H86 Does Black Tar Heroin "Protect" King County, Washington, From Fentanyl-Related Mortality?

Nicole A. Yarid, King County MEO, 325 Ninth Avenue, Seattle, WA 98104; Richard C. Harruff, MD, PhD, King County MEO, 325 Ninth Avenue, Box 359792, Seattle, WA 98104; Andrea Orvik, 2246 Forest Acres Drive, Johnson City, TN 37604; Janinne Blank, 501 Kensington Avenue, Buffalo, NY 14086; and Sini Panicker, 22624 Dulles Summit Court, Dulles, VA 20166*

The goals of this presentation are to: (1) describe regional differences in the so-called opioid epidemic; and, (2) explain possible reasons why King County, WA, has experienced a smaller proportion of fentanyl-related deaths.

This presentation will impact the forensic science community by attributing at least part of the high regional variability of drug overdose rates to the supply and demand of various opioids, specifically in the supply of black tar heroin, which appears to reduce the demand for the more potent fentanyl-type drugs.

In contrast to other regions around the country that have experienced rapidly rising opioid overdose death rates, King County, WA, has seen a relatively modest rise in overdose deaths. The present study was conducted to provide possible explanations for the differences.

Methods and Materials: Data on fatal overdoses in King County were obtained from the King County Medical Examiner's Office in Seattle, WA. Similar data were obtained from West Virginia and Erie County, NY. Data on overdose deaths in British Colombia, Canada, were obtained from the British Colombia Coroners Service report of June 30, 2017.

Results: From 1999 to 2016, drug overdose rates in King County increased from 11.9 to 16.9 per 100,000 population. Over the same period, the rates in Erie County increased from 2.6 to 35.5 per 100,000. In West Virginia, the total number of drug overdose deaths for the whole state increased from 212 in 2001 to 879 in 2016. In British Columbia, drug overdose deaths for the province climbed from 269 in 2012 to 967 in 2016. While drug overdoses deaths increased nearly exponentially in Erie County, West Virginia, and British Columbia, the rate of increase in King County was close to linear. The spectrum of drugs responsible for the increasing death toll was also different. In King County in 2016, the most common opioid responsible for fatal overdoses was heroin; only 22 deaths were due to fentanyl and related fentanyl-type drugs. In British Columbia, fentanyl-type opioids accounted for most of the three-fold increase in overdose deaths from 2012 to 2016. In West Virginia in 2001, only 9 deaths were caused by fentanyl type drugs; in 2016, the number was 360. In Erie County, fentanyl-type drugs were present in 229 of the 327 overdose deaths in 2016. Although heroin accounted for a sizeable proportion of opioid-related deaths in all locales, the physical characteristics of the drug varies from place to place. In King County, black tar heroin is the predominant form, while in British Columbia; Erie County, and West Virginia, heroin is predominantly a white or other color powder.

Discussion and Conclusions: Although opioid-related deaths have soared throughout the country in the last several years, the crisis in King County differs from the three places used for comparison in two ways: in King County, the rate of increase of drug overdose deaths is fairly modest rather than explosive; also in King County, fentanyl-type drugs are fairly uncommon in overdose deaths. The most likely explanation for the difference is the physical characteristics of the drug. Black tar heroin, by far the predominant form in King County, is a black gooey substance rather than a powder. This physical characteristic would make it difficult to simply mix black tar heroin with another powdery drug, such as fentanyl, while it would be easy to mix fentanyl into a powdery form of heroin. But this explanation may not be the only one. While it would be relatively simple to adulterate black tar heroin with fentanyl during the "cooking" phase of drug preparation, for unknown reasons, this appears not to happen very often. Very few seizures of black tar heroin have been found to contain fentanyl, and toxicology reports in King County infrequently find heroin and fentanyl together. It is also possible that mixing fentanyl into black tar heroin has no marketing advantage. King County has a strong history of black tar heroin consumption, and it is possible that the current supply of black tar heroin merely suits the local demand. While efforts continue to control both the supply of and the demand for abused drugs, it does appear that, ironically, black tar heroin "protects" King County against more potent fentanyl-type opioids.

Black Tar Heroin, Opioid Epidemic, Toxicology

*Presenting Author