

these antidotes for a one hour supply. However, only two PHs had sufficient quantity for eight hours, as defined by consensus guidelines. For the five FECs, two had eleven of thirteen antidotes, two had six, and one had four.

Crotalidae Polyvalent Immune Fab, physostigmine salicylate, and pralidoxime chloride were consistently understocked by FECs and PHs at both 1 hour and 8 hour stocking recommendations.

Conclusion: Previous studies have shown hospitals with emergency rooms are inadequately stocked with antidotes. Our study demonstrates that FECs are even less prepared, based on one hour requirements.

Keywords: Antidote, Freestanding emergency center, Hospital preparedness

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189. Persistent hypokalemia despite aggressive potassium replacement following a hydroxychloroquine overdose

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Background: Hydroxychloroquine overdoses are rare and management is extrapolated from chloroquine toxicity. We report a case of severe hydroxychloroquine toxicity with refractory hypokalemia.

Case Report: A 22 year old female with a past medical history of Sjogren's syndrome, fibromyalgia, and bipolar disorder was admitted for 72 hours after ingesting approximately hydroxychloroquine 6 g, tramadol 1.5 g, and meloxicam 450 mg. Upon hospital arrival, She was unresponsive and had a seizure that responded to lorazepam. Her blood pressure and heart rate decreased from to 130/70 to 88/56 mmHg and 148 to 88 bpm, respectively. After intubation, gastric lavage was performed and she was sedated on midazolam. Significant initial laboratory studies include serum hydroxychloroquine 2000 ng/mL (therapeutic range not established but typically < 1000 ng/mL), lactate > 10 mmol/L, bicarbonate 10 mEq/L, and potassium 3.0 mEq/L. Electrocardiogram showed sinus tachycardia, QRS 116 msec, and QTc 399 msec. Her vital signs improved and QRS narrowed after a sodium bicarbonate bolus, after which a continuous infusion was started. Over the next 12 hours, her potassium ranged between 2.5 and 2.7 mEq/L and her QTc prolonged to 551 msec despite receiving a total of KCl 280 mEq IV. Her potassium normalized at 12.5 hours but peaked 6.5 hours later to 5.6 mEq/L. The hyperkalemia resolved spontaneously and the remainder of her hospitalization was uncomplicated.

Case Discussion: Our patient presented with signs and symptoms consistent with severe hydroxychloroquine toxicity. A toxic serum hydroxychloroquine concentration has not been well established since fatalities have occurred at levels as low as 640 ng/mL and survival with concentrations as high as 26,000 ng/mL. Inability to correlate toxicity with serum levels has prompted clinicians to seek surrogate markers, including hypokalemia, for severe toxicity. Previous case reports describe 3 patients who each survived cardiac arrest after ingesting hydroxychloroquine 20 g and having serum levels of 9870 ng/mL, 13,800 ng/mL, and 26,000 ng/mL, respectively. All 3 patients received sodium bicarbonate and aggressive potassium replacement with total KCl requirements

between 140 and 220 mEq. Our patient received more KCl than the highest reported in the aforementioned cases despite a markedly lower serum concentration, which might have drawn before its peak. Hyperkalemia resolved on its own without complications in all patients.

Conclusions: Hypokalemia may serve as a surrogate marker for severe hydroxychloroquine toxicity. Aggressive potassium replacement in these patients is controversial but should be considered for severe toxicity.

Keywords: hydroxychloroquine, Overdose, hypokalemia

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190. Rates of Suicide Involving Prescription Opioids Before, During and After the Great Recession

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Background: Little is known about the rates of use of prescription (Rx) opioids with suicidal intent surrounding the Great Recession, the steep economic decline during the late 2000s. This study aims to describe these trends in the US before, during and after the Great Recession.

Methods: Data were used from the Researched Abuse, Diversion and Addiction-Related Surveillance (RADARS[®]) System Poison Center Program, which collects and reviews human exposure cases from participating US poison centers, to assess suspected suicide trends involving Rx opioids. Cases classified as intentional suspected suicide involving buprenorphine, fentanyl, hydrocodone, hydromorphone, methadone, morphine, oxycodone or tramadol were used. Guided by the Bureau of Labor Statistics, the periods were defined as Pre-Recession (Pre) 1Q06 – 4Q07; Active Recession (Active) 1Q08 – 2Q09; and Post Recession (Post) 3Q09 – 4Q14. Population rates were calculated in each quarter by dividing the total number of cases by the covered population. The population was calculated by interpolating and extrapolating the 2000 and 2010 US Censuses. Spline Poisson regression was used to estimate the average quarterly change in the population rate in each of the periods. Pre and Post average quarterly rate changes were compared to the Active average quarterly rate change.

Results: The average quarterly change in rate of use of Rx opioids with suspected suicidal intent was 5.69% in the Pre period (p-value < 0.001), 2.64% in the Active period (p-value < 0.001), and -0.34% in the Post period (p-value = 0.053). The Pre average quarterly change was significantly higher than the Active average quarterly change (p-value = 0.034). The Post average quarterly change was significantly lower than the Active average quarterly change (p-value < 0.001). The rate of increase was greatest during the Pre period. During the Active period, the population

Period	Average Quarterly Change % (95% CI)	Average Quarterly Change p-value	Difference In Slopes Compared to Active p-value
Pre	5.69 (4.01, 7.41)	<.001	0.034
Active	2.64 (1.22, 4.08)	<.001	-
Post	-0.34 (-0.69, 0.01)	0.053	<.001

rate continued to increase, but less dramatically. During the Post period, the population rate decreased.

