EM CASE OF THE WEEK.
BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE

BROWARD HEALTH
Care Warriors

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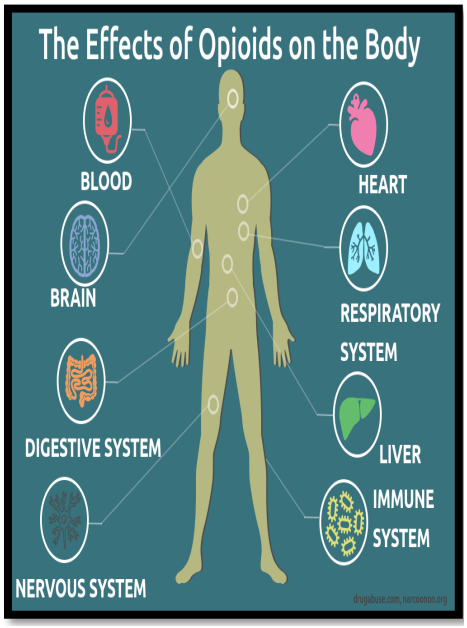
Opioid Overdose & Withdrawal

A 35-year-old female with no known medical history was brought to the emergency department with altered mental status. Upon arrival, the patient was unresponsive and cyanotic. The pulse oximetry was 65% on room air. The remainder of the vital signs showed a heart rate of 141 beats/min, BP 117/65, and 98 F. The physical exam revealed pinpoint pupils and a shallow ventilatory effort.

The patient was subsequently administered 2 mg of naloxone (Narcan) IV. The patient became more alert and her respiratory effort improved markedly. Minutes after receiving naloxone, the patient vomited copiously. Lung auscultation also revealed diffuse rales, most prominent at the right lung base. Furthermore, the patient became hypotensive with systolic BP readings of 70 mmHg, tachycardic, and hypoxic (with a 90% saturation on a nonrebreather mask). A chest x-ray revealed pulmonary edema that was then confirmed by a CT scan. Pt was admitted to the ICU.[1]

What are the side-effects commonly encountered with opioids? *(More than 1 answer possible)*

1. Increased respiratory rate
2. Nausea & vomiting
3. Diarrhea
4. Dilated pupils
5. Depression of airway reflexes



OPIOIDS include most prescription analgesics as well as products derived from the poppy plant. While opioids are normally prescribed for pain relief, to diminish cough, or relieve diarrhea, these drugs can also produce feelings of euphoria, tranquility, and sedation. The misuse of prescription opioids can lead to dependence and addiction.[2]

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

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(The correct answer is 2 & 5).

The Opioid Epidemic

According to the Centers for Disease Control (CDC), an estimated 418,313 hospitalizations for nonfatal, unintentional drug poisoning occurred in 2014. Opioid poisoning alone accounted for 20% of those ED visits. More specifically, heroin was involved in 58% of opioid ED visits in 2014.[3]

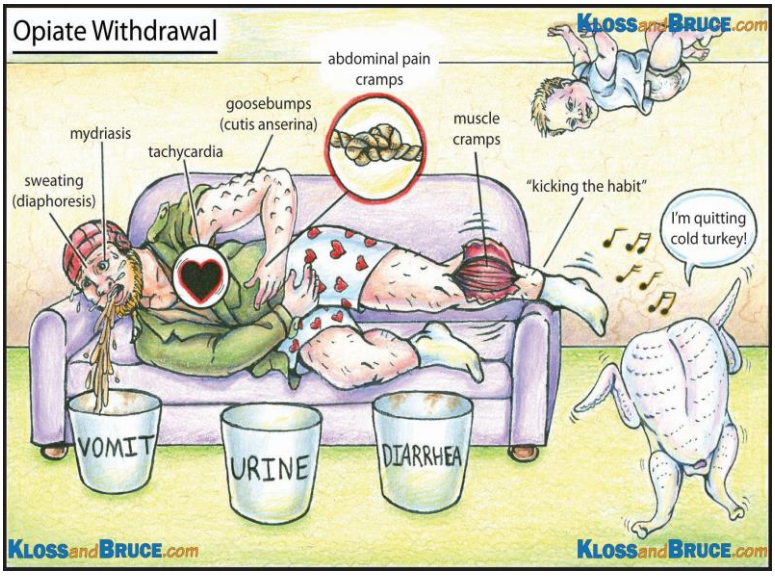
According to the American Society of Addiction Medicine, four out of five people who try heroin today started with prescription painkillers. Today more Americans are addicted to heroin & die from it than ever before. Drug overdoses killed more people last year than guns or car accidents and continue to take more lives than the HIV epidemic at its peak.[4] In Florida, the rate of opioid-related overdose deaths has increased dramatically since the 1990s. This necessitates an enhanced understanding of addiction, opioid toxicity and withdrawal treatment among medical professionals across the United States.

