

Life Expectancy of HIV-positive individuals on combination antiretroviral therapy in Canada

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Objective

To determine how calendar period and patient characteristics affect the life expectancy and mortality of people living with HIV initiating combination antiretroviral therapy (cART) in Canada, and to consider how loss to follow up impacts these estimates.

Importance of this Study

- Life expectancy among people living with HIV remains lower than the general population, even though cART is now safer and more effective.
- The impact of patient characteristics and calendar period when cART is initiated have not been evaluated for their impact on life expectancy and mortality in Canada.
- Life expectancy and mortality estimates may be affected by participants who are lost to follow up (those who drop out/are lost from the cohort).

How this Study was Conducted

- Data from the CANOC collaboration, a multi-site cohort of HIV-positive individuals on cART in Canada were used.
- Date of death from all causes was the primary outcome measure.
- The study compared life expectancy of HIV-positive individuals on cART over three calendar periods, based on the year that cART was first started (2000–2003, 2004–2007 and 2008–2012).
- Mortality rates were also grouped by sex, aboriginal ancestry, injection drug use history and CD4 count at treatment initiation.
- Estimated error due to participant loss to follow up was 30%, and life expectancy and mortality rate measures were adjusted to account for this error.

Study Results

- Overall, remaining life expectancy at age 20 was 45 years, meaning a person living with HIV would be expected to live to 65 years of age.
- When we accounted for participant loss to follow up, a person living with HIV was estimated to live to 58 years of age.
- Lower life expectancy was seen for women, participants with a history of injection drug use, Aboriginal participants, and those starting cART with a CD4 cell count <350 cells/ μ l.
- Life expectancy in the calendar period 2000-2003 was lower than in periods 2004-2007 and 2008-2012; participants initiating cART between 2008-2012 were expected to live to 77 years of age compared to 61 years of age for those initiating cART between 2000-2003.

Implications

- Life expectancy and mortality for HIV-positive individuals on cART are different depending on calendar period and patient characteristics at treatment initiation.
- Failure to consider the error due to participant loss to follow up may result in lower than actual mortality rates and higher than actual life expectancy.
- Accounting for error due to loss to follow up may contribute to the development of a new standard for future research in this field

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