

# Episodes of HIV viremia and the risk of non-AIDS events among successfully treated patients

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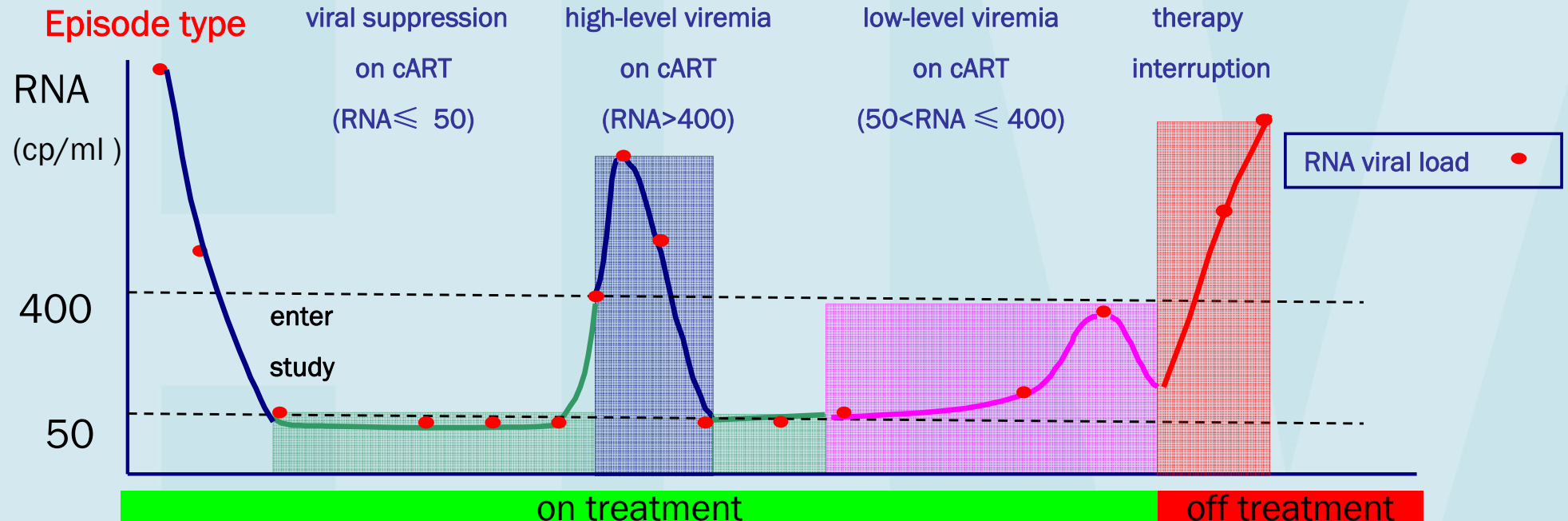
# Background and Aim

- Mortality rate has decreased and life expectancy has improved significantly with cART.
- With prolonged survival, mortality is increasingly likely due to non-AIDS causes.
- The occurrence of non-AIDS events appears to be related to the level of immunodeficiency.
- Aim: to investigate the effect of **episodes of viremia (on cART)**, on top of CD4 count, on **non-AIDS events** in successfully treated patients.

# Patient selection and endpoint definition

- 6440 patients were selected from the ATHENA cohort, if
  - therapy-naïve
  - treated successfully : RNA  $\leq$  50 cp/ml before 48w of cART
  - no non-AIDS events diagnosed before
  - censored at one year with long interruption
- four non-AIDS endpoints (fatal and non-fatal) were considered:
  - cardiovascular disease (102 events)  
myocardial infarction, stroke, invasive coronary procedures
  - renal disease (72 events)  
acute and chronic renal failure
  - liver disease (70 events)  
fibrosis, cirrhosis
  - overall  
combination of non-AIDS events abovementioned

