

## Accepted Manuscript

Title: Multiple fatalities in the North of England associated with synthetic fentanyl analogue exposure; detection and quantitation a case series from early 2017

Authors: Laura Hikin, Paul R. Smith, Eleanor Ringland, Simon Hudson, Stephen R. Morley



PII: S0379-0738(17)30494-2  
DOI: <https://doi.org/10.1016/j.forsciint.2017.11.036>  
Reference: FSI 9080

To appear in: *FSI*

Received date: 29-8-2017  
Revised date: 21-11-2017  
Accepted date: 23-11-2017

Please cite this article as: Laura Hikin, Paul R. Smith, Eleanor Ringland, Simon Hudson, Stephen R. Morley, Multiple fatalities in the North of England associated with synthetic fentanyl analogue exposure; detection and quantitation a case series from early 2017, Forensic Science International <https://doi.org/10.1016/j.forsciint.2017.11.036>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Multiple fatalities in the North of England associated with synthetic fentanyl analogue exposure; detection and quantitation a case series from early 2017

Laura Hikin 1, Paul R Smith 1, Eleanor Ringland 2, Simon Hudson 3 Stephen R Morley 1

1. Toxicology Unit, University Hospitals Leicester
2. Nottingham University Hospitals
3. LGC Fordham Cambridgeshire

### Highlights

- Synthetic fentanyls are almost always detected in cases where there is misuse of heroin
- Carfentanil is reported as being 10000 times more potent than morphine.
- Standard toxicology screens do not always detect the low concentrations of synthetic fentanyls
- Synthetic fentanyls must be tested for in drug deaths where other drug concentrations are low

### Abstract

**Background:** Synthetic fentanyl analogues are highly potent opioid drugs which have no pharmaceutical use in humans. We detected the synthetic fentanyl analogues; carfentanil, butyryl fentanyl, fluorobutyrylfentanyl, furanylfentanyl, and alfentanil as well as fentanyl itself in 25 cases in early 2017. There have been no previous reports of synthetic fentanyl deaths in the United Kingdom (UK)

**Methods:** Cases in which the history clearly stated drug use but where a post mortem blood morphine concentration was lower than would be expected to explain the sudden death, were referred for further analysis by high resolution accurate mass (HRAM) mass spectrometry.

**Results:** 25 post mortem cases in which synthetic fentanyl analogues were implicated in the cause of death were reported from January to May 2017. No cases were seen in June 2017. The age range was 21 to 54 years and 22 were male. There was a history of heroin use, or markers of heroin use on toxicology screening in 21/25 cases. Carfentanil and fentanyl were detected in 7 cases. Multiple synthetic fentanyl analogues were present in 13 cases, with the remaining 5 cases having only carfentanil present. Synthetic fentanyl analogues were detected in combination with other drugs in all cases. Significant concentrations of ethanol were detected in only 2 cases. The concentration range of carfentanil in blood was 90 to 4004 pg/mL. Of note, the 3 cases in which ante mortem carfentanil was quantified ranged from 21 to 98 pg/mL. In all cases, death was attributed to combined central nervous system depression.

Download English Version:

<https://daneshyari.com/en/article/6551377>

Download Persian Version:

<https://daneshyari.com/article/6551377>

[Daneshyari.com](https://daneshyari.com)