

# HEAVY ARV EXPOSURE, EXHAUSTED/LIMITED ARV OPTIONS: PREDICTORS AND CLINICAL OUTCOMES

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**RESPOND study group, cohort membership and funding :**  
<https://chip.dk/Research/Studies/RESPOND/Study-group>

### Background:

People living with HIV with extensive ARV exposure may have limited/exhausted treatment options (LExTO) due to resistance, drug toxicity or comorbidities but remain poorly characterised.

### Aims:

Predictors and outcomes of LExTO were investigated in RESPOND; a European/Australian observational cohort

### Methods:

People living with HIV on ART for  $\geq 5$  years were classified as LExTO at starting one of

- $\geq 2$  'core' agents + a third ARV from any class
- exactly 2 'core' agents in a 2-drug regimen\*
- $\geq 3$  nucleoside reverse transcriptase inhibitors or ENF ( $\pm$  other ARVs)

ARVs included were RAL, EVG/c, DTG, BIC, CAB, DRV/b, ATV/b, LPV/r, EFV, ETR, NVP, RPV, DOR, ENF, MVC, ABC, 3TC, TDF, TAF, FTC, ZDV

Baseline was defined as the latest of 1/1/2012, cohort enrolment or 5 years after starting ARVs.

Poisson regression modelled LExTO rates/clinical outcomes

Agents included as 'Core'; \*excluding DTG/RPV or CAB/RPV

### Results:

Included: 23,288

Developed LExTO: N (%): 2003 (8.6%)

Person-years follow-up: 118,665

Incidence: 1.7/100 PYFU (95% CI 1.6-1.8)

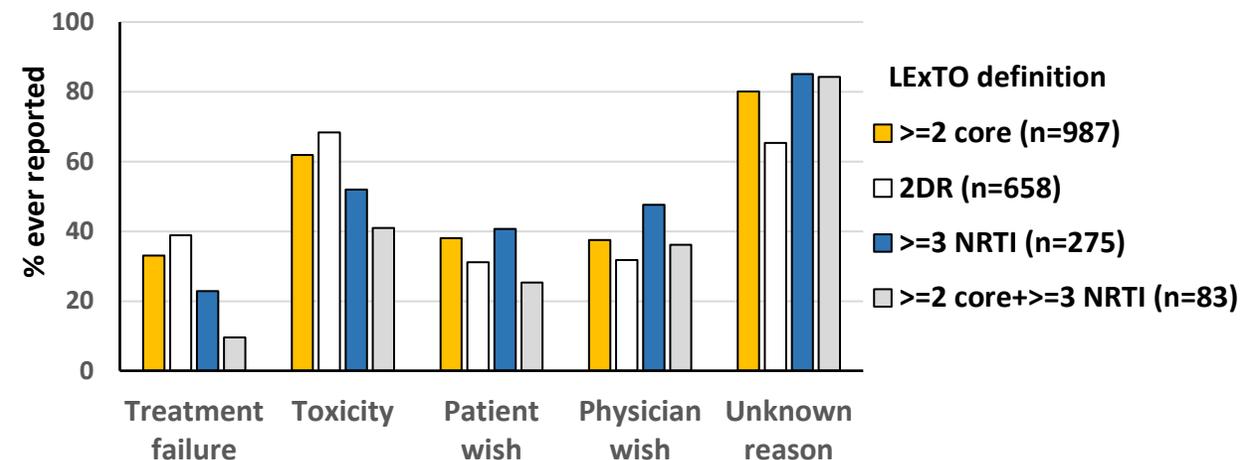
No. ARVs before baseline: median (IQR): 7 (5-9)

Years since starting ART: median (IQR): 14 (9-18)

No. individuals on qualifying LExTO regimen: N (%)

- $\geq 2$  core ARVs: 987 (49.3%)
- 2 DR (exc. DTG/RPV, CAB/RPV): 658 (32.9%)
- $\geq 3$  NRTIs: 275 (13.7%)
- $\geq 2$  core ARVs AND  $\geq 3$  NRTIs: 83 (4.1%)

Summary of reported reason for discontinuation of all ARVs used before LExTO in 2003 persons with LExTO; median 7 (IQR 5-9) ARVs used before LExTO