# Episode definition and statistical model

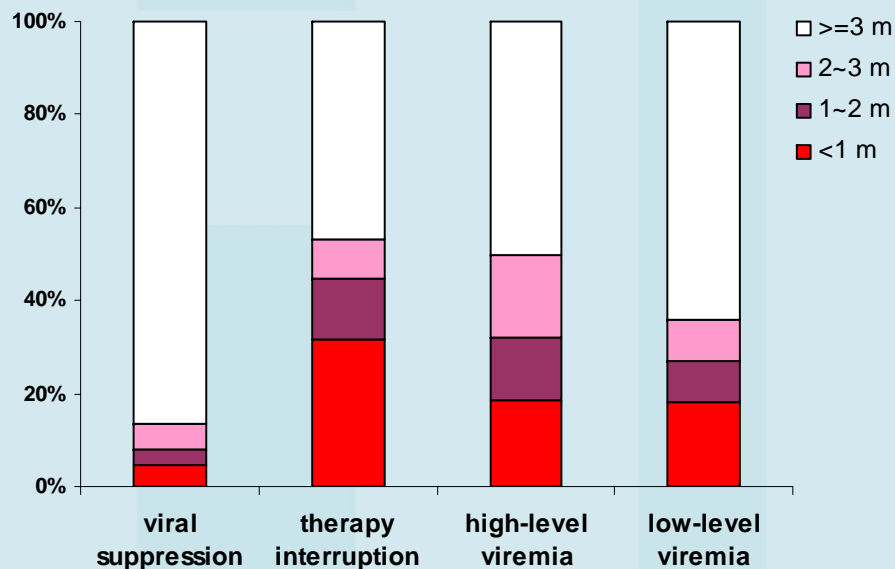


- The effect of **episodes of viremia and CD4**, as time-updated variables, on **non-AIDS events** was studied with time-discrete Cox regression model.
- Both univariate and multivariate analysis were conducted. The latter was adjusted for relevant covariates:
  - demographic (age, gender)
  - clinical (diabetes, HBV/HCV co-infection, CDC Stage)
  - lifestyle (smoking, alcohol abuse)
  - transmission risk group

