

## 106. Severe Adverse Events Associated with Intentional Abuse via an Unintended Route for Fentanyl Patches Compared to Other Schedule II Opioids

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**Background:** Fentanyl transdermal patches are long-acting opioid products indicated for chronic pain. The extended-release (ER) nature may make them appealing for intentional abuse. Abuse via unintended routes may also increase the likelihood of a severe adverse event (SAE). The association of SAEs between fentanyl patches and other schedule II opioids in intentional abuse exposures via an unintended route was examined.

**Methods:** Data from the Researched Abuse, Diversion, and Addiction-Related Surveillance (RADARS<sup>®</sup>) System Poison Center Program collected between 1Q2010 to 4Q2015 were analyzed. Intentional abuse exposures via an unintended route of administration for fentanyl patches and other Schedule II opioids (oxycodone, hydromorphone, morphine, oxymorphone, tramadol, tapentadol) were examined. Schedule II opioids were restricted to tablets/capsules and stratified by immediate-release (IR) and ER. Unintended route was defined as use via any route other than dermal for fentanyl patches and any route other than swallowed whole for other Schedule II opioids. SAEs were defined as exposures that resulted in a major medical outcome, death, admission to a critical care unit, non-critical care unit, or psychiatric facility. Multiple logistic regression adjusted for age was used to determine the association of SAEs among fentanyl patches and Schedule II IR and ER opioids via unintended route.

**Results:** There were 10,404 intentional abuse exposures to Schedule II opioids that had a known route and age. Of these, there were 1,850 fentanyl patch exposures and the majority occurred via an unintended route (88%). Of the 2,641 ER exposures, 37% involved an unintended route. Seventeen percent of the 5,913 IR reported an unintended route. After adjusting for the effects of age, there was a significant increase in the odds of SAE for those using a fentanyl patch via an unintended route compared to those using an IR or ER opioids via an unintended route (Table 1 - Adjusted Odds Ratio (AOR) for SAE among different opioid groups and age).

**Conclusions:** Abuse of fentanyl most commonly occurred via an unintended route while abuse of Schedule II IR and ER opioids most commonly occurred via the intended route. Those who abused fentanyl patches via an unintended route were more likely to experience a SAE than those who abused ER or IR tablets/capsules via unintended routes. Abuse deterrent formulations should be explored to reduce harm related to the abuse of fentanyl patches.

**KEYWORDS** Opioids; RADARS(R) System; fentanyl exposures

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	AOR (95% CI)	p-value
Drug group		
Fentanyl patch/ER opioids	1.66 (1.41, 1.96)	<0.001
Fentanyl patch/IR opioids	1.93 (1.63, 2.28)	<0.001
Age	0.99 (0.98,0.99)	<0.001

## 107. Cooking with Cannabis: A Case Report of Severe Toxicity Following the Use of Cannabutter

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**Background:** Tetrahydrocannabinol (THC) is generally considered to be the primary active substance in cannabis. Along with other psychoactive cannabinoids, THC is a hydrophobic oil, meaning it is insoluble in water but soluble in lipids and alcohol. "Cannabutter" is a popular butter-based solution which has been infused with cannabinoids. Cannabis edibles have become more available in recent years as the medical marijuana market has matured. We report three cases of accidental THC toxicity by ingestion of cannabutter used in home cooking.

**Case Report:** A 34 year old female and two children (13-year old male and 14-year old female) were brought to the emergency department (ED) by friends for mental status changes. Symptoms began approximately 2-3 hours after ingestion of a cake made with cannabutter, and included near-syncope, confusion, difficulty ambulating, blurred vision, hallucinations and myoclonic twitching. Urine drug screens in all patients was positive for cannabinoids. All three patients were admitted to the hospital for detoxification; one adolescent spent the day in pediatric intensive care for blood pressure monitoring. All responded to supportive treatment (IV fluids, lorazepam). The patients ultimately had a full return to neurologic baseline and stabilization of vitals within 36 hours and were discharged from the hospital. Child protective services were notified.

**Case Discussion:** This case illustrates the potential danger associated with recreational edible marijuana use. Systemic THC levels and psychoactive effects after ingestion are highly variable because of differences in bioavailability, rate of gastrointestinal absorption, and metabolic first-pass effect whereby an orally administered drug is partially metabolized (principally in the liver) before reaching systemic distribution. Clinical signs are variable and depend on both the absorbed quantity and duration of exposure. Management of patients intoxicated by cannabinoids is supportive with careful attention to the airway and breathing in children. Safe cannabis detoxification typically requires 24 hours, but sometimes longer for patients with unstable vital signs or persistent psychosis.

**Conclusions:** Edibles have become more available in recent years as the marijuana market has matured. With key differences in dose, onset, duration and metabolism, oral cannabis presents a considerable risk of accidental overdoses, especially in inexperienced users. Clinical signs are variable and depend on both the absorbed quantity and duration of exposure. Children with marijuana exposure are much more likely to demonstrate severe or life-threatening toxicity. Because medical cannabis is recommended for specific health conditions, regulation and quality assurance are needed.

**KEYWORDS** Edible Cannabis; THC; Drug of Abuse

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