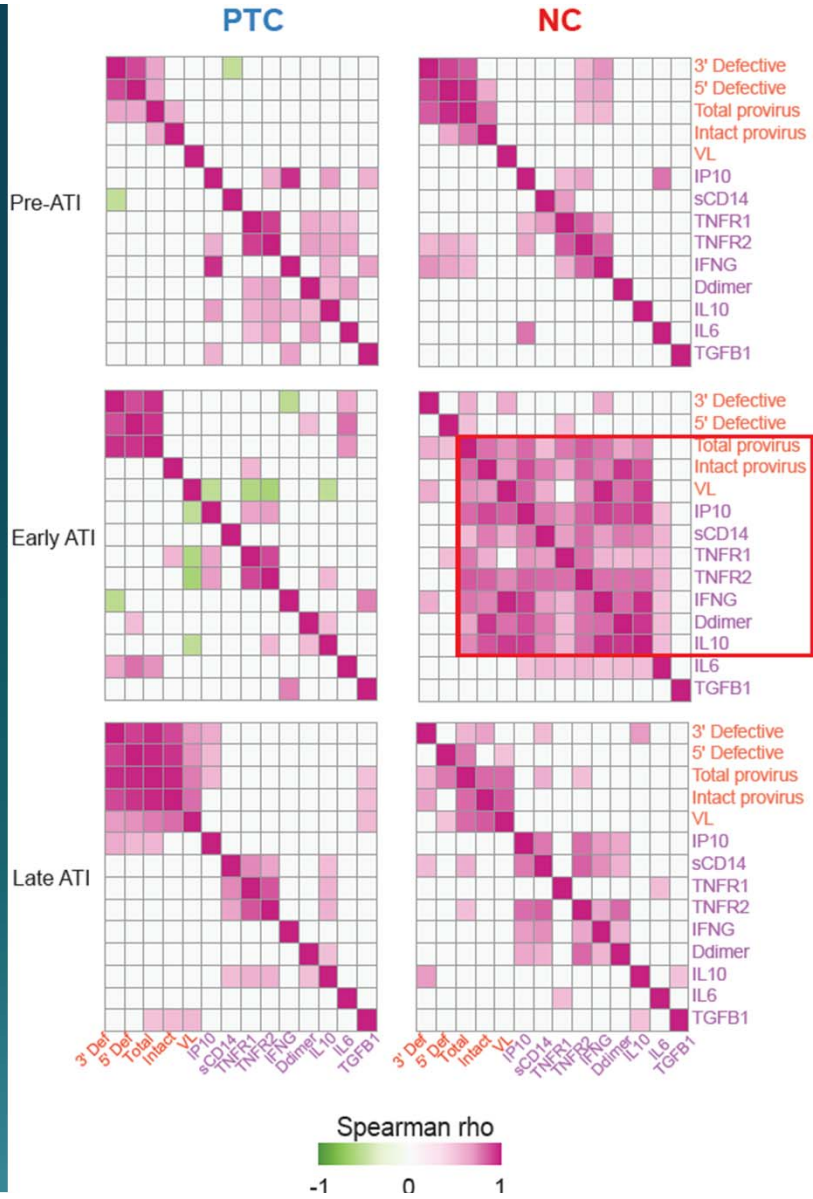
Results

- Correlation between NFL-Seq HIV DNA levels and IPDA HIV DNA levels.
- Compared to NFL-seq, IPDA reported a median 40-fold higher levels of intact and 20-fold higher levels of total proviral DNA.



Results

In a subset of participants with plasma cytokine results (n=27), intact and total proviral level was highly correlated to most proinflammatory cytokines only during early ATI in NCs (only correlations with Spearman rho>0.5 or <-0.5 are shown)



Conclusions

1. PTCs have stable intact and total proviral HIV levels during ATI.

2. NCs have higher intact and total proviral HIV levels during ATI in comparison with PTCs

3. Compared to NFL-seq, IPDA reported a median 40-fold higher levels of intact and 20-fold higher levels of total proviral DNA.

4. In comparison to PTCs, NCs have elevated total and intact proviral levels that are highly correlated to proinflammatory markers during early ATI.

Acknowledgement

1. This study would be impossible without our participants in the ACTG and OPTIONS studies. We are also grateful to all the trial staff members.
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