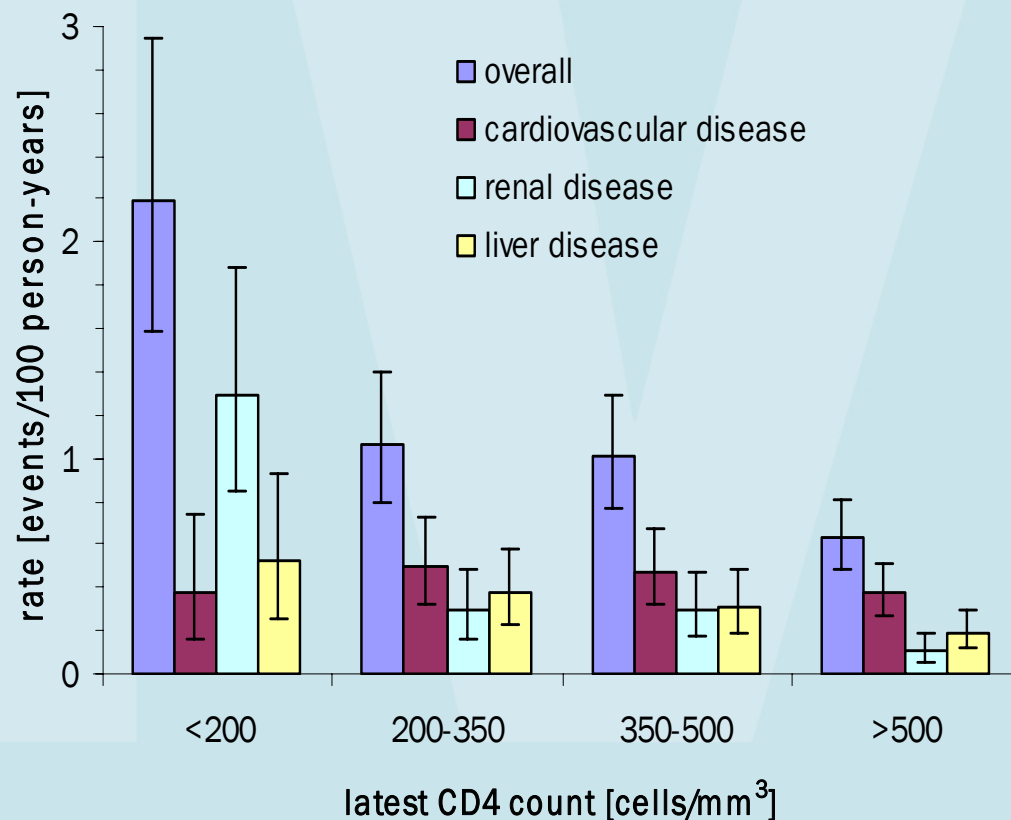
# characteristics of episodes

# non-AIDS rate across CD4 count

duration distribution of 4 types of episodes

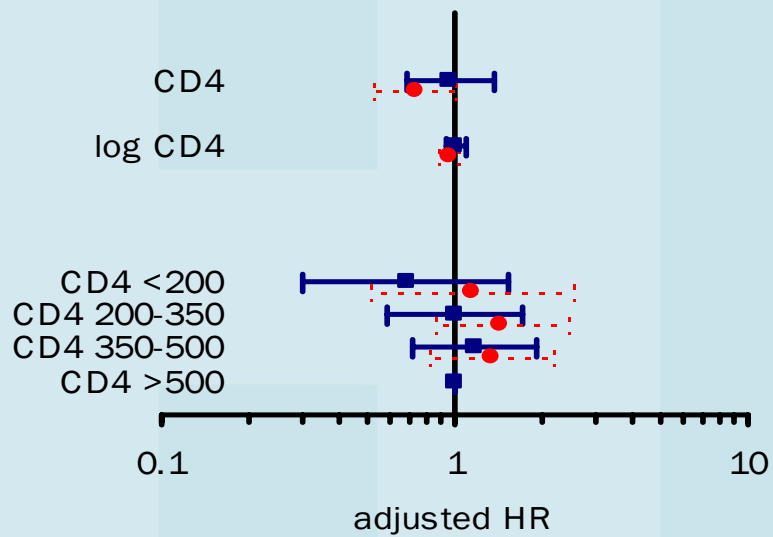


	viral suppression	therapy interruption	high-level viremia	low-level viremia
duration (median)	15.3	2.5	4.3	3.0
<1 m	4.7%	31.7%	18.4%	18.2%
Frequency	10672	1629	3793	1269
	(61.5%)	(9.4%)	(21.8%)	(7.3%)

