METHODS

BACKGROUND

• Cardiovascular disease (CVD) has become more prominent among HIV-infected individuals owing to improved survival, traditional CVD risk factors, and potential effects of antiretroviral therapy (ART)
• The extent to which CVD mortality rates are changing is unclear but has continued relevance in the context of current ART guidelines

METHODOLOGY

Study population

• The New York City HIV Surveillance Registry is a population-based registry of people diagnosed with HIV infection and reported by law to the New York City Department of Health and Mental Hygiene (DOHMH)

Inclusion criteria

• All persons age 13+ diagnosed with HIV infection and reported to the New York City Department of Health and Mental Hygiene (DOHMH) for surveillance purposes

Statistical analysis

• Surveillance data were linked with the city’s Vital Statistics Registry and the National Death Index
• We examined age-specific and age-standardized rates of mortality due to major cardiovascular diseases (ICD-10 codes I00-I78) as the underlying cause of death
  - 2000 U.S. Standard Population used for standardization
• Using log-linear models, we determined time trends in mortality rates among HIV-infected New Yorkers, and compared them with trends among New Yorkers not diagnosed with HIV (the “general population”)

Inclusion criteria

• All persons age 13+ diagnosed with HIV infection and reported to the HIV Surveillance Registry, and at risk for death between 2001 and 2012

RESULTS

Study population characteristics (N=145,009)

• 71% male, 29% female; median age: 49 years (IQR 41-56)
• 46% of men reported sex with men as HIV transmission factor; 75% of women reported heterosexual transmission or unknown risk

CVD mortality among HIV-diagnosed individuals

• 29,326 deaths occurred, with annual declines due mainly to fewer HIV-related deaths (Fig. 1)
• CVD deaths increased from 7% to 13% of all deaths among HIV-diagnosed individuals (p<0.001)
  - In contrast, CVD deaths in the general population decreased from 47% to 39% (p<0.001)
• Specific causes included chronic ischemic heart disease (42%), hypertensive diseases (27%), stroke (10%)

CVD mortality rates compared with the general population

• CVD mortality rate decreased over time regardless of HIV diagnosis status or sex (Fig. 2)
• Overall, the age-standardized CVD mortality rate was lower among HIV-diagnosed individuals (3.24/1,000, 95% CI 3.20-3.22) during this time period
  - Adjusted RR 1.73, 95% CI 1.58-1.80

Age-stratified comparison of CVD mortality rates with the general population

• HIV-diagnosed individuals had significantly higher CVD mortality than the general population through age 65, after which CVD mortality was similar or higher in the general population (Fig. 3)
  - For example, among those 45-54 years old, HIV-diagnosed individuals had a 73% increased rate of CVD death compared with the general population (adjusted RR 1.79, 95% CI 1.58-1.89)

CONCLUSIONS

• CVD deaths constitute an increasing share of deaths among HIV-diagnosed persons
• While CVD mortality rates decreased over the decade, both viremic and virologically suppressed HIV-diagnosed individuals had higher CVD mortality rates than the general population until age 65
• HIV care providers should emphasize preventive measures to reduce CVD risk such as smoking cessation, blood pressure control, and lipid management

For the Conference on Retroviruses and Opportunistic Infections, February 23-26, 2015. Supported by the Einstein-Montefiore Center for AIDS Research (P30-AI-051519). For more information, contact david.hanna@einstein.yu.edu