High rates of injury found among some HIV-positive people in B.C.

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In Canada and other high-income countries, the widespread use of potent combination HIV therapy (ART) has significantly reduced AIDS-related deaths and illness—at least among people who are aware of their infection, in care and taking ART every day exactly as prescribed and directed.

Due to the tremendous life-saving effects of ART, researchers increasingly expect that a young adult who is infected today and who initiates treatment shortly thereafter, and who does not have any pre-existing health issues, and who is engaged in his or her care and treatment over the long-term is likely to have a near-normal life expectancy. As a result, some HIV researchers in high-income countries are turning their focus to factors that can diminish life expectancy despite use of ART.

Several research teams in the U.S. and elsewhere have found elevated rates of injury (classed as intentional or unintentional) among HIV-positive people. A team of researchers at the British Columbia Centre for Excellence in HIV/AIDS undertook an assessment of rates and predictors of injury in HIV-positive and HIV-negative adults in that province.

The B.C. researchers found that, overall, 14% of deaths among HIV-positive people were due to injury. In contrast, the figure among HIV-negative people was 6%. Furthermore, they stated that “the highest rates of injury among [HIV-positive] people were associated with falls and self-harm.” Among HIV-negative people, the top two causes of injury were “falls and motor vehicle accidents.” Another finding was that people in rural areas were more likely to experience injury than people in the metropolitan Vancouver region. Also, Indigenous people were more likely to sustain injury than non-Indigenous people. The researchers made recommendations that could be used to develop strategies to help reduce injury rates in HIV-positive communities.

Study details

Researchers assessed health and vital statistical information from several B.C. databases collected between April 1, 1996 and March 31, 2013. They randomly selected data on HIV-negative people to use as a comparison.

A brief summary of the profile of the populations upon entering this study was as follows:

HIV-positive

- 13,764 people (81% men, 19% women)
- age – 34 years

HIV-negative

- 417,416 people (49% men, 51% women)
- age – 40 years

Results

Deaths due to injuries were distributed as follows:

- HIV-positive – 14%
The top three causes (in declining order) of injury were listed by the researchers as follows:

**HIV-positive**
- falls
- self-harm
- assault

**HIV-negative**
- falls
- motor vehicle accidents
- “other injury”

The researchers found that, overall, HIV-positive people compared to HIV-negative people were more likely to experience the following:

- three-fold more likely to experience an injury
- nine-fold more likely to have an intentional injury

These differences were statistically significant.

**Trends in time**

The B.C. researchers found the following trends regarding injuries in the two populations studied:

- The rate of unintentional injuries among HIV-positive people significantly declined and then stabilized around the year 2001. After that time, the rate of these injuries remained steady but was still almost double the rate seen in HIV-negative people to the end of the year 2012. In HIV-negative people, the rate of these injuries was more or less constant throughout the study.
- The rate of intentional injuries among HIV-positive people fell over the course of the study. However, by 2012 the rate of these injuries was still several-fold greater than among HIV-negative people. In the latter group, the rate of intentional injuries was low and remained low throughout the study.

**Exploring risks for injury among HIV-positive people**

Researchers performed a sub-analysis on 9,033 HIV-positive people who had used ART because there was more detailed data on this subgroup.

The HIV-positive people in this subgroup with an increased likelihood of having an unintentional injury had the following features:

- older age
- Indigenous ancestry
- living in a rural area
- co-existing health issues, such as liver disease, cardiovascular disease, kidney disease, infection with hepatitis-causing viruses
- mental health conditions
- being unemployed

The HIV-positive people in this subgroup with an increased likelihood of having an intentional injury had the following features:

- younger age
- male
- living in a rural area
- injecting street drugs
- having these co-existing health issues—liver disease, hepatitis B virus infection, depression and other mental
Below are some underlying factors that likely drive injury risk:

**Mental health**

The researchers stated the risk of intentional injury among HIV-positive people in this study was “highly associated” with a history of mental health conditions, in particular, depression. Several other studies in high-income countries have found a link between mental health issues and a risk of self-harm. The researchers also made this statement:

“Evidence that links unintentional injury with mental illness is also growing.” One study found that “mental illness, independent of substance abuse, was a risk factor for [unintentional injury].”

**Injecting street drugs**

The researchers found that HIV-positive people who injected street drugs, who had hepatitis B virus infection and liver disease (a consequence of hepatitis B) had high rates of intentional injury. Furthermore, they stated, “This is an expected finding given the high prevalence of injecting drug use among [HIV-positive people] in B.C. and the concurrent epidemics of substance abuse, violence and HIV.”

The intersection of substance use and violence is not unique to B.C. or people with HIV. In one study cited by the B.C. team, a group of researchers in New York City found that in the 1990s 27% of residents “with fatal injuries had used cocaine shortly before their deaths.” The New York researchers proposed that the impact of cocaine on the brain, “including agitation, paranoia and depression, may lead to the increased likelihood of intentional and unintentional injury.”

Readers should note that when the researchers reviewed deaths among HIV-positive people in New York City in subsequent years (1999 to 2004) they found that 76% of deaths unrelated to HIV were related directly or indirectly to substance use. Researchers in Southern Alberta who have investigated deaths among HIV-positive people have found that deaths due to substance use overdose accounted for 27% of non-AIDS-related deaths in the current era.

**Rural vs. urban**

Studies in high-income countries have found a general increased risk of injury among people living in rural areas. In this regard, the B.C. study’s findings were not surprising. Scientists in Norway who have studied injury rates in rural areas have suggested that the increased risk may be driven by “exposure to dangerous farm machinery, firearms, open areas of water, as well as greater alcohol consumption and lower socioeconomic status.”

**Indigenous people**

In the B.C. study, researchers found that Indigenous HIV-positive people had higher rates of unintentional injury. They noted that similar findings have been reported from Western Canada and Ontario. Some researchers think that lower socioeconomic status may play a role in injury rates among Indigenous people. However, more research is needed to better understand this issue among Indigenous people.

**Next steps**

The B.C. study clearly shows that some HIV-positive people are at extraordinarily heightened risk for injury—both intentional and unintentional. The findings from this study can be used to develop strategies for injury prevention. The researchers stated that it is critical to address at least the following issues if the burden of injuries is to be lessened:

- substance use
- mental health
- poverty
The researchers concluded:

“Given that injuries are predominantly both predictable and preventable, the implementation of interventions that reduce the incidence of injury among [HIV-positive people] is highly warranted.”

Resources

- Pre-fix: A guide for people with Hep C or HIV who inject drugs – CATIE
- Study finds sustained-release dexamfetamine is promising for reducing cocaine use – CATIE News
- Profile: Back from the Brink – The Positive Side (Fall 2016)
- Ask the Experts: Addictions – The Positive Side (Fall 2016)
- HIV and emotional wellness – CATIE
- HIV and brain-related issues – TreatmentUpdate 204
- Depression and Bipolar Disorder – Canadian Mental Health Association
- Schizophrenia and HIV—Study underscores serious issues associated with dual diagnoses – CATIE News
- Schizophrenia – Canadian Mental Health Association

REFERENCES:

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