AN OVERVIEW OF THE PRESENTATION AND TREATMENT OF OPIOID OVERDOSE

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OBJECTIVES

• Review and discuss the epidemiology of opioid overdose in the United States
• Explain the pharmacology of opioids and how these aspects contribute and affect the presentation of opioid overdose
• Identify the signs, symptoms, and risks factors for opioid overdose and its associated complications
• Explain the pharmacology, pharmacokinetics and available formulations of naloxone
• Demonstrate the use of a naloxone delivery device in the event of an opioid overdose
AUDIENCE QUESTION

Why is it important for pharmacists to be educated on opioid overdose?
"Pop a Perky just to start up (pop it, pot it pop it)
Pop two cups of purple just to warm up (two cups, drank)"
"Auntie Greta serve ya perkys"
*Migos-Slippery*

"Poppin’ Pills is all we know"
*Travis Scott-Antidote*

"I got Xanax, Percocet, Promethazine with Codeine"
*Lil Wayne ft. 2 Chainz- Rich*
CELEBRITIES WHO HAVE DIED FROM PAINKILLERS AND HEROIN

Janis Joplin
- Heroin Overdose
- Year: 1970
- Age: 27

Elvis Presley
- Multiple Rx drugs (Codeine)
- Year: 1977
- Age: 42

Heath Ledger
- Oxycodone, hydrocodone, alprazolam and diazepam
- Year: 2008
- Age: 28

Philip Seymour Hoffman
- Heroin & BZDs
- Year: 2014
- Age: 46

Prince
- Fentanyl
- Year: 2016
- Age: 57

Cnn: Celebrities who died from painkillers and heroin
THE EPIDEMIOLOGY
Drug overdose is the leading cause of accidental deaths in the United States, being greater than car accidents and homicide

- The majority of these deaths involve an opioid (6 out of 10)
- From 2000-2015, more than half a million people died from drug overdoses
- 91 Americans die every day from an opioid overdose

Is this epidemic only showing an increase in prescription opioids?
One recent study found that 4 in 5 new heroin users started out misusing prescription painkillers.

The number of Americans who have used heroin in the past year has steadily increased from 2002 to 2014.

As a consequence, the rate of heroin overdose nearly quadrupled from 2000 to 2013.
OPIOID PHARMACOLOGY

- Opioids exerts their action by binding to 3 opioid receptors:
  - Mu
  - Delta
  - Kappa

- Opioids have a narrow therapeutic index
  - With respiratory depression as the most serious toxic effect that can lead to fatality

Opioids cause respiratory depression via activation of the mu-receptor
RISK FACTORS FOR OPIOID OVERDOSE

• Taking more than prescribed
• Taking high dose opioids and long acting opioids
  • 100 mg or more daily (morphine equivalent)
• Comorbid compromising medical conditions
  • COPD
  • Sleep Apnea
  • Severe Pulmonary Conditions
• Taking the opioid with interacting medications
  • Benzodiazepines
  • Alcohol
  • Other opioids
• Loss of Tolerance
  • After hospitalization/rehabilitation/jail
  • Medication Non-Adherence
SIGNS AND SYMPTOMS OF OPIOID OVERDOSE

- Loss of consciousness/ The patient cannot be awakened from sleep or heavy nodding
- Blue fingernails or lips /pale skin
- Very slow or no breathing
- Very slow or no heartbeat
- Vomiting/gurgling noises
How did Jesse’s girlfriend die on Breaking Bad?

a) From breast cancer
b) From an opioid overdose
c) From a car accident
d) From a heart attack
NALOXONE
WHY NALOXONE?

Studies are proving that naloxone distribution is effective in decreasing the amount of overdose related deaths.

A 24-46% decrease in opioid overdose was observed in communities that distributed naloxone devices.\(^\text{17}\)

Naloxone distribution would prevent 6.5% of all overdose deaths for every 20% of heroin users reached by a distribution program.\(^\text{18}\)

Prevention of 2,000 overdose deaths in a population of 200,000 heroin users.\(^\text{18}\)


TREATING OPIOID OVERDOSE

- Opioid overdoses, *if caught on time*, can be treated with a medication called **Naloxone (Narcan®)**
- Naloxone is an antidote for opioid overdose
  - It knocks off the offending opioid and blocks the receptor
  - Reverses respiratory depression
NALOXONE (NARCAN®)

- It possesses a **strong affinity** for the mu-opioid receptor
- Displaces the offending opioid and reversing it’s central and peripheral effects
- Has a short half-life and the duration ranges from 20-90 minutes

**Routes of Administration:**
- **Intravenous** (preferred)-
  - ~2 minutes
- **Intramuscular**
  - 2 to 5 minutes
- **Subcutaneous**
  - 5 minutes
- **Intranasal**
  - 8 to 13 minutes
Naloxone Delivery Devices

