

Accepted Manuscript

Title: The distribution and redistribution of fentanyl and norfentanyl in post mortem samples

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PII: S0379-0738(17)30547-9

DOI: <https://doi.org/doi:10.1016/j.forsciint.2017.12.031>

Reference: FSI 9113

To appear in: *FSI*

Received date: 17-8-2017

Revised date: 11-12-2017

Accepted date: 16-12-2017

Please cite this article as: C.N. Chatterton, M. Scott-Ham, The distribution and redistribution of fentanyl and norfentanyl in post mortem samples., *Forensic Science International* (2017), <https://doi.org/10.1016/j.forsciint.2017.12.031>

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The distribution and redistribution of fentanyl & norfentanyl in post mortem samples.

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Abstract

This article compares 249 post mortem case reports that were positive for fentanyl / norfentanyl. All the cases were submitted to, and analyzed by, the toxicology department of the Office of the Chief Medical Examiner, Edmonton, Alberta, Canada. This study highlights the varied distribution of fentanyl in the body after death as a result of misadventure, i.e., these are accidental drug overdose cases as opposed to a study of analytical data resulting from fentanyl use/administration in an clinical environment and/or death as a result of suicide.

Post mortem samples were collected from more than one anatomical site and analysed for fentanyl and norfentanyl using liquid chromatography-tandem mass spectrometry. Ante-mortem samples were available in 4 of these cases and were also analysed.

Post mortem mean blood fentanyl concentrations were found to be 13.2 ng/mL (femoral), 19.1 ng/mL (iliac) and 42.0 ng/mL (subclavian). For norfentanyl the mean concentrations were 4.6 ng/mL (femoral), 4.6 ng/mL (iliac) and 7.4 ng/mL (subclavian). Mean vitreous fentanyl and norfentanyl concentrations were 10.8 ng/mL and 3.5 ng/mL respectively. Mean liver fentanyl and norfentanyl concentrations were found to be 185.5 ng/g and 18.8 ng/g respectively.

This study demonstrates the importance of multi-site sample collection and subsequent analysis for a thorough post mortem toxicological investigation. The study also

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