Risk factors for 5-year mortality in people with HIV after cancer diagnosis (2000-2017)

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Introduction

- Studies demonstrating higher mortality following a cancer diagnosis among people with versus without HIV compels characterizing the factors driving poorer prognosis
- We estimated 5-year survival and risk factors for 5-year mortality among people with HIV (PWH) diagnosed with any cancer in North America from 2000-2017

Methods

Study Population:

- PWH, ≥18 years old, participating in the North American AIDS Cohort Collaboration on Research and Design (NA-ACCORD)
- Participated in cohorts collecting ICD-O-3 site/histology data
- Diagnosed with any validated cancer (except for non-melanoma skin cancer) from 2000-2017

Observation time:

Study entry: date of cancer diagnosis

Study exit, earliest of: death, administrative censoring (12/31/2017), loss-to-follow-up, or 5 years of follow-up after cancer diagnosis

Timescale: time since cancer diagnosis

Statistical Analysis:

- Estimated 5-year survival by cancer type using Kaplan Meier methods
- Cancer types were categorized as:
  - AIDS-defining cancer (ADC)
  - Virally-associated non-AIDS-defining cancer (VAC): certain oral cavity/pharyngeal cancers, hepatocellular carcinoma, vulvar, penile, vaginal and anal squamous cell carcinoma, and Hodgkin's Lymphoma
  - Non-AIDS-defining cancer (NADC): all other cancer types
- Patients could contribute multiple cancer diagnoses
- Assessed association between demographic/clinical factors and 5-year all-cause mortality using Cox proportional hazards models
- Risk factors included:
  - Age at cancer diagnosis (per 5-year increase)
  - Race/ethnicity (non-Hispanic [NH] white, NH-Black, Hispanic, Other
  - Sex (male or female)
  - Viral suppression at cancer diagnosis (≥200 copies/mL vs. <200 copies/mL)
  - CD4 count at cancer diagnosis (<200 cells/μL, 200-350 cells/μL, ≥350 cells/μL)
  - AIDS-defining illness ([ADI] clinical diagnosis or CD4 <200 cells/μL) prior to cancer diagnosis (yes, no))
  - Calendar year of cancer diagnosis (per 1-year increase)

Results

Associations between all-cause mortality and race/ethnicity, CD4 count and viral suppression merit further exploration into social, structural, and clinical/provider driven factors that may explain poor outcomes following a cancer diagnosis in people with HIV

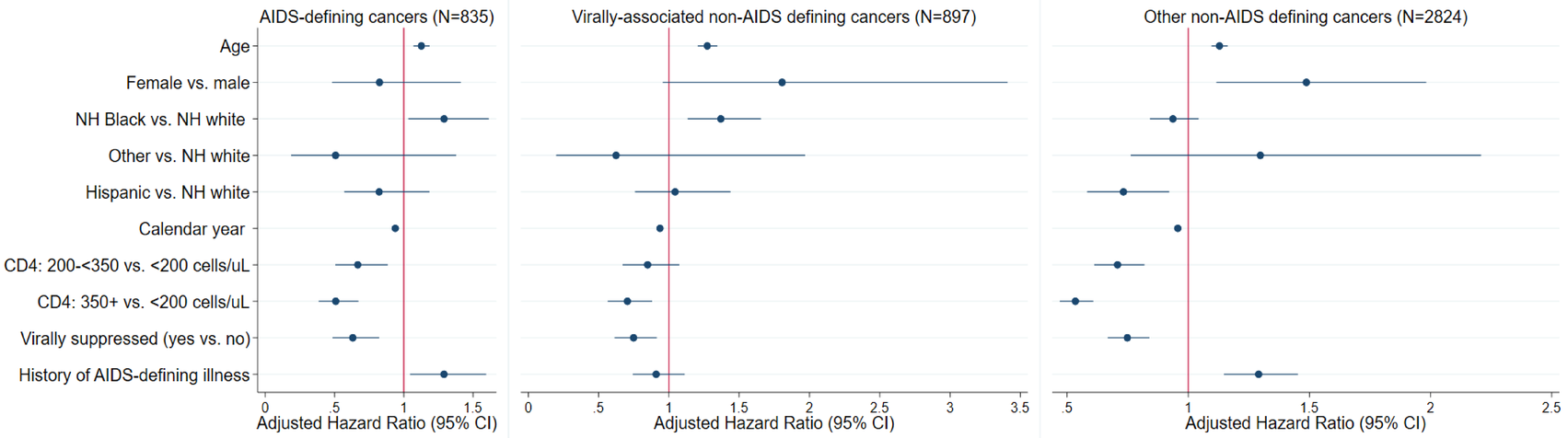

Figure 1. Risk factors for 5-year mortality following a cancer diagnosis in the NA-ACCORD, 2000-2017

- Mortality following ADCs and VACs was higher in Black vs. white patients; mortality following NADCs was lower for Hispanic vs. white patients
- For ADCs and NADCs, prior ADI was associated with increased mortality risk

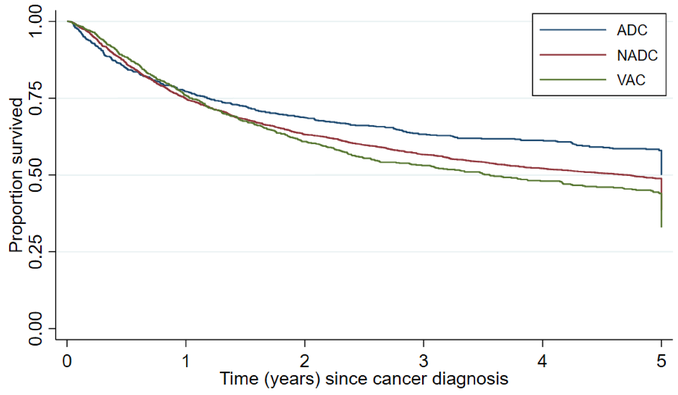

Figure 2. 5-year survival following a cancer diagnosis in the NA-ACCORD, 2000-2017 stratified by cancer type

There were 4556 cancer diagnoses (835 ADC, 897 VAC, 2824 NADC) in 4103 patients (12185 person-years); 5-year survival: for ADCs, 50% (95% CI 46%, 54%); for VACs, 33% (95% CI 29%, 37%); for NADCs, 39% (95% CI 36, 41%)

- Viral suppression and high CD4 count (≥350 cells/μL) were inversely associated with 5-year mortality for all cancer types
- Age was an independent predictor of mortality for all cancer types

Conclusions

- Lack of viral suppression and low CD4 count at cancer diagnosis increased 5-year mortality risk following cancer diagnosis for all cancer types
- Inconsistent racial disparities in mortality were observed by cancer type
- Limitations include assessment of all-cause, not cause-specific mortality
- Findings underscore importance of successful HIV treatment and exploring potential etiology for NADCs/VACs
- Future work will incorporate cancer treatment, stage, individual cancer site assessment, and longitudinal HIV viremia/ immune status

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