

High Incidence of Non-communicable Diseases among HIV-infected Patients in care: Longitudinal Analysis of HIV Treatment Outcomes in Kenya

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Introduction

Background:

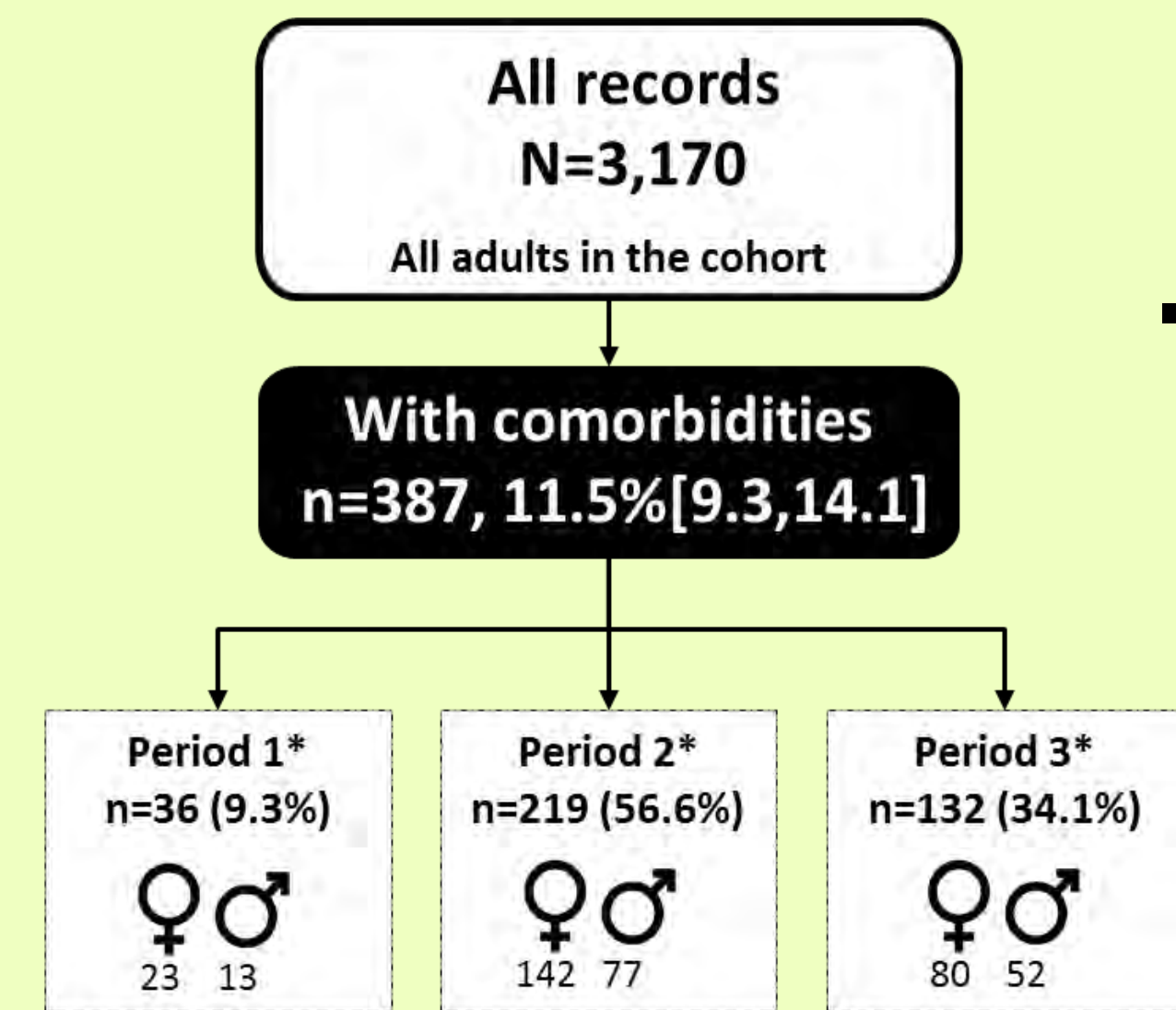
- Over the last decade, the Kenyan national HIV treatment program has grown exponentially to over 1 million people living with HIV (PLHIV) in care
- In the same period, noncommunicable diseases (NCDs) have become a leading contributor to disease burden in the country.
- There is limited data on the burden of NCDs among PLHIV in Kenya.

