

Risk of non-AIDS-defining events amongst HIV-infected patients not yet on antiretroviral therapy

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Background

- Certain non-AIDS-defining illnesses in HIV-infected patients on combination antiretroviral therapy (cART) have been associated with low CD4 cell counts and high HIV RNA levels.
- We aimed to further investigate these associations in patients not yet on cART when potential antiretroviral drug-related toxicities are absent and there is more variation in RNA levels.

Methods

Patient population

- 13,077 patients from the ATHENA national observational HIV cohort who were
 - diagnosed with HIV-1 ≥ 1998 .
 - not yet treated with cART.

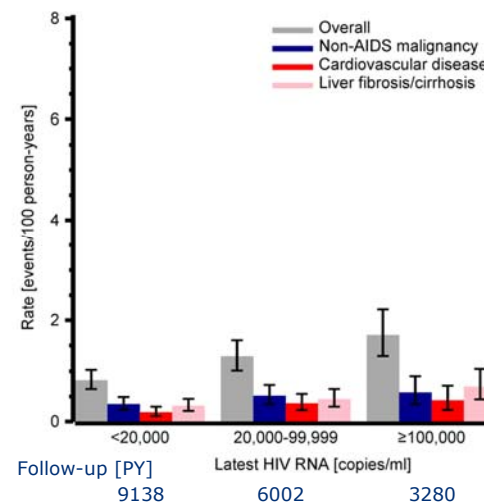
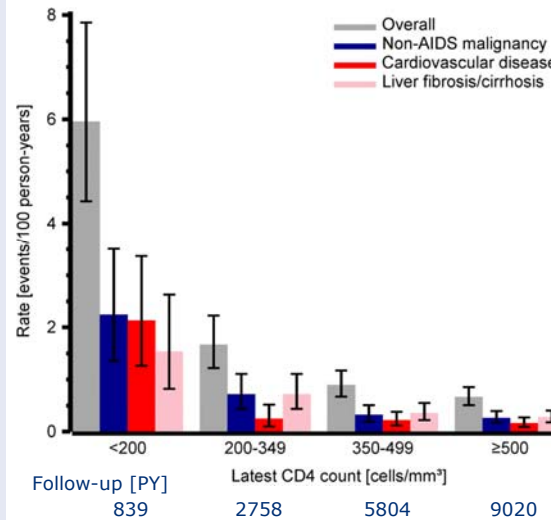
Analysis

- Poisson regression model for the association between time-updated CD4 counts and HIV RNA and a composite non-AIDS endpoint.
- Composite endpoint included:
 - major cardiovascular disease: myocardial infarction, stroke, invasive coronary procedures.
 - liver fibrosis/cirrhosis.
 - non-AIDS malignancies.

- Non-AIDS events were considered from the time of the first CD4 count onwards.

- Patients were followed until start of treatment or last follow-up visit.

Figure 1: Incidence of non-AIDS-defining events across categories of latest CD4 count and HIV RNA in HIV-infected patients not yet on antiretroviral treatment. Error bars indicate 95% confidence intervals. PY: person-years.



Results

- 18,641 person-years of follow-up.
- 208 (1.6%) patients with one or more non-AIDS events; 5 patients had ≥ 2 events:
 - 53 cardiovascular disease.
 - 79 liver fibrosis/cirrhosis.
 - 82 non-AIDS malignancies.

Table 1: Association between latest CD4 count and HIV RNA and the composite non-AIDS endpoint. Multivariate analyses were adjusted for demography, history of smoking, alcohol use, CDC stage, hepatitis B and C co-infection, diabetes, and hypertension. RR: relative risk; CI: confidence interval; ref: reference.

	Univariate		Multivariate	
	RR	95% CI	RR	95% CI
CD4 [cells/mm³]				
<200	8.96	6.15-13.0	4.36	2.83-6.73
200-349	2.51	1.71-3.68	2.13	1.45-3.14
350-499	1.35	0.93-1.95	1.23	0.85-1.78
≥ 500	ref		ref	
HIV RNA [copies/ml]				
<20,000	0.48	0.34-0.68	1.13	0.77-1.66
20,000-99,999	0.75	0.53-1.06	1.34	0.93-1.93
$\geq 100,000$	ref		ref	

Conclusions

- In persons not yet receiving cART, a more severe degree of immunodeficiency rather than HIV RNA appears to be associated with an overall risk of our composite non-AIDS event endpoint.
- Larger studies will be needed to address these associations for each individual non-AIDS disease event.

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