MORTALITY RATES WITH OR WITHOUT INSTI THERAPY IN SUBGROUPS OF PWH, 2009-2018

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Introduction

In 2009, integrase strand inhibitors (INSTI)-based regimens were used as a component of salvage regimens. Since 2014 and the onset of the Treat All era, INSTIs are the guideline-recommended for initial regimen (i.e. first-line regimen). In prior NA-ACCORD studies:

- There was no difference in the composite outcome of AIDS, acute myocardial infarction, stroke, end-stage renal disease, end-stage liver disease, or death in the first 6 years after ART initiation, comparing those initiating ART with an INSTI vs efavirenz from 2009-2016 (*Lu H, et al, Clin Infect Dis 2021;73:e1408-14.*)
- There was a dramatic decrease in 5-year all-cause mortality among those entering care from 1999-2017 (*Edwards JK, et al. Ann Intern Med 2021;174:1197-1206)*.

We investigated mortality by INSTI-based (vs. other regimen) among all ART users from 2009-2018.

Methods

Study population: Patients in NA-ACCORD clinical cohorts who were ≥18-years-old and prescribed ART between 2009 and 2018.

Mortality: Obtained via linkages to vital statistics registries, physician or decedent's survivors report in the electronic health record.

INSTI: Those prescribed INSTI-based ART were compared with those prescribed non-INSTI-based regimens

ART was time-varying. Person-time at risk and deaths were attributed to the observed ART regimen used.

Calendar periods: Comparisons were made over selected periods representing the eras of the use of INSTIs: **1**) the salvage-use period (2009-11); **2**) the onset of the Treat All period (2012-14), and **3**) the first-line regimen period (2015-18).

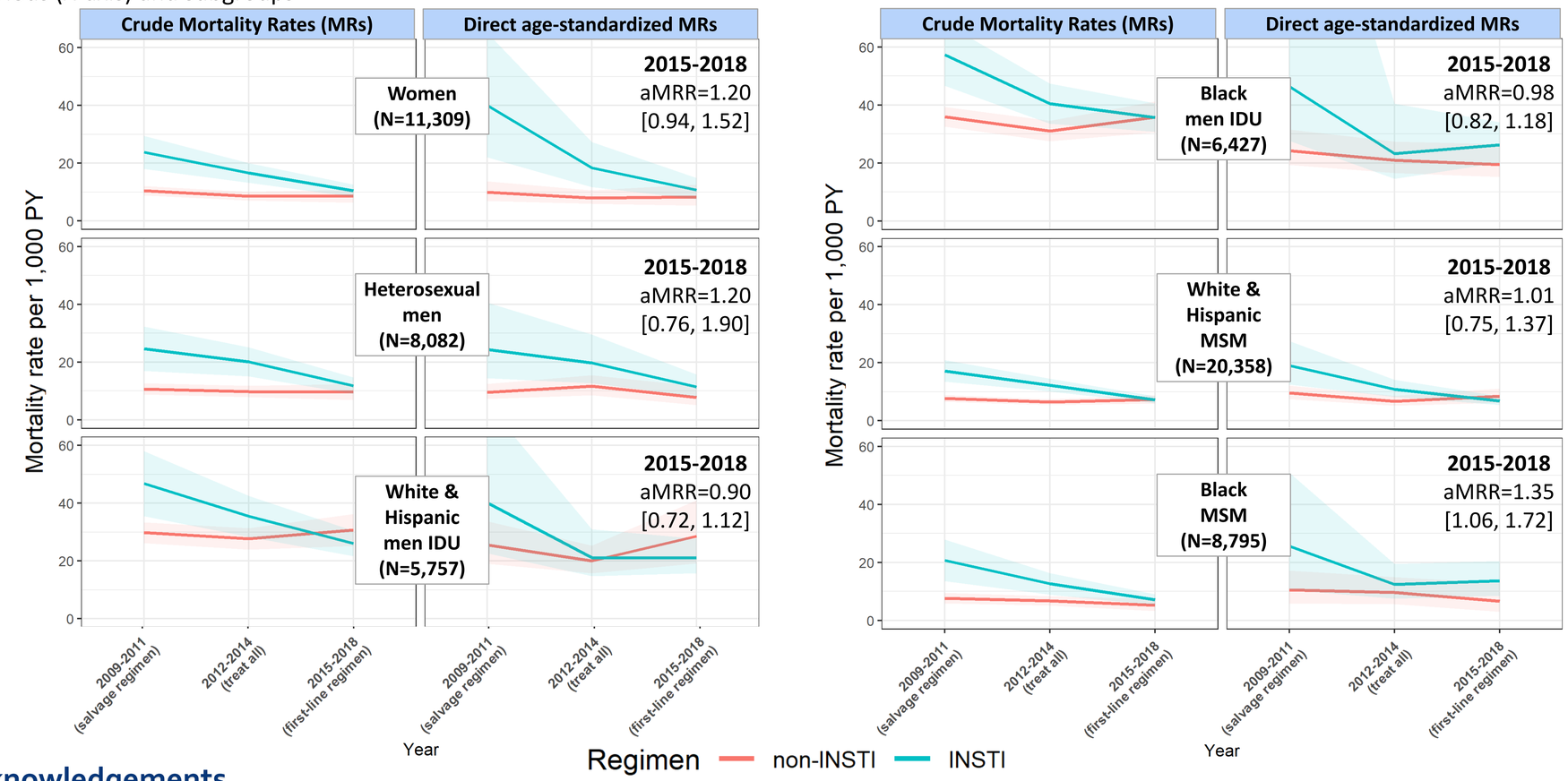
Subgroups: The population was stratified by sex, race/ethnicity, and HIV risk category, conditional ≥20 deaths in the INSTI and non-INSTI groups in each calendar period and subgroup: **1**) women, **2**) heterosexual men, **3**) White and Hispanic men with a history of injection drug use (IDU), **4**) Black men with IDU, **5**) White and Hispanic men who have sex with men (MSM), and **6**) Black MSM.

Statistical Analyses: Age-adjusted mortality rates (**MRs**) and 95% confidence intervals were estimated using direct standardization to the 2000 US Standard Population. Quasi-Poisson regression models accounted for overdispersion and produced age-adjusted mortality rate ratios (**aMRR**) and 95% confidence intervals (**[,]**).

Mortality decreased substantially among those prescribed INSTIs in parallel with the onset of the "Treat All" era. In the first-line regimen period (2015-2018), there was no difference in mortality in INSTI (vs. non-INSTI) users, except for among Black MSM. Investigations of drivers of this disparity, and appropriate interventions, are merited.

Results

Figure 1: Crude and direct age-standardized mortality rates (lines) and 95% confidence intervals (shaded regions), and age-adjusted mortality rate ratios (aMRRs) and 95% confidence intervals in the 2015-2018 period, among those using an INSTI-based regimen (vs. another regimen), by calendar periods (X-axis) and subgroups



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