

11TH EDITION

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HIV PERSISTENCE DURING THERAPY

Reservoirs & Eradication Strategies Workshop



Increased HIV-1 Proviral Reactivation and Reservoir Size in People With HIV on Anticancer Treatment

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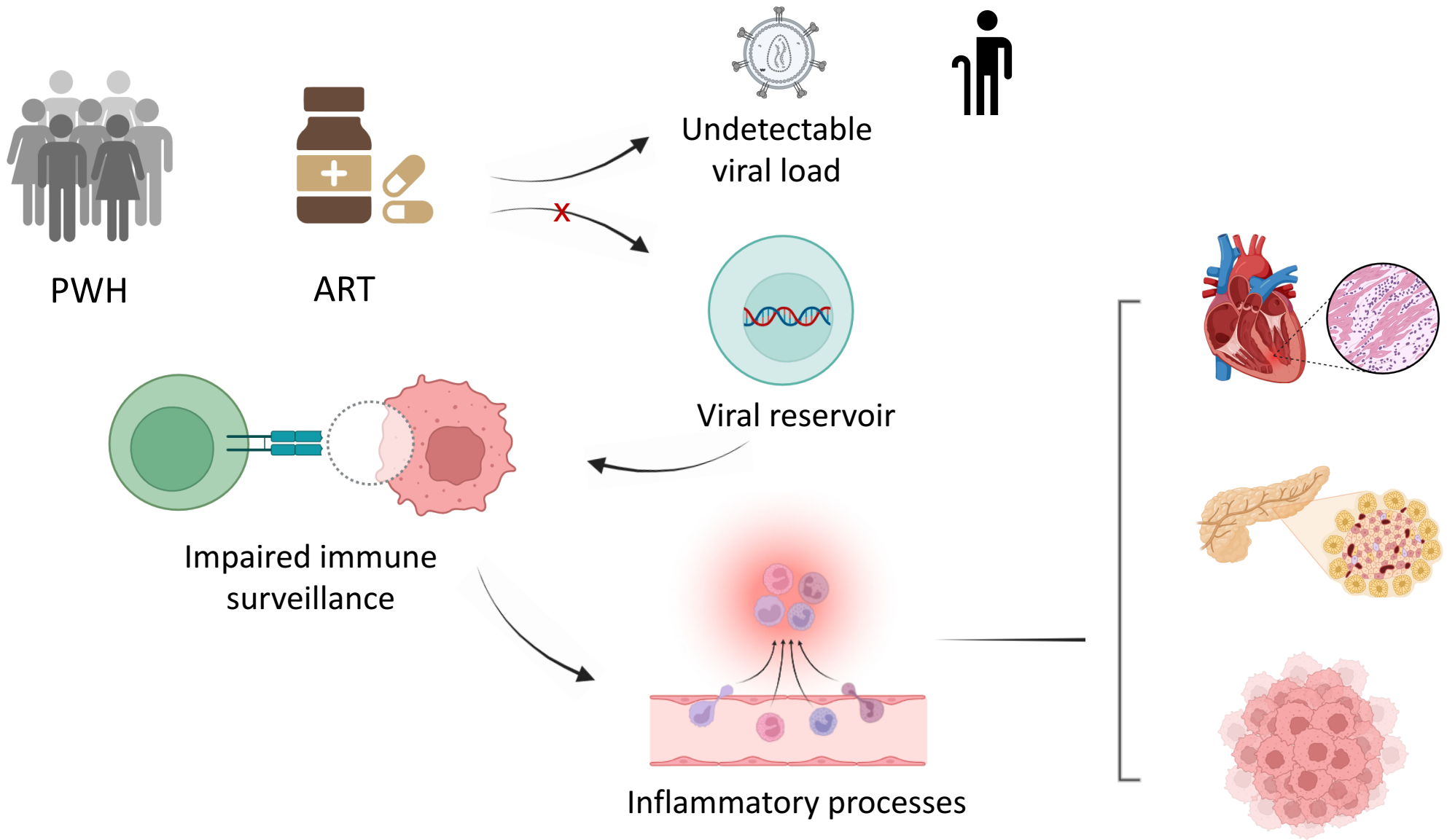
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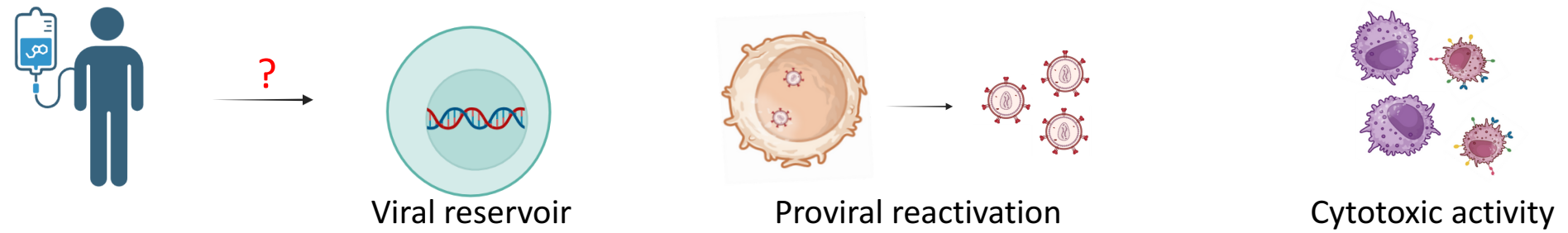
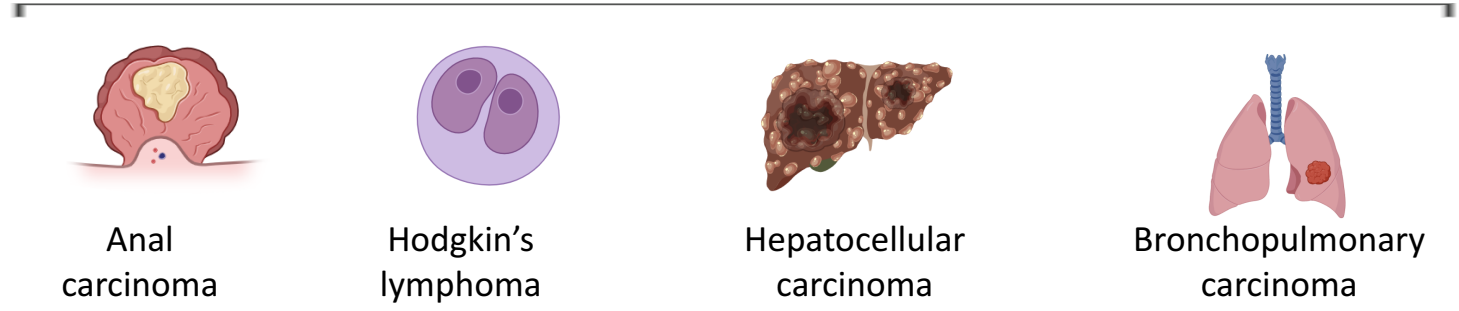
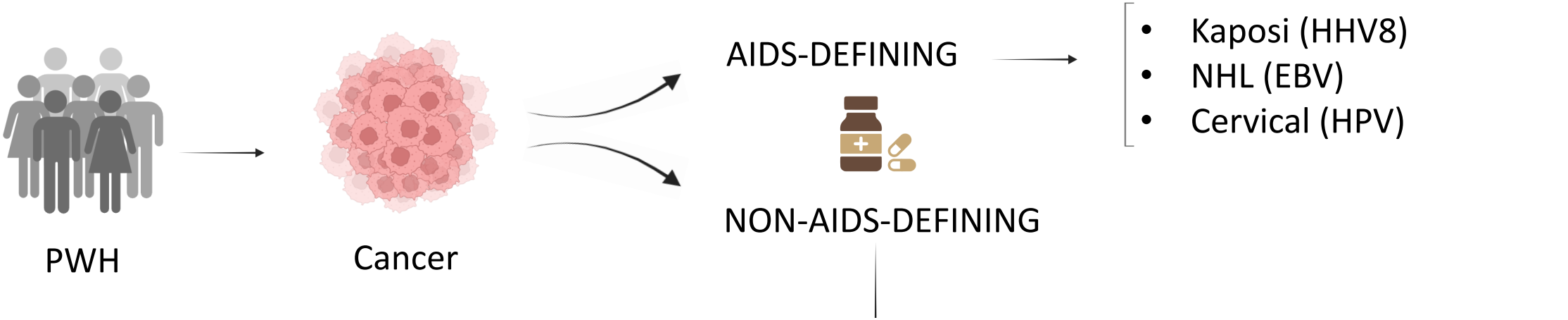
CONFLICTS OF INTEREST