Naloxone Intranasal Rescue Kit
- Non-FDA Approved
- Assembly Required

Naloxone Auto-injector (Evzio)
- FDA Approved
- Provides Voice Instructions
- No Assembly Required

Narcan Nasal Spray
- FDA Approved
- No Assembly Required

Each kit comes with a total of 2 doses
<table>
<thead>
<tr>
<th>NALOXONE DELIVERY DEVICES</th>
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<tbody>
<tr>
<td><strong>Evzio (Auto-Injector)</strong></td>
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<tr>
<td>FDA Approved</td>
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<tr>
<td>Intramuscular or Subcutaneous Administration</td>
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<tr>
<td>90.5% successful use without training &amp; 100% successful use with training</td>
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<tr>
<td><strong>Narcan Nasal Spray</strong></td>
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<tr>
<td><strong>Intranasal Naloxone Rescue Kit</strong></td>
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<tr>
<td>Not FDA Approved</td>
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<tr>
<td>Intranasal</td>
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<tr>
<td>0% successful use without training &amp; 57.1% successful use with training</td>
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<tr>
<td>Device</td>
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<tr>
<td>Evzio®</td>
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<td>Narcan® Nasal Spray</td>
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<tr>
<td>Intranasal Naloxone Kit</td>
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RESPONSE TO OPIOID OVERDOSE

1. Lightly shake the person and yell their name
2. Give 1st dose of Naloxone
3. Call 911 - ALWAYS
4. Open the airways and give 1 breath every 5 seconds
   • Consider naloxone again if:
     • The patient does not start breathing in 2-3 minutes
     • The patient responds to the first dose and then stops breathing again
5. Place the patient on his/her side to prevent choking
NALOXONE AUTO-INJECTOR: EVZIO

1. Pull the auto-injector from the outer case
2. Pull firmly to remove the red safety guard
3. Place the black end against the middle of the outer thigh, through clothing if necessary, then press firmly and hold in place for 5 seconds
4. If no reaction in 2-3 minutes or if the person stops breathing again, give the second dose
NALOXONE NASAL SPRAY: NARCAN

1. Remove naloxone nasal spray from the box & peel back the tab with the circle to open the naloxone nasal spray.

2. Hold the naloxone nasal spray with thumb on the bottom of the plunger and your first and middle finger on either side of the nozzle.

3. Do NOT PRIME OR TEST the spray device. Tilt the person’s head back and provide support under the neck with your hand. Gently insert the tip of the nozzle into one nostril until your fingers on either side of the nozzle are against the bottom of the person’s nose.

4. Press the plunger firmly to give the entire dose of naloxone nasal spray. Remove the naloxone nasal spray from the nostril after giving the dose.

5. If no reaction in 2-3 minutes or if the person stops breathing again, give the second dose of naloxone in the other nostril using a new naloxone spray.
DEMONSTRATION TIME!!!!
NALOXONE ADVERSE REACTIONS

When naloxone is given, the patient may experience precipitated opioid withdrawal

- Nausea/vomiting
- Diarrhea
- Tachycardia
- Hypertension
- Anxiety
- Mydriasis (enlarged pupils)
- Rhinorrhea (runny nose)
- Muscle spasms
- Diaphoresis (sweating)
- Gooseflesh
- Lacrimation/Yawning
- Bone and muscle pain
STEPWISE APPROACH TO COUNSELING PATIENTS ON NALOXONE

1. Discuss the risk factors for Opioid Overdose
2. Outline the signs and symptoms of Opioid Overdose
3. Discuss how to Respond to an Opioid Overdose
4. Review the assembly and administration of Naloxone
5. Document counseling
WHAT ROLE CAN I PLAY AS A PHARMACIST?

• Identify patients who are at high risk for an opioid overdose

• Provided counseling on opioid overdose
  • Risk Factors
  • Clinical presentation

• Provide counseling on the use of naloxone in the event of an opioid overdose
COMMON PATIENT COMPLAINTS

- “I have been on these medications for years, I am not at risk for an opioid overdose”
- “I take my medications as prescribed. Does my doctor think that I am abusing my pain medications?”
- “You are making me feel like I am a junkie.”
- “This is another excuses for my doctor not to give me my pain medications.”
- “Having naloxone would be a trigger for me to relapse”
CONCLUSION

- The rates of opioid overdose within the United States has drastically increased over the past decade.
- Naloxone distribution in the community can help in decreasing the prevalence of opioid overdose deaths.
- Pharmacists can play a major role in providing education on the risk factors and signs and symptoms of opioid overdose and the administration of naloxone in the event of an opioid overdose.
QUESTIONS??
REFERENCES


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