Background
Although HIV-associated morbidity has been greatly reduced by ART, the incidence of deaths due to non-communicable diseases (NCDs) remains high in persons with HIV/PWH.

More than half of the deaths observed in recent years among ART-experienced PWH have been due to NCDs/comorbidities.

NCDs include cardiovascular disease, hypertension, osteoporosis, kidney and liver failure, diabetes mellitus, cancer and other comorbidities such as central nervous system disorders.

Clinical decisions regarding whether to modify ART in the context of a HIV/NCDs burden may be guided by current ART and specific comorbidities.

Objectives
To describe demographics, HIV-related, and clinical characteristics of PWH with HIV/NCDs/syndromes, and to identify NCDs/comorbidities.

To estimate the association between the new-onset of the following co-morbidities and the risk of experiencing a therapy switch:
- Obesity
- Dyslipidaemia
- Chronic kidney disease
- Diabetes mellitus

To evaluate whether these associations may vary by class of anchor drug.

Figure 1 Study Population and analysis design

Table 1. Hazard ratios (HR) of therapy switch in the context of HIV/NCDs.

Results
For convenience, the descriptive analyses are shown for the dyslipidaemia-free cohort only. In this study population, we found little evidence for a difference in baseline characteristics between participants who developed dyslipidaemia over time and those who did not, with the exception of calendar year (increase in dyslipidaemia was higher in more recent years, Table 1).

The results of the Cox regression analysis are controlled for this imbalance

Limitations
- Time-varying confounding has been ignored (e.g. the analysis of the risk associated with dyslipidaemia ignores the use of lowering-lipids drugs after baseline).
- We cannot rule out unmeasured confounding.
- Estimates from the Cox models are valid under the assumption of a correctly specified model (linear predictor, all baseline confounders accounted for, etc.).
- For rare comorbidities (i.e. diabetes) and in general to detect interactions, analysis is likely to be underpowered and needs to be repeated when a larger number of ART switch cumulates.
- We have not investigated reasons for switching and described the regimes that were initiated after the switch.

Conclusions
Overall, approximately 45% of participants underwent a ART switch by 24 months in our setting of VL≤50 copies/mL.

Among the co-morbidities considered, dyslipidaemia had the higher incidence while new onset of diabetes was very rare.

The development of diabetes over follow-up appeared to be associated with a >4-fold higher risk of modification of participants’ ART regimen composition, although with large uncertainty around the estimate.

Newly onset of dyslipidaemia was also a risk factor for ART modification (>2 fold increased risk) although only in participants receiving PIs-based regimes.

New development of these conditions in PWH with VL≤50 copies/mL should be carefully monitored as they appear to be a trigger for therapy modifications.

Icona Foundation Study Research Group


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