Aim:

- To characterize the burden of four major categories of NCDs (cardiovascular diseases, cancer, chronic respiratory diseases and diabetes mellitus) among adult PLHIV aged ≥ 15 years enrolled in HIV care and treatment facilities in Kenya.

Methods

Figure 1 Proportion of patients by ART status, Longitudinal Surveillance of Treatment in Kenya, 2016



^{*} Guidelines periods: Period 1 - 01Jan2003 to 31Dec2005; Period 2 - 01Jan2006 to 30Jun2010; Period 3 - 01Jul2010 to 30Sep2013

- Nationally-representative medical chart review of HIV-infected adults aged ≥ 15 years enrolled in HIV care and treatment facilities in Kenya from October 1, 2003 through September 30, 2013 was conducted.
- Proportions of the four NCD categories among PLHIV at enrollment into HIV care, and occurrence and management during subsequent HIV care and treatment visits were estimated
- Proportions and distributions of comorbidities were assessed using Wald adjusted Pearson's χ -square test
- NCD incidence rates and confidence intervals were calculated for cofactors for developing NCDs.

Results

Figure 2 Crude incidence rate ratios for Non Communicable Diseases (NCDs) during follow-up by selected characteristics among those who have any NCD, Longitudinal Surveillance of Treatment in Kenya, 2016 (n=387)