Conclusion: Although the Active period shows an increase in suspected suicide rates involving Rx opioids, results indicate that the Pre period experienced the greatest quarterly increase in rates compared to the other two periods examined. There appeared to be a decline in rates during the Post period. Examination into the demographics of the Pre period data is recommended to help better understand who should be targeted when intervention is needed.

Keywords: prescription opioids, exposures, suicide

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191. A Prevalence Study of Illicit Drug and Alcohol Use in Pregnant Women

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Background: The use of illicit drugs and alcohol during pregnancy has been linked to pregnancy complications and adverse fetal outcomes. Identification of current illicit drug and alcohol use rates among pregnant women could help healthcare providers target intervention strategies. The purpose of this study was to assess prevalence rates of illicit drug and alcohol use among pregnant women as identified by definitive quantitative lab Results.

Methods: This was a prospective, multi-site study conducted with convenience sampling over 14 days at a tertiary care University hospital serving an urban population. Included were pregnant women at any stage of pregnancy who presented to one of two obstetric ambulatory office sites as part of their routine obstetric care. Excluded were non-pregnant patients or patients who provided more than one urine sample during the study period. Included patients provided a urine sample as part of routine care. Urine samples were de-identified at the time of study sample collection, and no patient identifiers were recorded. Mass spectrometry analysis of urine was performed with quantitative testing done for a pre-selected sample of illicit drugs and alcohol. Positive urinalysis results were grouped by drug or drug category. Descriptive statistics were performed.

Results: Urine samples were collected from 317 patients. 22 patients were excluded. A total of 19/295 (6.4%) patients were in their first trimester, 89/295 (30.2%) patients were in their second trimester, and 187/295 (63.4%) patients were in their third trimester. Urinalysis results are listed in Table 1.

Conclusions: In this anonymous drug screening study of pregnant patients, marijuana, opioid analgesics and ethanol were

Table 1. Drug or drug category detected on urinalysis listed by trimester.

Drug or Drug category	All Trimester Use number (%)	First Trimester Use number (%)	Second Trimester Use number (%)	Third Trimester Use number (%)
Marijuana	12 (4)	2 (1)	1 (1)	9 (5)
Cocaine	1 (<1)	0	1 (1)	0
Ethanol	18 (6)	2 (1)	3 (3)	13 (7)
Opioids	13 (4)	0	2 (2)	11 (6)
Sedative Hypnotics	3 (1)	0	1 (1)	2 (1)

most frequently detected in urine. Marijuana has previously been described as one of the most commonly used illicit drugs during pregnancy, and our data continues to reflect its use in pregnancy. The opioid use rates may mirror overall general population opioid use increases. The rates of ethanol use are of interest considering the public health warnings regarding ethanol use during pregnancy. Prevalence rates were highest during the third trimester, which may reflect our patient trimester distribution or may reflect a patient-perceived increase in drug use safety as pregnancy nears term.

Keywords: Ethanol, Opioid, Drug of abuse

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192. Dermal Burns Due to Dermal Exposures Reported to Poison Centers

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Background: In 2013, the second most common exposure route among all exposures reported to US poison centers was dermal (7% of total). One potential injury to result from dermal exposures is dermal burns. The purpose of this study was to describe dermal exposures that resulted in dermal burns reported to poison centers and to compare the different degrees of burn severity.

Methods: Cases were dermal exposures reported to a statewide poison center system during 2000–2014 where a clinical effect of 2nd-3rd degree (23D) or superficial (SUP) burns was reported. Exposures not followed to a final outcome were included. The distribution of cases for each burn type was determined for selected characteristics. Comparisons were made by calculating the rate ratio (RR) of 23D to SUP cases and 95% confidence interval (CI).

Result: Of 8,024 total cases, 2,426 (30%) had 23D and 5,598 (70%) had SUP burns. The most common substance categories involved in the exposures were chemicals (41% 23D vs 29% SUP), household cleaning substances (16% 23D vs 20% SUP), hydrocarbons (8% 23D vs 9% SUP), and cosmetics/personal care products (5% 23D vs 8% SUP). Patients 20 years or older accounted for 82% of 23D and 70% of SUP cases (RR 1.16, 95% CI 1.13-1.19); 72% of 23D and 59% of SUP patients were male (RR 1.22, 95% CI 1.18-1.26). 93% of 23D and 92% SUP exposures were unintentional (RR 1.01, 95% CI 0.99-1.02); 2% of 23D and 5% SUP exposures were adverse reactions (RR 0.54, 95% CI 0.41-0.71). The exposure occurred in the patient's own residence in 47% of 23D and 63% of SUP cases (RR 0.75, 95% CI 0.71-0.78) and in the workplace in 42% of 23D and 26% of SUP exposures (RR 1.64, 95% CI 1.54-1.75). The management site was managed on site (11% 23D vs 48% SUP, RR 0.22, 95% CI 0.20-0.25), already at/en route to a healthcare facility when the poison center was contacted (61% 23D vs 37% SUP, RR 1.66, 95% CI 1.58-1.74), and referred to a healthcare facility (25% 23D vs 13% SUP, RR 1.93, 95% CI 1.75-2.13). Serious outcomes were reported in 98% of 23D and 25% of SUP cases (RR 3.86, 95% CI 3.68-4.04).

Discussion: 23D exposures were more likely than SUP exposures to involve adults and males, involve chemicals, and occur at the workplace. Since 23D exposures were more likely to be serious, they were more likely to be managed at a healthcare facility.

Keywords: Poison center, Burns, Dermal exposure

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