We have no conflicts of interest to disclose

BACKGROUND



BACKGROUND



OBJECTIVES

To evaluate the impact of anticancer treatment in HIV-1 reservoir size and its capacity of reactivation in people with HIV and cancer

STUDY DESIGN

Longitudinal, prospective study, 12 months of follow-up

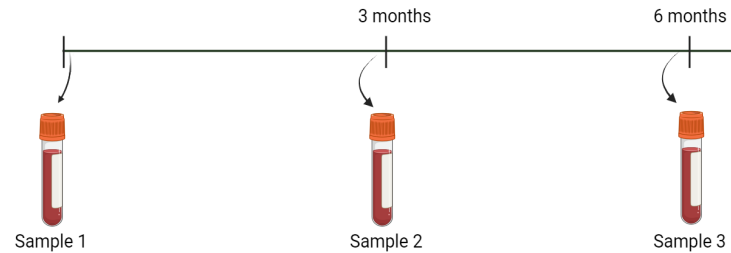


PWHC
n=11

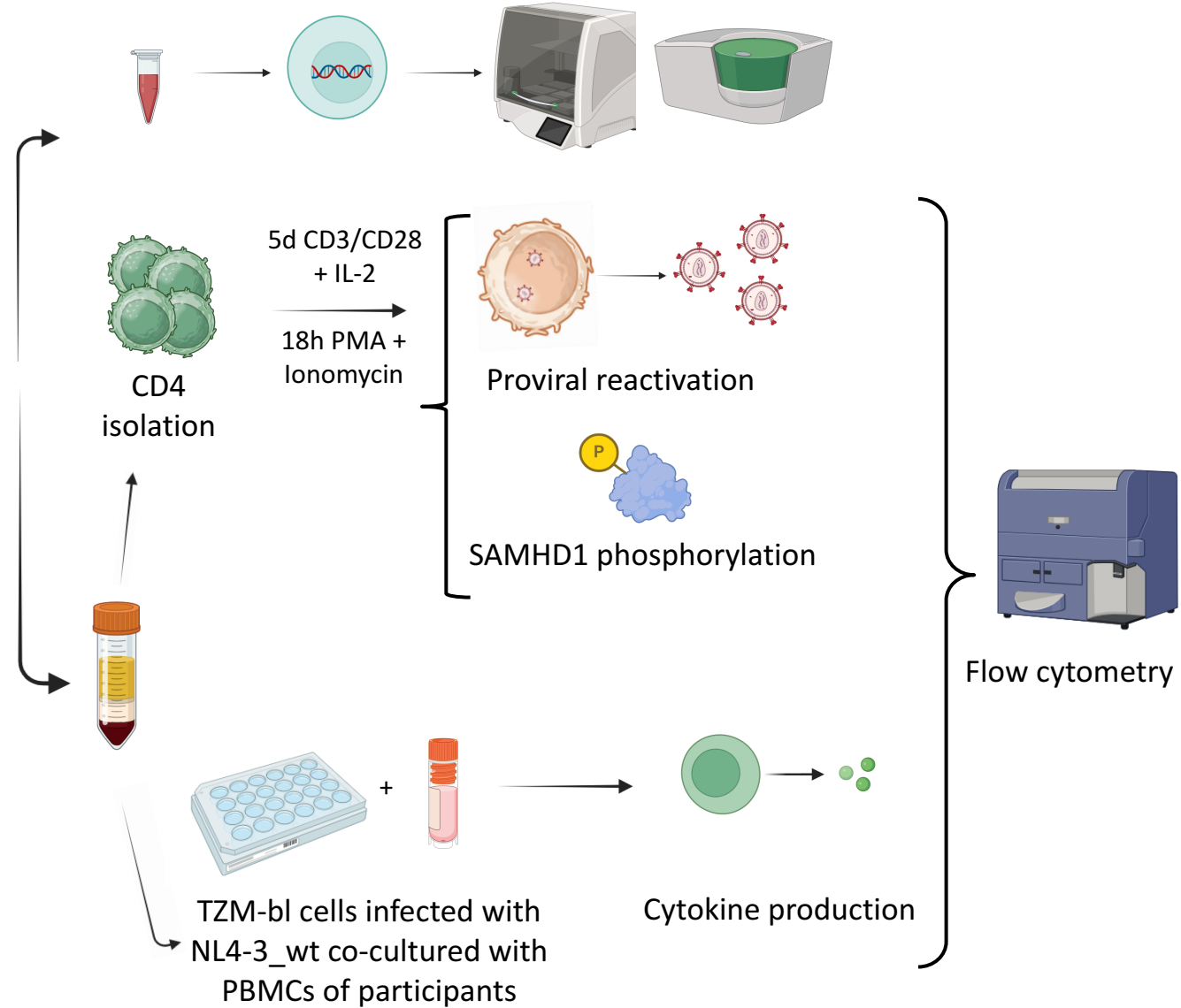


PWH
n=10

Start anticancer treatment



12 months follow-up is still going on



CLINICAL DATA

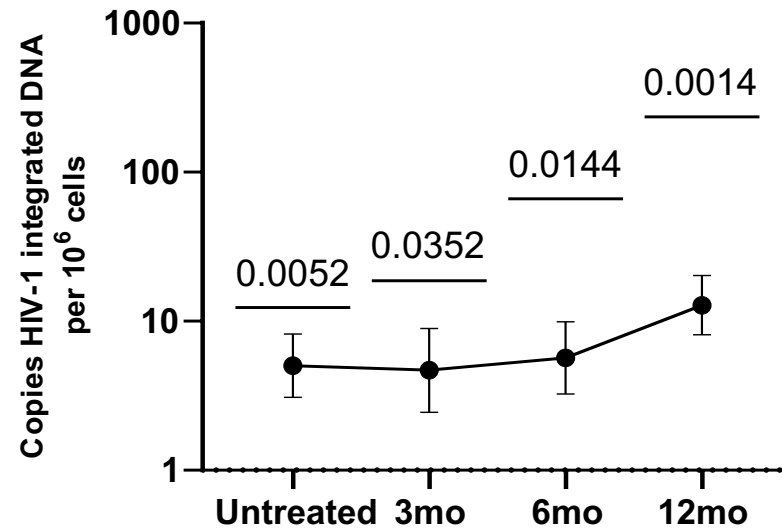
Table 1. Participant demographic and baseline characteristics	PWHC			PWH		
	N/median	IQR	%	N/median	IQR	%
MEN (N)	9		82%	8		80%
WOMEN (N)	2		18%	2		20%
AGE, years (Median)	63.6	62.9-68.1	-	58.4	46.1-66.5	-
AGE AT DIAGNOSIS, years (Median)	31.0	29.5-42.5	-	28.5	25.5-34.3	-
TIME OF HIV-INFECTION (median)	32.0	24.5-34.5	-	30.0	20.8-33.8	-
CD4/CD8 RATIO (Median)	0.8	0.6-1.1	-	1.0	0.8-1.4	-
NADIR CD4 (Median)	123.5	62.8-212	-	274.0	235-446	-
CD4 COUNT (Median)	656.0	418.6-739.5	-	786.0	594.5-1149.8	-
CD8 COUNT (Median)	669.5	343-1060.3	-	876.5	553.5-967	-
Viral load	Indetectable	-	-	Indetectable	-	-