Clinical Features of Opioid Toxicity

The classic signs of opioid toxicity include: depressed mental status, decreased respiratory rate, decreased bowel sounds, and constricted pupils. Note that other toxicology can be confused with an opioid overdose. Clonidine, ethanol, and sedative-hypnotics toxicity can be considered in the differential diagnosis. For example, clonidine toxicity can cause bradycardia, hypotension, and clonus. Ethanol intoxication rarely leads to miosis or changes in bowel sounds, and sedative-hypnotics cause much less respiratory depression than the opioids.[5]

Management

- Initial management of the intoxicated patient should focus on supporting the patient's airway and breathing.
- Naloxone is a short-acting opioid antagonist with a half-life of ~60 minutes used to reverse ventilatory suppression that is often seen in cases of opioid toxicity.[2]



https://emergencymedicinecases.com/opioid-withdrawal/

Clinical Features of Opioid Withdrawal Syndrome

Opioid-dependent individuals who go more than a few hours without opioids can develop opioid withdrawal syndrome (OWS). The effects of OWS include nausea, vomiting, abdominal cramping, piloerection, rhinorrhea, tachycardia, myalgias, & restlessness. OWS can also be precipitated by giving naloxone to opioid-dependent patients. Symptoms of withdrawal in this scenario begin almost immediately. Findings of naloxone-precipitated OWS can also include seizures, pulmonary edema, & cardiac arrhythmias.[1]

A sudden catecholamine surge explains the cardiovascular dysfunction and pulmonary edema seen in the most extreme cases of OWS precipitated by an opioid-antagonist.

The safest initial dose of naloxone in the hospital setting is 0.04 mg IV or 0.08 mg IM.[1] For most patients in the emergency department, it is difficult to ascertain the depth of opioid dependency. In some cases, the safest approach to administer naloxone may be to start low and titrate up slowly. It is important to note that this may not be realistic in unstable patients. Yet, it is worthwhile remembering that there can be adverse effects to administering naloxone to opioid-dependent patients.

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The Clinical Opioid Withdrawal Scale (COWS)

This is an 11-item scale designed to assess the level of physical dependence on opioids and the stage or severity of opiate withdrawal. Each of the 11 listed symptoms are given a score between from 0 to 5. The patient's score is then tallied and this is used to assist in devising the appropriate withdrawal treatment plan.

The 11 signs and symptoms assessed are: resting pulse rate, GI upset, sweating, tremors, restlessness, yawning, pupil size, anxiety/irritability, arthralgias, piloerection, rhinorrhea/lacrimation.

Managing Opioid Withdrawal Symptoms[2]

Medication†	Target Symptoms
α_2-Adrenergic agonist	
Clonidine (Catapres)§	Increased pulse rate and blood pressure, anxiety, chills, piloerection
Clonidine patch	Increased pulse rate and blood pressure, anxiety, chills, piloerection
Benzodiazepine	
Temazepam (Restoril)	Insomnia
Diazepam (Valium)	Anxiety
Gut-acting opioid: loperamide (Imodium)	Diarrhea
NSAID: naproxen (Aleve)	Bone, muscle, joint, or other pain
Antiemetic	
Prochlorperazine (Compazine)	Nausea and vomiting
Ondansetron (Zofran)	Nausea and vomiting

Take Home Points

- Most adults presenting with opioid toxicity can be managed in the ED without the need for hospitalization.
- Naloxone is a non-selective, short-acting opioid antagonist used to reverse ventilatory depression in patients whose clinical findings are likely due to an opioid overdose.
- Clinicians must be wary of "overshooting" the appropriate dose of naloxone in an opioid-dependent individual since life-threatening withdrawal may ensue.
- Withdrawal secondary to administration of an opioid antagonist should not be treated with opioids. Symptoms of withdrawal in this case should be managed expectantly.
- It is important to gauge the extent of a patient's opioid use to improve the safe use of naloxone in the Emergency Department.

ABOUT THE AUTHOR

This month's case was written by Paula Vasquez. Paula is a 4th year medical student from NSU-COM. She did her emergency medicine rotation at Broward Health Medical Center in October 2018. Paula plans on pursuing a career in Family Medicine after graduation.

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