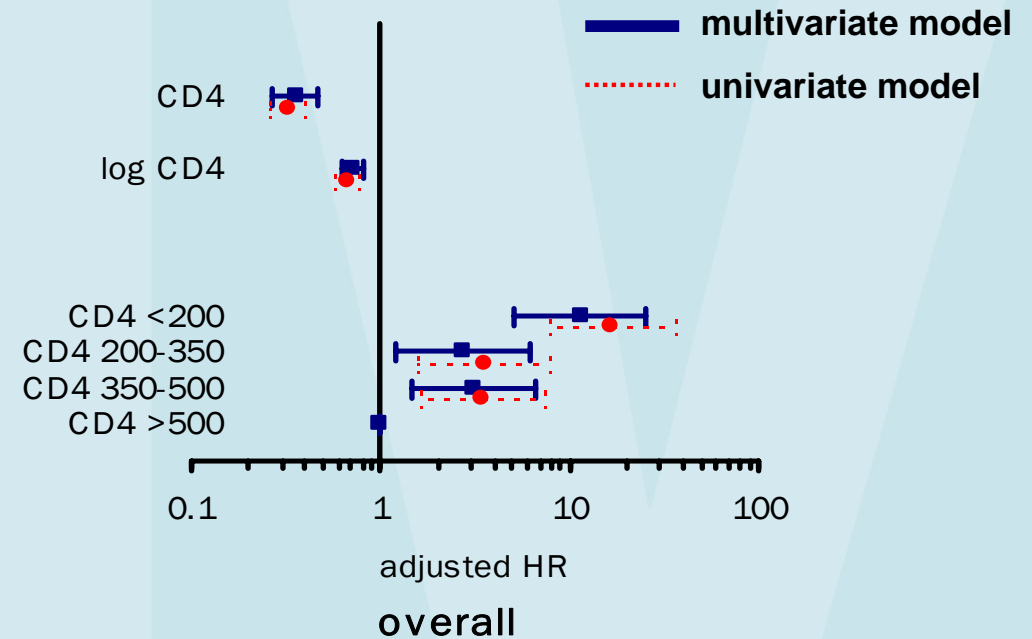


# CD4 and risk of non-AIDS events

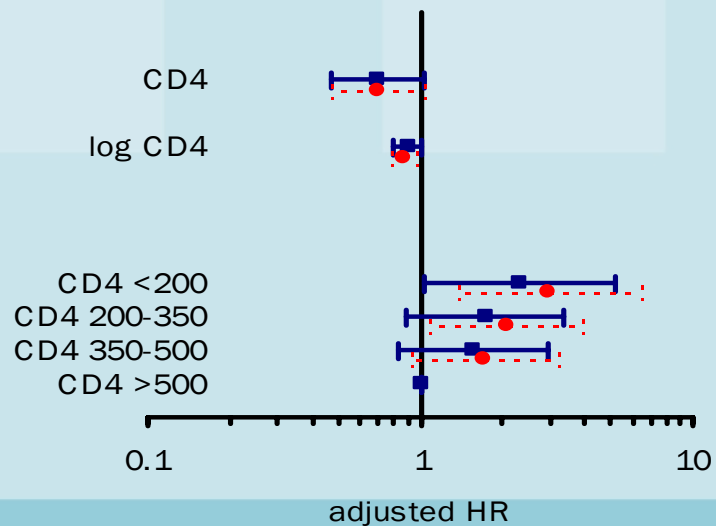
cardiovascular disease



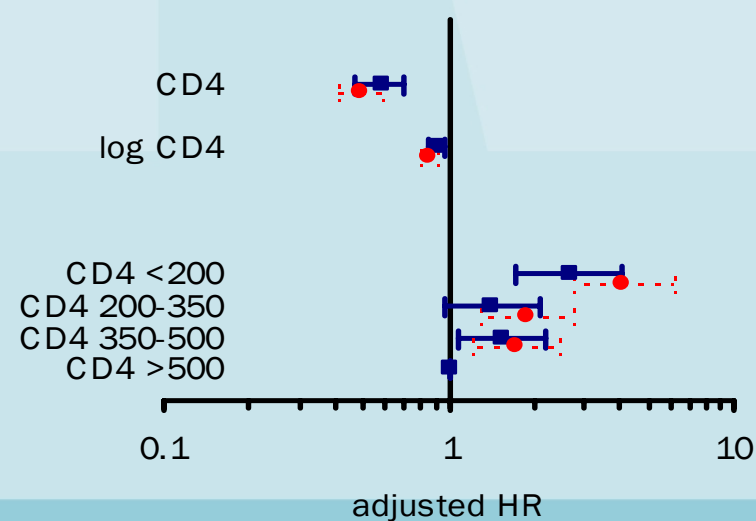
renal disease



liver disease

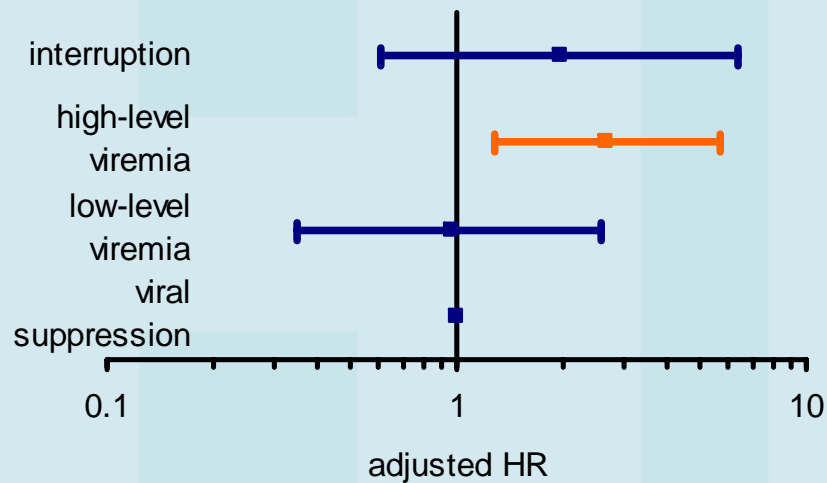


overall

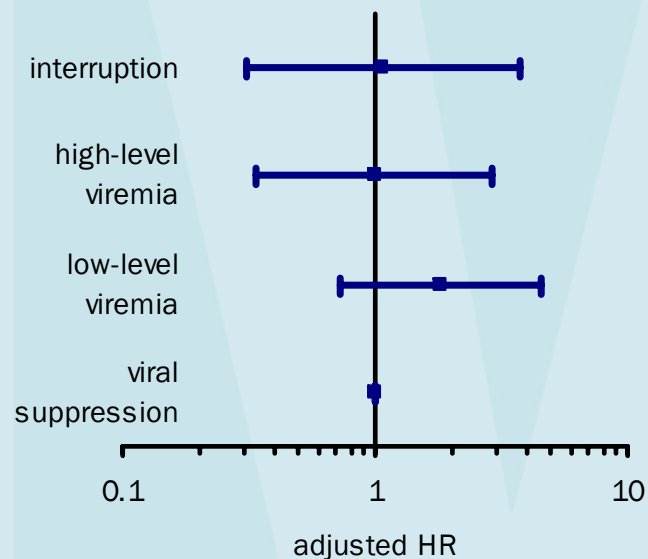


# Viremia and risk of non-AIDS events

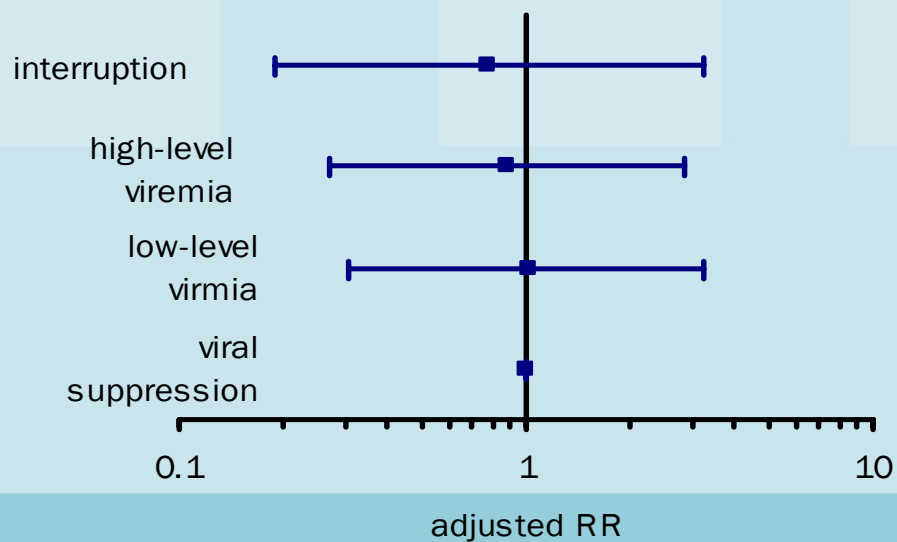
## cardiovascular disease



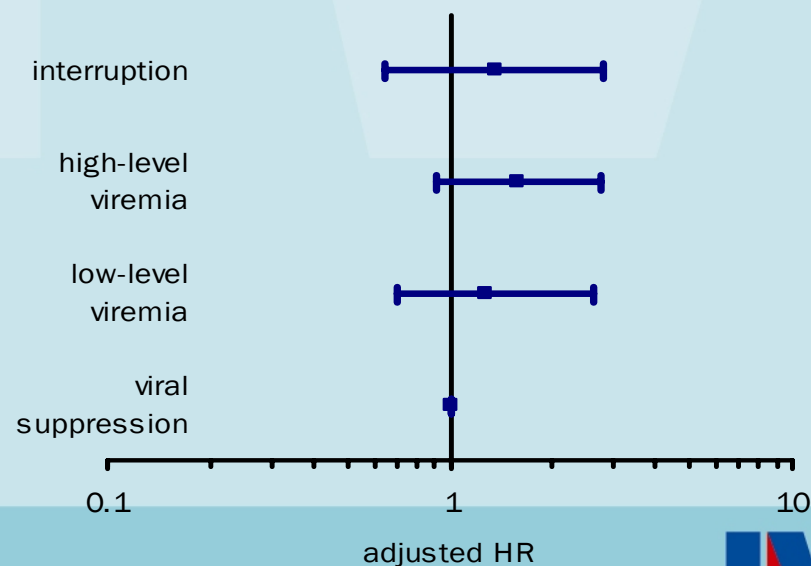
## renal disease



## liver disease



## overall



# Conclusions

- Episodes of high-level viremia were associated with cardiovascular disease.
- Lower CD4 counts were associated with an increased risk of renal and liver disease.
- However, the power to detect an association of viremia may have been small given the limited amount of follow-up time spent in episodes of viremia.
- The extent to which RNA levels affect the risk of non-AIDS events could be investigated further in cohorts of untreated patients.



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