Most (97%) were ≥18 years of age, mean age 53 years (SD+ 20), and 58% (1,414) males. Patient condition was described by EMS as "serious" for 82% (1,985), and critical for 17% (403). EMS recorded patient response to naloxone as "improved" for 15% (371) of patients, unchanged for 31% (748) and worsened 0.2% (4); there was no report of patient response to naloxone for 54% (1,304) of patients. Hospital-assigned diagnoses included drug poisoning 31.0% and opiate poisoning/dependence 17.5%. Of the patients receiving naloxone had Medicaid or similar insurance, and 7% were self-pay. These 2 forms of payment accounted for 30% ($11.1 million) of the annual $37.0 million in medical charges for all 2,427 patients. The table shows the odds of death for these patients was more closely associated with Time-to-HCF than Time-to-patient. The PC reported 2,529 exposures to 1 or more of the 33 opioid GCs during the 16 years (465 during the 24-month period of EMS data). The number of opioid exposures was the 33 opioid GCs during the 16 years (465 during the 24-month period of EMS data). Time-to-patient. The PC reported 2,529 exposures to 1 or more of the 33 opioid GCs during the 16 years (465 during the 24-month period of EMS data). The number of opioid exposures was the 33 opioid GCs during the 16 years (465 during the 24-month period of EMS data). Time-to-HCF showed a statistically significant relation to mortality. While Time-to-patient showed an increase, it was not statistically significant. Most of the patients receiving naloxone, however, were not finally diagnosed as opioid poisoned. Thus this experience does not argue strongly against the use of bystander naloxone.

Methods: All presentations of ibuprofen or ibuprofen-codeine overdoses to a tertiary toxicology service (1987-2013) were extracted from a prospective database and reviewed. The following data was extracted: demographics, complications (coma [GCS <9], hypotension [systolic BP <90mmHg], seizure), treatments and outcomes (length of stay [LOS], intensive care [ICU] admission, death).

Results: There were 745 ibuprofen ingestions, 594 ibuprofen, 142 ibuprofen-codeine and one with both. The commonest co-ingestants were paracetamol, alcohol, benzodiazepines, selective serotonin reuptake inhibitors and atypical antipsychotics (quetiapine).

Conclusions: Ibufrofen and ibuprofen-codeine combination alone overdoses cause only minor effects in overdose, with no major complications or interventions required. Ibuprofen alone overdoses represents a younger or more female group compared to deliberate self-poisoning in general. In the majority of cases other drugs were also ingested and the other drugs appeared to result in a longer LOS and greater requirement for critical care services.

94. Ibuprofen overdose: a common but minimally toxic poisoning

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Objectives: Ibuprofen is a common poisoning due to its ready availability as an analgesic. Like most non-steroidal anti-inflammatory drugs it does not appear to be associated with major toxicity but there are reports of severe toxicity with larger doses. This study aimed to investigate the epidemiology and clinical effects in a large series of ibuprofen overdoses.

Methods: All presentations of ibuprofen or ibuprofen-codeine overdoses to a tertiary toxicology service (1987-2013) were extracted from a prospective database and reviewed. The following data was extracted: demographics, complications (coma [GCS <9], hypotension [systolic BP <90mmHg], seizure), treatments and outcomes (length of stay [LOS], intensive care [ICU] admission, death).

Results: There were 745 ibuprofen ingestions, 594 ibuprofen, 142 ibuprofen-codeine and one with both. The commonest co-ingestants were paracetamol, alcohol, benzodiazepines, selective serotonin reuptake inhibitors and atypical antipsychotics (quetiapine).

Conclusions: Ibufrofen and ibuprofen-codeine combination alone overdoses cause only minor effects in overdose, with no major complications or interventions required. Ibuprofen alone overdoses represents a younger or more female group compared to deliberate self-poisoning in general. In the majority of cases other drugs were also ingested and the other drugs appeared to result in a longer LOS and greater requirement for critical care services.

KEYWORDS Ibuprofen; overdose; epidemiology

95. International Perspective on Prescription Benzodiazepine Exposures Reported by Poison Centres in the Global Toxicsurveillance Network


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Objectives: To describe characteristics of exposures to prescription benzodiazepines reported by Global Toxicsurveillance Network poison centres (PCs) in Europe.

Methods: Human benzodiazepine exposures reported in 2014 by PCs in France (Paris), Germany (Göttingen), Italy (Milan), Lithuania,
96. A Characterization of Fentanyl Exposures Reported to the National Poison Data System from 2000-2015

Michael Marlin\textsuperscript{a}, Christopher Hoyte\textsuperscript{b} and Shireen Banerji\textsuperscript{c}

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\textbf{Background:} In the US, fentanyl abuse is recently reemerging. Medical diversion and clandestine synthesis has made fentanyl increasingly available to the public for abuse. Due to its potency, fentanyl is becoming a significant cause of morbidity and mortality. Fentanyl is also used in combination or as an adulterant with illicit drugs such as heroin and cocaine with deaths reported. It is unclear whether fentanyl abused as a sole agent or in combination with other illicit drugs increases the likelihood of a major adverse outcome. We sought to characterize fentanyl exposures reported to the National Poison Data System (NPDS) to determine which factors lead to major outcomes.

\textbf{Methods:} We queried NPDS for all closed, human exposures to fentanyl using AAPCC Generic Code 0200628 within our 5-state regional poison center (RPC). Cases without a known outcome were excluded. Descriptive statistics for age, gender, level of health care facility (HCF) care, presence of other drugs (categorized by drug class), route of administration, medical outcome, and reason for exposure were performed. Findings are summarized in Table 1. The majority of exposures involved fentanyl transdermal systems; 105 of these cases were patch ingestions. The majority of exposures involved minor outcomes (n = 78, 47.6%), followed by moderate (n = 65,39.6%), and major (n = 20,12.2%). There was one reported death. There were 103 intentional exposures, including 33 suspected suicide attempts. There were 49 cases of unintentional exposures, including adverse drug events. Of these, 33 (67.3%) resulted in only minor outcomes. Co-ingestants are shown in Table 2.

\textbf{Conclusions:} Cases involving parenteral exposures were surprisingly uncommon and may reflect regional trends. Historically, fentanyl has been used as an adulterant to heroin; however, this combination was not reported. As shown in Table 2, the percentage of concomitant exposures to opioids or amphetamines was high amongst exposures resulting in major outcomes and these combinations may represent increased risk of toxicity. Intentional exposures resulted in a high percentage of moderate or major

\begin{table}
\centering
\begin{tabular}{llllll}
\hline
\textbf{Route of administration} & \textbf{Ingestion} & \textbf{Dermal} & \textbf{Inhalation/Intranasal} & \textbf{Parenteral} \\ 
\hline
\textbf{Occurrences} & 105 & 54 & 3 & 10 & \\
\hline
\end{tabular}
\caption{Route of administration Occurrences}
\end{table}

\begin{table}
\centering
\begin{tabular}{llllll}
\hline
\textbf{Co-ingestants} & \textbf{Benzodiazepines} & \textbf{Opioids} & \textbf{Cocaine} & \textbf{Amphetamines} & \textbf{Total} \\ 
\hline
\textbf{Major outcomes} & 4 & 6 & 0 & 2 & 25 \\
\textbf{Moderate outcomes} & 14 & 13 & 1 & 2 & 30 \\
\textbf{Minor outcomes} & 7 & 11 & 0 & 0 & 1 \\
\textbf{Total} & 25 & 30 & 1 & 4 & \\
\hline
\end{tabular}
\caption{Co-ingestants Occurrences}
\end{table}