Analysing heroin samples as harm reduction intervention. Prevalence of adulteration with fentanyl derivatives

M. Roldan[1], M. Grifell[1,2,3], I. Gonzalez[1], J. Fuentes[1], M. Frings[1], M. Ventura[3], F. Fonseca[1,2], M. Torrens[1,2,4]

1. Institut de Neuropsiquiatria i Addiccions, Parc de Salut Mar, Barcelona, Spain.
2. Institut Hospital del Mar d'Investigacions Mèdiques-IMIM, Parc de Salut Mar, Barcelona, Spain.
3. Energy Control, Asociación Bienestar y Desarrollo, Barcelona, Spain.
4. Universitat Autònoma de Barcelona, Barcelona, Spain.
mroldanberengue@icloud.com

Poster Number: P.694

Introduction

The United States have declared an opioid epidemic due to the dramatic increase in deaths related to opioid overdose. Drug overdoses are one of the leading causes of preventable injury death (1). Recently, European states are increasingly concerned with the possibility of being also affected by the same phenomena. The rising in overdose deaths involving illicit opioid use can be partly attributed to the increased presence of fentanyl derivatives sold as heroin (2). As fentanyl derivatives are significantly more potent, consuming them unknowingly can easily lead to fatal overdose (3).

Objectives

To determine the proportion of fentanyl derivatives in samples delivered as heroin to Energy Control from 2014 to 2018. Energy Control is a Spanish harm-reduction non-governmental organization that offers free and anonymous drug checking services to Spanish recreational drug users and charges a fee for international ones.

Methods

Recreational drug samples were submitted to Energy Control via conventional mail or handled directly to the 4 Energy Control headquarters (Madrid, Catalonia, Balearic Islands and Andalucía) or in nightlife settings.
The composition of the samples was determined by Gas Chromatography–Mass Spectrometry and Liquid chromatography-Mass Spectrometry. A retrospective descriptive study of the Energy Control database was finally performed, selecting the samples delivered to Energy Control as heroin from 2014 to 2018.

Results

- A total of 329 samples from 23 different countries were analysed.
- There is an increasing tendency on the samples handled as heroin containing fentanyl derivatives over the years going from 0% in 2014 to 12.5% in 2018. (fig 1)
- The majority of the fentanyl compounds were ocfentanyl (60%) and fentanyl (20%). (fig 2)
- From the 329 samples analysed, fentanyl compounds were detected in 15 (4.5%), more than the half of them mixed with heroin and the rest had no heroin. Although the majority of the samples were submitted from Spain (66%), the presence of fentanyl was only 1.8%. Fentanyl compounds were found in higher rate in samples from North America (11.9%) and the rest of Europe (11.5%). (fig 3.)

Fig 1. Percentage of samples delivered as heroin containing fentanyl derivatives over the time

Fig 2. Compounds of the samples delivered as heroin

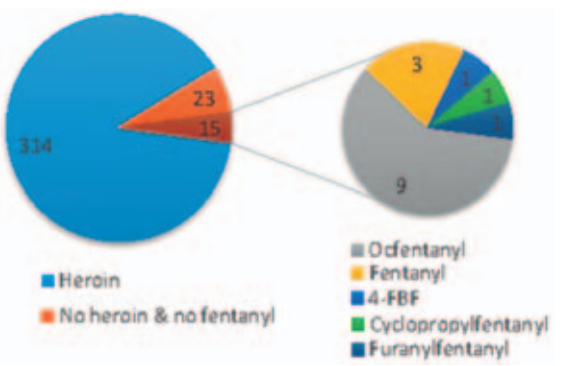
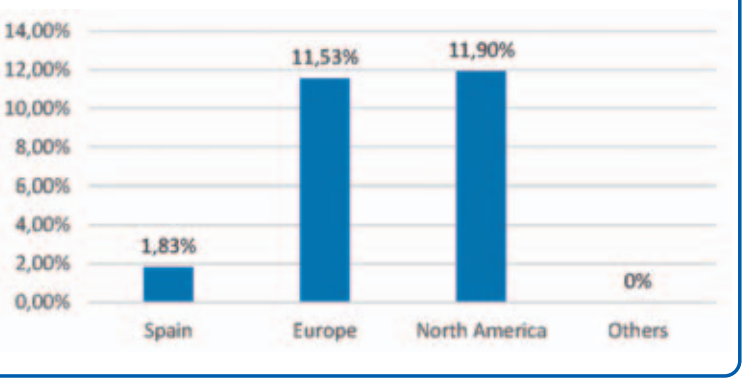


Fig 1. Percentage of samples delivered as heroin containing fentanyl derivatives by procedence



Conclusions

Results show a recent increase of fentanyl analogues in heroin samples, although the presence of fentanyl in Spain compared to the rest of Europe and USA is low.

Throughout Europe and other regions opioids are readily available, but people are not dying at comparable rates as those in the U.S.

Adulterating heroin with fentanyl compounds can be fatal for unsuspecting heroin users who ingest too much of the substance thinking that is heroin alone. One solution is to offer free drug testing services in order to inform the users about the composition of the drugs they intend to consume. The fact that Spain has less fentanyl derivatives sold as heroin than other European countries and North America could be explained by the presence of an established and free drug checking service.

The two main limitations of this study could be a selection bias of the samples delivered and the small number of samples containing fentanyl analogues that could over represent arbitrary variations.

References

[1] Compton W.M., Volkow N., Throckmorton DC, Lurie P (2013) Expanded Access to Opioid Overdose Intervention: Research, Practice, and Policy Needs. Annals of Internal Medicine.
[2] O'Donnell JK, Halpin J, Mattson CL, Goldberger BA, Gladden RM. Deaths Involving Fentanyl, Fentanyl Analogs, and U-47700 — 10 States, July–December 2016. MMWR Morb Mortal Wkly Rep 2017;66:1197–1202.
[3] FAQ's-Fentanyl and Fentanyl-Related Substances (s.f.). Drug Enforcement Administration, United States. Retrieved: https://www.dea.gov/druginfo/fentanyl-faq.shtml

Acknowledgments: No conflicts of interest were reported. The study has been partially supported by Red de Trastornos Adictivos-RTA RD16/0017/0010, funded by the ISCIII and the European Regional Development Fund (FEDER), and Suport Grups de Recerca AGAUR Gencat (2017 SGR 530)