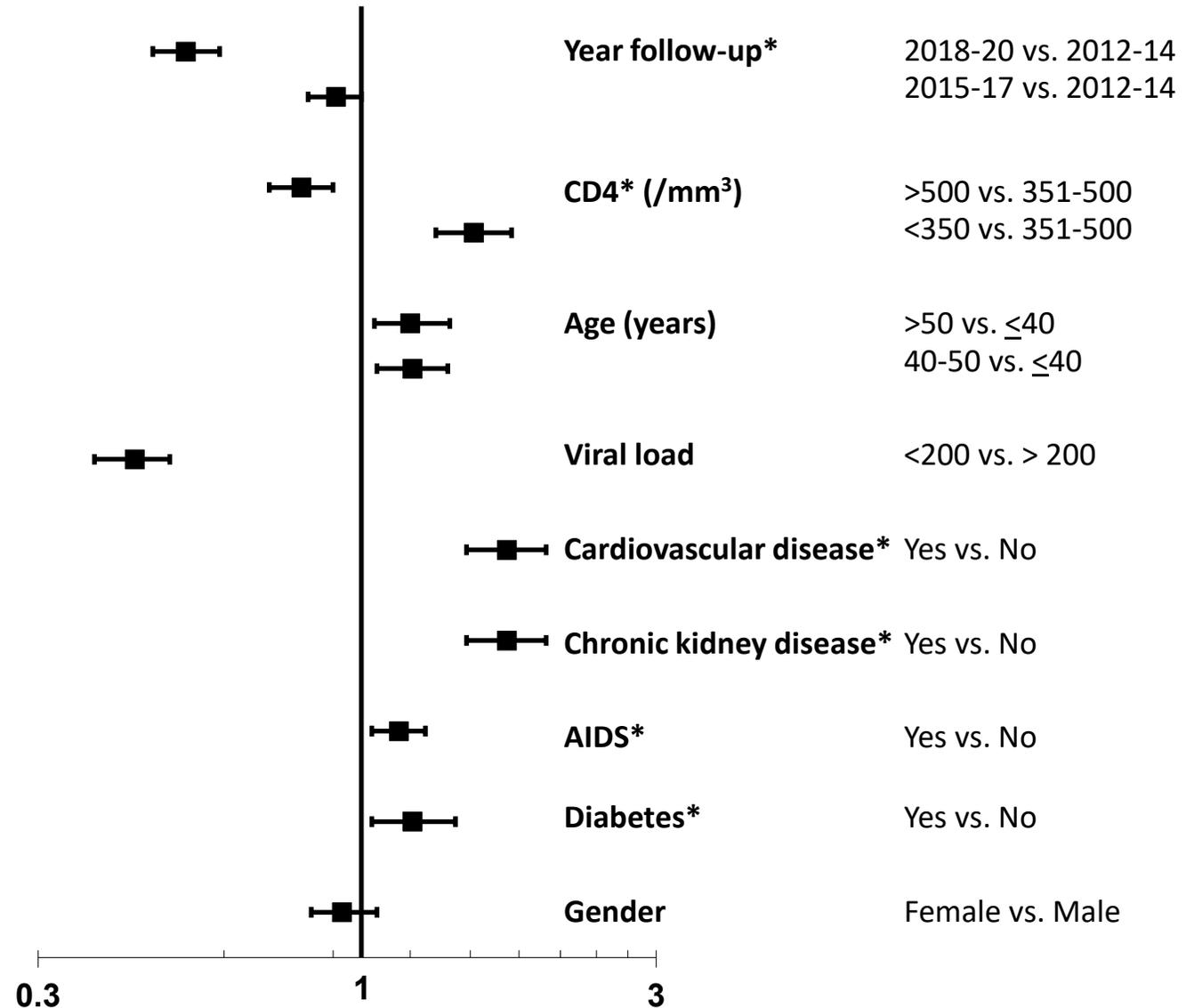


**Results: Demographics at baseline (n=23288):**

	No LExTO	LExTO
All; n (%)	21285 (91.4)	2003 (8.6)
Male	15695 (73.7)	1469 (73.3)
Injecting drug user	2782 (13.1)	302 (15.1)
>15 years HIV+	5201 (24.4)	817 (40.8)
Viral load < 200 copies/ml	20249 (95.1)	1770 (88.4)
Region: South Europe/Argentina	4022 (18.9)	372 (18.6)
Central Europe	9890 (46.5)	947 (47.3)
North Europe/Australia	5091 (23.9)	545 (27.2)
East/Central East Europe	2282 (10.7)	139 (6.9)
Diabetes <sup>1</sup>	1047 (4.9)	153 (7.6)
AIDS <sup>1</sup>	4079 (19.2)	571 (28.5)
Non-AIDS defining malignancy <sup>1</sup>	632 (3.0)	96 (4.8)
Cardiovascular disease <sup>1</sup>	522 (2.5)	96 (4.8)
Age (years); median (IQR)	46 (39-52)	48 (42-54)
Baseline CD4 (/mm <sup>3</sup> )	614 (450-810)	565 (394-753)
Nadir CD4 (/mm <sup>3</sup> )	230 (120-345)	180 (74-280)

<sup>1</sup>Prior to baseline

**Predictors of LExTO : Adjusted incidence rate ratios (95% CI)**



\*Included as time-updated. Additionally adjusted for region, duration HIV+, HIV risk, ethnicity, HBV, HCV status, CD4 nadir (fixed at baseline), and smoking, BMI, HTN, NADM, ESLD (time-updated)

