Mortality of HIV-Infected Youth in the Combination Antiretroviral Therapy (cART) Era

GAVATU MIJAN, PAGE L. WILLIAMS, MIRIAM CHERNOFF, MARK J. AZEJO, MYRON J. LEVIN, GEORGE R. SEAGE III, JAMES OLEKSIK, MURLI PURWAN, ROHAN HAZAR, SHIRLEY TRABLET, BONNIE ZIMMER AND RUSSELL B. VANEY for the IMPAACT P1074 Study Team

1 Tulane University School of Medicine, New Orleans, LA; 2 Center for Bioethics and Primary Care in the Division of General Internal Medicine, Harvard Medical School, Boston, MA; 3 University of Colorado at Denver, Aurora, CO; 4 Department of Epidemiology, Harvard School of Public Health, Boston, MA; 5 Rutgers New Jersey Medical School, Newark, NJ; 6 Albert Einstein College of Medicine, Bronx-Beacon Hospital Center, Bronx, NY; 7 National Institutes of Health, Bethesda, MD; 8 Frontier Science Technology and Research Foundation, Ambert, NY

OBJECTIVES

To describe the current mortality, infectious and non-infectious causes of mortality, and prognostic factors among HIV-infected youth in the IMPAACT P1074 study.

METHODS

This study used data from the IMPAACT P1074 cohort study in a subset of 283 HIV-infected youth aged 13-17 years of age study entry from 2009-2013. Causes of death were derived from medical records, death certificates, and interviews or interviews with family and friends. In this report, we evaluate risk factors for mortality.

RESULTS

The study population included 283 HIV-infected youth aged 13-17 years of age at study entry from 2009-2013. The mean age at death was 14.2 years (SD 1.4). The mean age at last chart review was 15.8 years (SD 1.4). The primary causes of death were wasting/multisystem failure (31%), AIDS-defining conditions (28%), lung cancer (20%), and acute respiratory infections (20%). Mortality was significantly higher in males compared to females (223 vs 60, p<0.001). The mortality rate was 12.1/100 person-years (95% CI: 9.3, 16.0) for males and 3.1/100 person-years (95% CI: 0.1, 8.9) for females.

CONCLUSIONS

The mortality rate in HIV-infected youth is significantly higher than that of the general US population. Mortality in HIV-infected youth is due to HIV-related conditions associated with virologic failure and immune suppression. HIV-associated opportunistic infections characterize earlier periods in the HIV epidemic have become uncommon but do occur and are associated with death.

Morbidity Outcomes in IMPAACT P1074 (Table 3):

- Gastrointestinal infections including HIV infection, asthma, pneumonia, psychiatric conditions (mood disorders) and neurodevelopmental disorders (learning and communication disorders) were common.

- Pregnancy occurred in almost 20% of females.

- An increased trend in RR compared with decrease in CD4 count for male genital tract infections, including genital herpes infections, mood disorders, oropharyngeal candidiasis, pneumocystis, wasting failure to thrive, and zoster (CDC).

- A significant increase in RR from 2008-2014 was observed for vitamin D deficiency and metabolic bone disorders.

- Certain infectious conditions (tuberculosis and mycobacterial diseases, viral diseases, and opportunistic infections) were increasing in incidence.

- Major metabolic abnormalities, sexually transmitted infections, and psychiatric and neurodevelopmental disorders are becoming more common and may reflect aging, chronic HIV infection, cART-related toxicities, and chronic inflammation.

- These findings highlight the importance of early diagnosis, linkage to care, and initiation of interventions to prevent efforts to maximize adherence to cART during adolescence and young adulthood.

REFERENCES


PHYSIOLOGICAL CONSEQUENCES OF HIV INFECTION IN CHILDREN AND ADOLESCENTS

- Virological failure and immune suppression.

- Opportunistic infections and related conditions.

- Malignant neoplasms and other cancers.

- Comorbid conditions, including bone disorders.

- Mental and neurodevelopmental disorders.

- Psychiatric conditions, including mood disorders.

- Other conditions, including tuberculosis and mycobacterial diseases.

- Metabolic abnormalities, sexually transmitted infections, and other conditions.