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## Introduction

PAH onset is not related with CD4+T-cell level nor HIV viral load. Moreover PAH risk persists despite the control of HIV infection with combined antiretroviral therapy (cART) (i.e.: viral load < detection limit and CD4+T-cell >500 c/mL) (Degano AIDS 2009, Sitbon AJRCCM 2008)

PAH is also known to be associated with inflammatory conditions (Tcherakian Sem Resp and Critical Care 2013)

Hence we decided to study if PAH onset in HIV-infection is associated with persistent immune activation

## Methods

### To confirm our hypothesis:

We delineate 3 groups: a HIV group with PAH (PAH-HIV, n=8), a HIV group without PAH (HIV, n=8) and a healthy group (HD, n=8).

PAH was defined as mPAP >25 mmHg at rest with PVR >3 UIW

PAH was excluded on HIV group using cardiac echography with  $V_{IT} < 2.5 \text{ m.s}^{-1}$

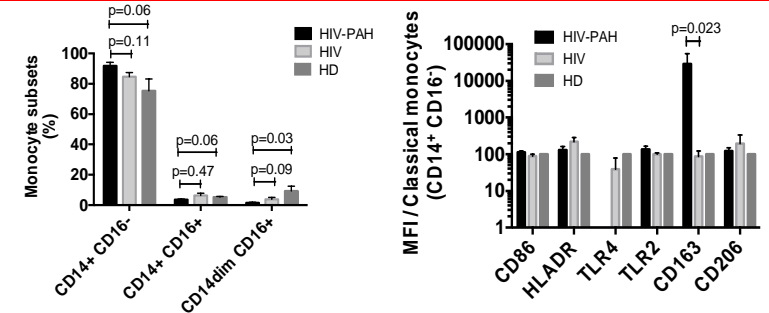
	HIV-PAH	HIV	HD	p
Absolute value (percentage) or mean ± SD, otherwise notified	n=8	n=8	n=8	
Male/Female	6/2	7/1	6/2	
Age (years)	52.4 ± 9.4	52.5 ± 5.4	52.5 ± 4.8	0.99
Smoking history	4	6	NA	
Pack-Year	27 ± 19	39 ± 16		0.21
Route of infection HS/MSM/IVDU	3/2/3	5/1/3		1
Time since HIV infection, Years	19.1 ± 7.3	19.2 ± 9.3		0.96
Time on ART, Years	13.8 ± 5.4	14.1 ± 7.3		0.91
T CD4 lymphocytes nadir	144 ± 124	203 ± 129		0.23
History of HCV coinfection	5 (62%)	3 (23%)		0.62
History of HBV coinfection	1 (9%)	1 (9%)		1

## Hemodynamic and common immune parameters

Hemodynamic and common immune parameters at inclusion	HIV-PAH	HIV	p
Absolute value (percentage) or mean ± SD, otherwise notified	n=8	n=8	
Time between PAH diagnosis and inclusion, median [min-max], Years	7.5 [1-17]		
Functional Class NYHA, I/II/III/IV	2/2/3/1		
sPAP on echocardiography, mmHg	53 ± 25	21 ± 2	<0.0001
mPAP on Right Heart Catheterization, mmHg	32 ± 15		
CRP (mg/mL)	3.3 ± 5.6	2.6 ± 2.4	0.27
Lymphocytes T-CD4+, cell/μL	446 ± 231	631 ± 220	0.12
Lymphocytes T-CD8+ (cell/μL)	732 ± 537	969 ± 482	0.37
CD4/CD8 Ratio	1.1 ± 1.0	0.8 ± 0.4	0.93
VL > 40 copies/mL, number of patients	2 (25%)	1 (12.5%)	
VL in viraemic patients (copies/mL)	14 600 and 713	585	

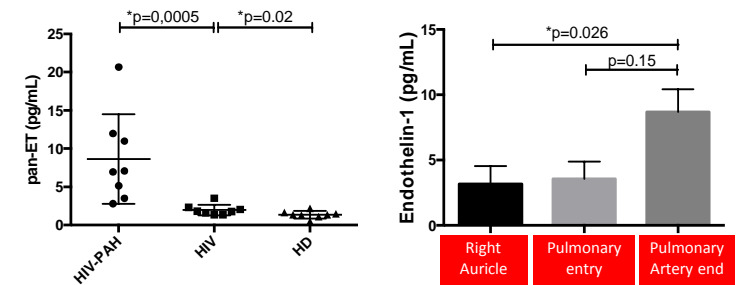
## Results

### Modification in monocytes subtypes and increase of CD163+inflammatory monocytes



### Endothelin is a key vasoconstrictor involved in PAH pathogenesis

### Endothelin is increased in PAH-HIV | Endothelin is produced along pulmonary artery



### We showed that PAH-HIV condition is associated with :

- A persistent immune activation
- An increase of intrapulmonary production of Endothelin

This inflammation appears not to be related to the level of LT-CD4+, CD8+ or CD4/CD8 ratio

## immune parameters