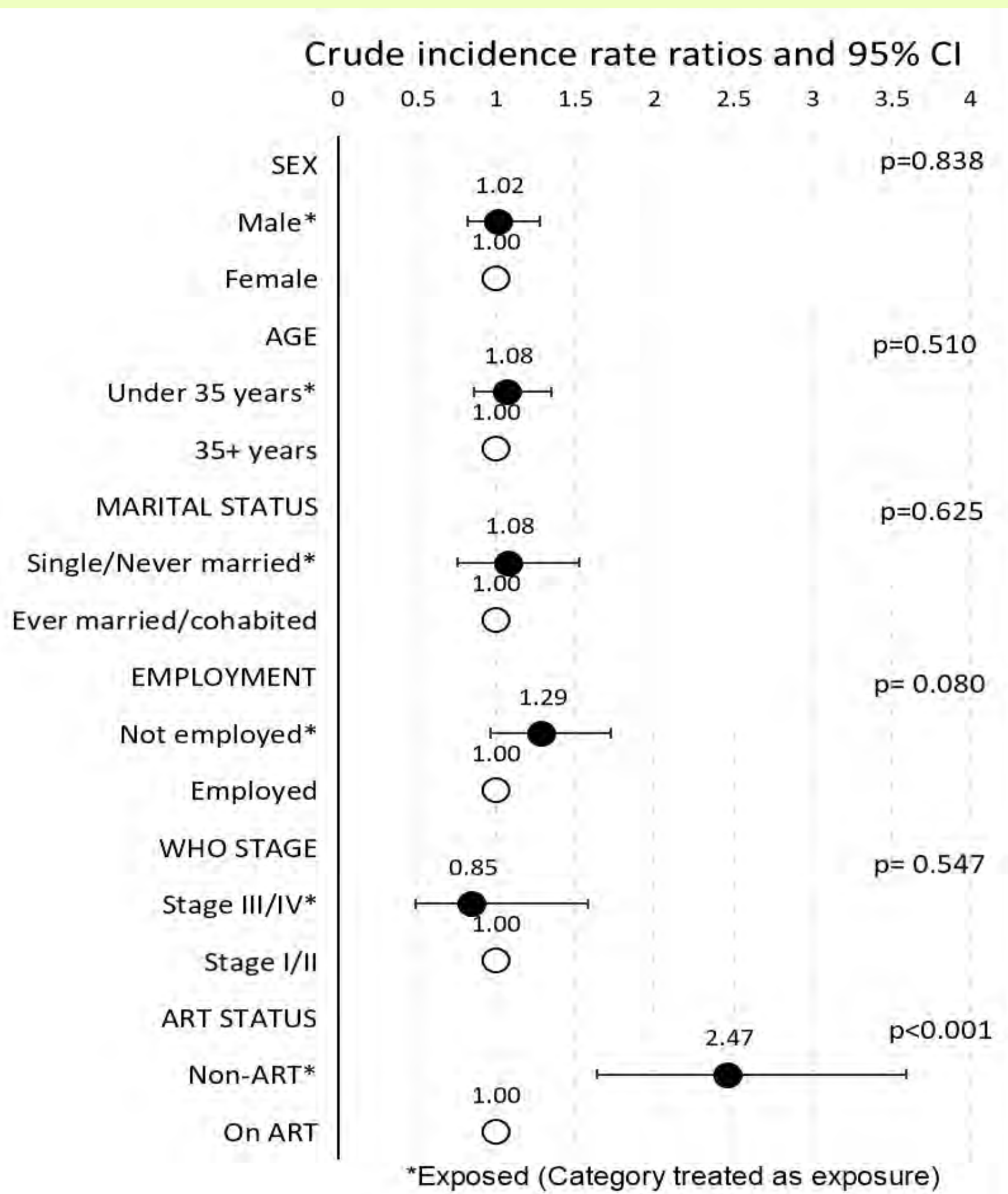


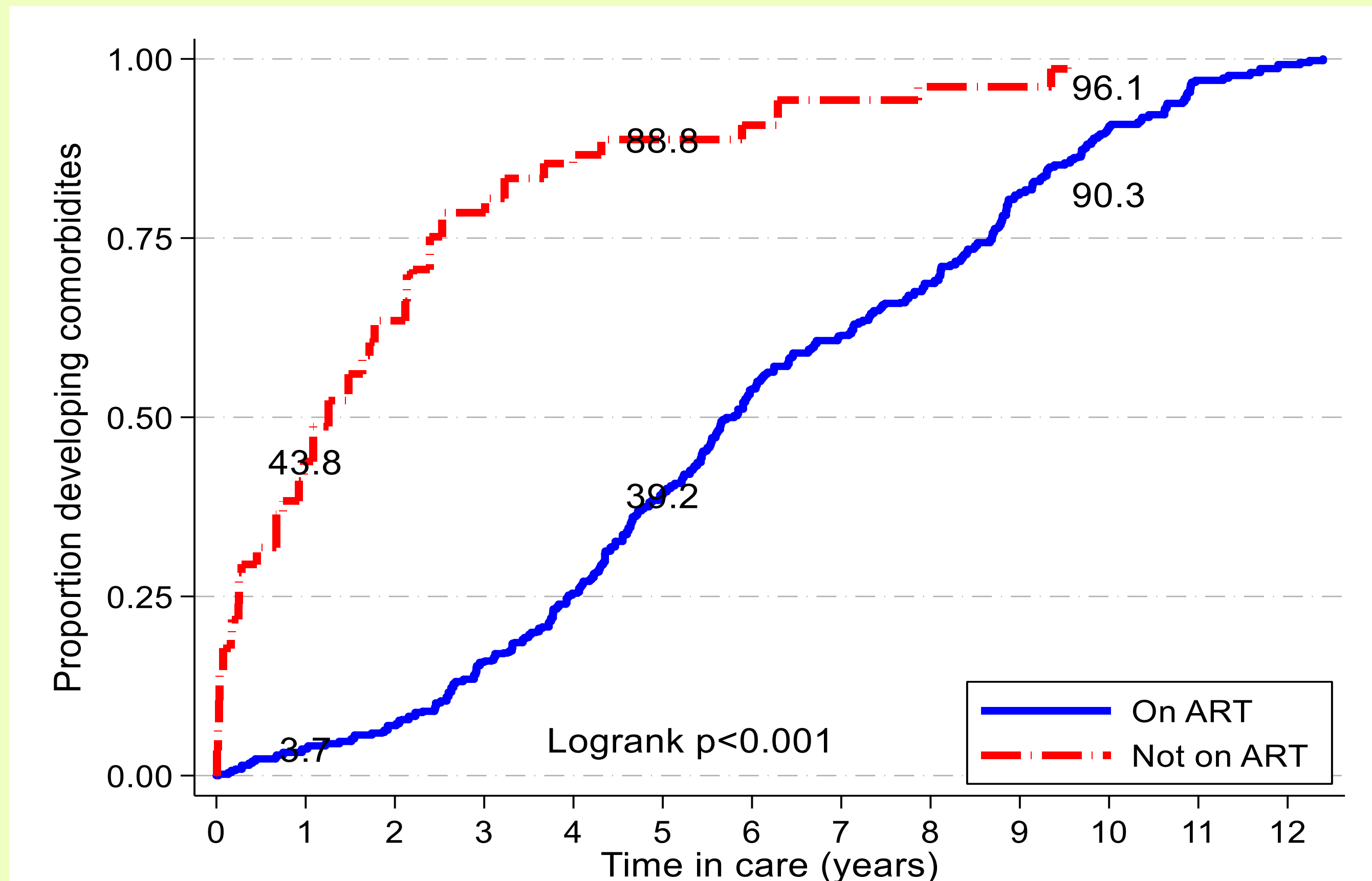
Table 1 Distribution of Non Communicable Diseases (NCDs) during care by ART status, Longitudinal Surveillance of Treatment in Kenya, 2016 (n=387)

