First Nations Health Authority
Health through wellness

Association between toxic drug events and brain injury

What is this study about?

This study aims to:

i) Examine the frequency of brain injury or encephalopathy among people who experience a toxic drug event and,
ii) Examine the relationship between the toxic drug use and brain injury or encephalopathy.

Why conduct this study?

In April 2016, a public health emergency was declared in British Columbia (BC) due to the rapidly increasing number of deaths related to toxic drugs. Between 2015 and 2019, around 30,000 people experienced non-fatal toxic drug events. During that time clinical reports identified brain injuries resulting from toxic drug use as a health concern.

Non-fatal toxic drug events and long-term drug use can lead to brain injuries, resulting in impairment in: decision-making, coordination, concentration, vision, speech, and memory.

These symptoms may not appear until three weeks or more after the toxic drug event. This is challenging as patients are often discharged within 24 or 48 hours of being admitted to the hospital, not allowing enough time to recognize long-term symptoms and negative health implications while in a medical setting.

KEY FINDINGS

- Drug toxicity can lead to lasting health issues, like brain injuries.
- People who experienced a toxic drug event are more likely to have brain injury or encephalopathy compared to people who did not experience it.
- There is a need to create services to screen & detect brain injury among people experiencing toxic drug events.

What did the study find?

- Among people with brain injury or encephalopathy, 14.6% had one or more drug toxicity events between 2015 and 2019.
- People who were 40 years and older, male, and had a mental illness were more likely to have encephalopathy after experiencing a toxic drug event.
- People who experienced a toxic drug event were 15.3 times more likely to have encephalopathy compared to people who did not experience it.

What do these findings mean?

- The findings show that people who experience a toxic drug event may face lasting health issues, including brain injury.
- Undetected brain injury can affect decision-making ability, therefore increasing the likelihood of future toxic drug events. It can also make existing problems like finding housing, jobs, support, and dealing with the stigma of drug use even worse.
- There is a need to create healthcare services and programs to develop a standard approach to define, screen, and detect brain injury among people experiencing toxic drug events

For more information, you can find the original study at this link: Association between toxic drug events and encephalopathy

Resources on FNHA.ca

- Listen to the voices of people with lived and living experience to learn about their substance use and wellness journeys.
- Start the conversation: check out the FNHA's Courageous Conversations on Substance Use Toolkit.
- Browse FNHA's Indigenous harm reduction webpage to explore videos and resources on First Nations perspectives on harm reduction, connecting back to culture, and taking care of each other.
- Access other FNHA resources on the Harm Reduction and the Toxic Drug Crisis webpage.
- Eliminating Stigma Around Substance Use Will Help Save Lives
- Mental health and cultural supports

Xavier, C.G., Kuo, M., Desai, R. et al. Association between toxic drug events and encephalopathy in British Columbia, Canada: a cross-sectional analysis. Subst Abuse Treat Prev Policy 18, 42 (2023). https://doi.org/10.1186/s13011-023-00544-z