CLINICAL DATA

Table 2. Treatment characteristics of the participants		PWHC		PWH	
		N	%	N	%
ANTIRRETROVIRAL TREATMENT					
	2 NRTI + 1 PI	1	9%	1	10%
	2 NRTI + 1 INSTI	5	45%	4	40%
	2 NRTI + 1 NNRTI	2	18%	0	0%
	1 NNRTI + 1 INSTI	0	0%	2	20%
	1 NRTI + 1 INSTI	2	18%	2	20%
	1 INSTI	1	9%	0	0%
	1 PI	0	0%	1	10%
TYPE OF CANCER					
	HODGKIN LYMPHOMA	3	27%	-	-
	CARCINOMA	4	36%	-	-
	OTHERS	4	36%	-	-
ANTICANCER TREATMENT					
	IMMUNOMODULATORY	1	9%	-	-
	CHEMOTHERAPY	8	73%	-	-
	BOTH	2	18%	-	-

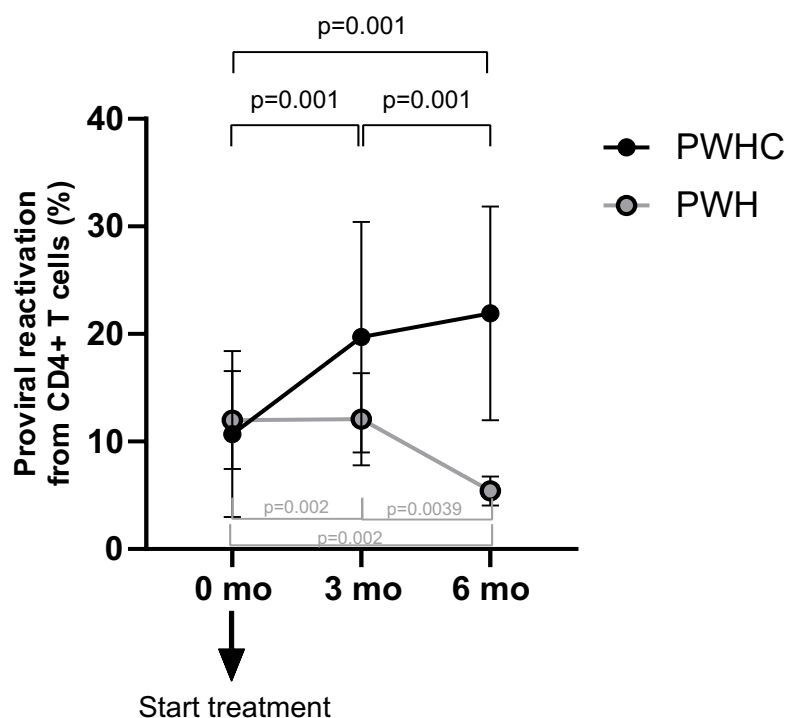
RESULTS: Reservoir size

1. HIV-1 reservoir size increased 1.7 fold in PWHC twelve months after starting anticancer therapy.

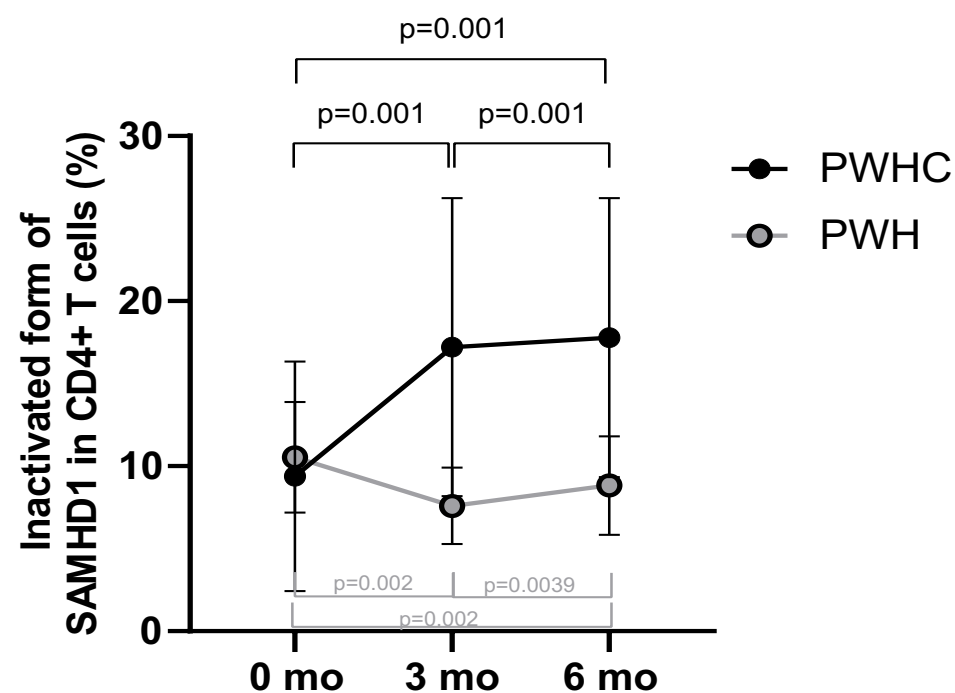


RESULTS: Proviral reactivation

2. Capacity for proviral reactivation (p24) was higher in CD4 from PWHC compared with PWH in the absence of detectable viremia.

