Background

Although antiretroviral therapy (ART) allows persons with HIV (PWH) to live longer, healthier lives, many PWH may not be receiving comprehensive HIV care, resulting in shortened survival.

Individual-level factors may contribute to shortened survival yet site-level factors and availability of ancillary services may also influence survival among PWH.

We sought to assess factors associated with mortality among a cohort of PWH receiving care in Washington, DC (The DC Cohort).

Objectives

To describe and compare individual factors, site-level factors, and care continuum patterns among those who died and those who survived in the DC Cohort.

Methods

DC COHORT STUDY

• Ongoing longitudinal observational cohort study of HIV-infected persons in care in Washington, DC at 14 participating clinical sites.

• Data abstracted from participants’ electronic medical records manually and through electronic exports and linked with DC Department of Health Vital Statistics death certificate data.

• Included participants enrolled from 1/2011 to 12/2016 who died after enrollment or were actively enrolled in the Cohort.

• Conducted survey of Cohort clinical sites to assess availability of selected services.

• Developed an overall clinic assessment score (range 0-9) for each site based on availability of services (e.g., hours, referrals, visit intervals, re-engagement services, specialty care)expand.

• Stratified sites into low (≤6) vs. high (7-9) scoring based on median score.

• Examined other site-level variables including systematic retention in care monitoring and routine review of medication pick up (ART monitoring).

ANAALYSIS

• Measured care continuum outcomes (e.g., retention in care on ART, viral suppression) in the 6 months prior to death.

• Conducted univariable analyses to compare participants who died vs. survived.

• Used Cox proportional hazards models to identify associations between site-level variables and time to death since HIV diagnosis.

Results

Table 1. Characteristics of DC Cohort Participants at Enrollment by Vital Status (N=6,316)

Table 2. Multivariable Analysis of Site-Level Factors Associated with Risk of Death

Results (continued)

• Among 6,603 participants, 287 (4.3%) died from 2011-2016; 1.05 deaths per 100 person-years.

• Deaths were mostly among males (71.8%), blacks (81.9%), and the mean age at death was 56.7 yrs.

• Median time from HIV diagnosis to death was 14.5 years (IQR 9.1, 21.3).

• 24% of deaths were AIDS-related, 10% cardiovascular disease (CVD)-related and 9% due to non-AIDS related malignancies. (Figure 1)

• Mean number of days from last care encounter to death was 78 (IQR:30-183) with a median CD4 closest to death of 344 cells/µl (IQR 562).

• Participants who died attended more hospital-based clinics with substance use and nurse navigation programs but fewer clinics with ART and retention monitoring services. (Figure 2)

• In separate multivariate analyses, an increased risk of death was observed among those in care at clinics with no ART monitoring [aHR 1.70; 95%CI:1.26, 2.29], no retention monitoring [aHR1.47; 95%CI:1.00, 2.14] vs. those with more services available [aHR 2.16; 95%CI: 1.31, 3.55].

• HIV care continuum outcomes found that higher proportions of those who died were retained in care in the 6-months prior to death [p=0.0185], yet lower proportions were prescribed ART [p=0.0418] and were virally suppressed [vL ≤200 copies/ml]0.8001. (Figure 3)

Conclusions

• Deaths observed primarily among those diagnosed longer and with more co-morbid conditions than those surviving.

• Despite relatively high rates of retention in care and ART use, almost a quarter of deaths among HIV-positive persons were still HIV-related.

• Limitations include non-random patient assignment to clinics, hence sicker participants may be more likely to seek care at hospital-based clinics. Additionally, “20% of participants had missing cause of death data.

• Strengths include large participant sample size, comprehensive site-level services data and data representing HIV care delivery in large urban city.

• Variability and comprehensiveness of site-level services may influence the quality of care being provided, help mitigate poor outcomes, and improve survival among people living with HIV.