| Comorbidities | Total | | On ART | | non-ART | | p-value |
|------------------------------|-------|-----------------|--------|-----------------|---------|-----------------|---------|
| | No. | Col % [95% CI] | No. | Col % [95% CI] | No. | Col % [95% CI] | |
| Total | 387 | | 346 | | 41 | | |
| 2+ high BP <12m apart* | | | | | | | 0.03 |
| Normal | 44 | 12.5[7.6,19.9] | 27 | 7.2[4.6,11.1] | 17 | 49.4[25.5,73.5] | |
| High BP | 343 | 87.5[80.1,92.4] | 319 | 92.8[88.9,95.4] | 24 | 50.6[26.5,74.5] | |
| Diabetes Mellitus | | | | | | | 0.437 |
| Without Diabetes | 378 | 97.9[95.3,99.1] | 339 | 98.5[96.7,99.4] | 39 | 93.7[68.6,99.0] | |
| With Diabetes | 9 | 2.1[0.9,4.7] | 7 | 1.5[0.6,3.3] | 2 | 6.3[1.0,31.4] | |
| Chronic Respiratory Diseases | | | | | | | 0.147 |
| Without asthma | 378 | 97.7[95.1,98.9] | 340 | 98.7[96.6,99.5] | 38 | 90.7[75.5,96.8] | |
| With asthma | 9 | 2.3[1.1,4.9] | 6 | 1.3[0.5,3.4] | 3 | 9.3[3.2,24.5] | |
| Cancer | | | | | | | 0.278 |
| Without Cancer | 384 | 98.9[95.2,99.8] | 343 | 98.8[94.4,99.8] | 41 | 100 | |
| With cancer | 3 | 1.1[0.2,4.8] | 3 | 1.2[0.2,5.6] | 0 | 0 | |

- We analyzed 3170 records of HIV-infected patients;
- 2115 (66.3%) were women, over half (51.1%) above 35 years of age and two thirds (63.9%) on ART.
- Proportion of any documented NCD among PLHIV was 11.5%.
- Elevated blood pressure was most common NCD 343 (87.5%). Only 17 (4.9%) had a documented diagnosis of hypertension.
- Differences in overall NCD incidence rates for men and women were (42.3 per 1000 person years [95% CI 35.8, 50.1] and 31.6 [95% CI 27.7, 36.1], respectively.

- Compared to women, IRR for men developing NCD was 1.3 [95% CI 1.1, 1.7], p=0.0082).

Figure 3 Proportion of patients developing comorbidities any time and during follow-up by ART status, Longitudinal Surveillance of Treatment in Kenya, 2016 (N=3170)



- At one year of follow up 43.8% of PLHIV not on ART had been diagnosed with an NCD compared to 3.7% of patients on ART; at five years the proportions with a diagnosed NCD were 88.8% and 39.2% (p<0.001), respectively

Conclusions

- PLHIV in Kenya have a high incidence of NCD diagnoses.
- In the absence of systematic screening, NCD incidence is likely underestimated in this population.
- In the context of a rising national burden of NCDs and increased survival among PLHIV, Kenya should consider increasing investment in integrated HIV-NCD screening and care.