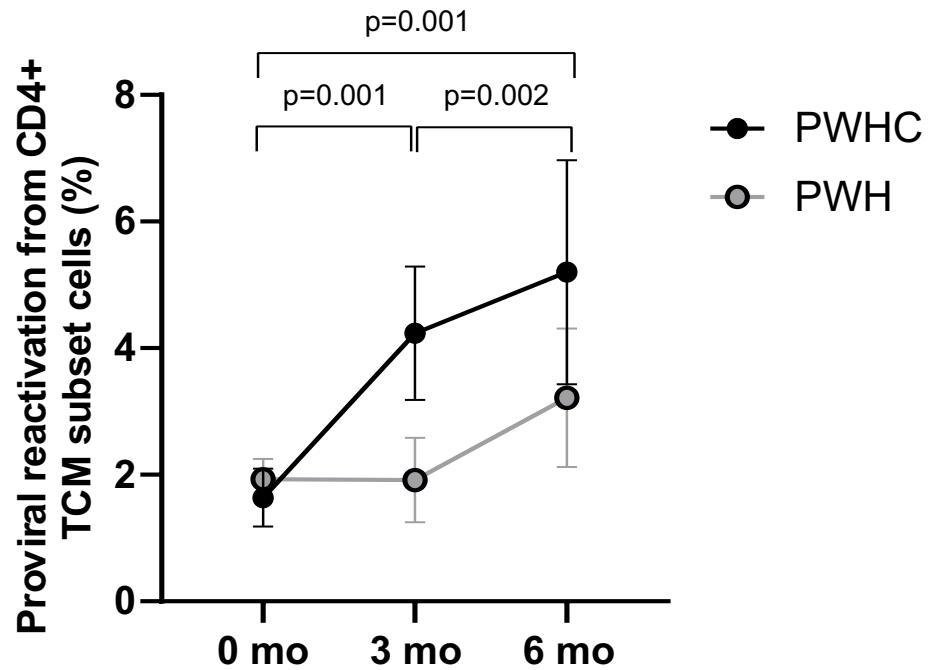


3. There was an increase in SAMHD1 phosphorylation in CD4 from PWHC.



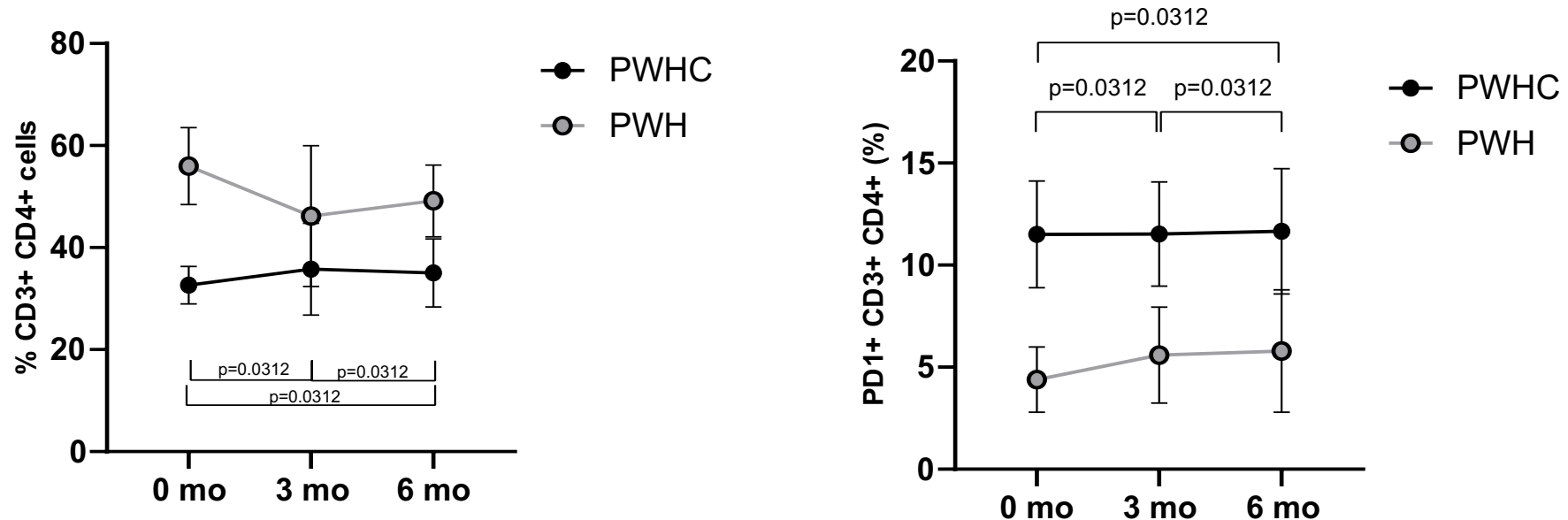
RESULTS: Proviral reactivation

4. Higher capacity for proviral reactivation was observed in CD4+ TCM cell subset from PWHC.



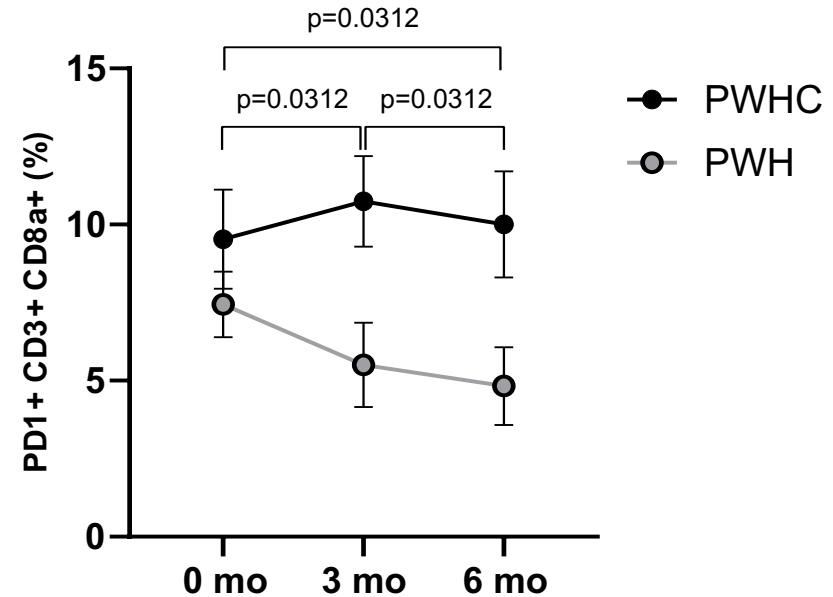
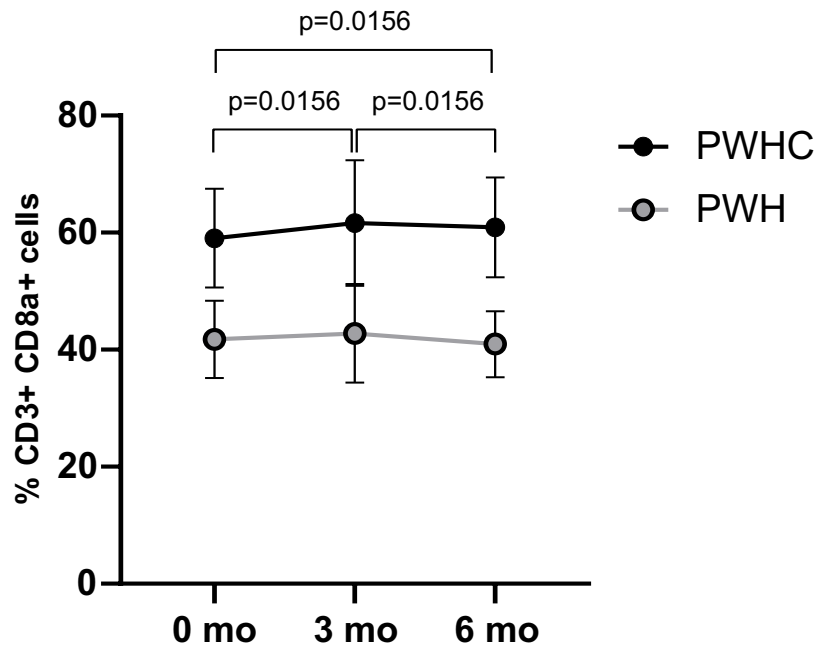
RESULTS: T cell exhaustion

5. PWHC showed lower levels of total CD4+ T cells with a higher expression of PD-1 in comparison with PWH



RESULTS: T cell exhaustion

6. PWHC showed higher levels of total CD8+ T cells with a higher expression of PD-1 in comparison with PWH



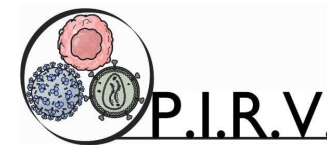
CONCLUSIONS

- Anticancer therapy in PWHC induced a higher capacity for proviral reactivation in peripheral blood CD4+ T cells, mostly in TCM subset.
- This increase in proviral reactivation was related to an increased phosphorylation of antiviral factor SAMHD1.
- A decrease in CD4+ T cell levels and an increase in CD8+ T cell levels with exhaustion markers was observed in PWHC.
- In the absence of detectable viremia, a significant increase in HIV reservoir was observed in PWHC 12 months after starting anticancer treatment.
- More participants are being recruited to distinguish between the effect of chemotherapy and immunomodulatory treatment on the reactivation capacity of the viral reservoir and inactivation of SAMHD1.
- Further studies are needed to determine the clinical impact of anticancer therapy on the HIV-1 reservoir in PWHC.

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To all
participants in
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pirv_isciii



Equipo de patogenia inmune
y reservorio viral



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Instituto de Salud Carlos III



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