



**PHARMACY
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RESORT

CASE PRESENTATIONS IN PAIN MANAGEMENT AND OPIOID USE DISORDER

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DISCLOSURE

Andrew Lowe, Pharm.D., APh, FCSHP has no conflicts of interest relevant to this presentation.

LEARNING OBJECTIVES

By the end of this presentation, the participant should be able to:

- **Define the concept of multimodal analgesia and list the possible components**
- **Discuss the complications occurring as a result of side effects of pain medications**
- **List the modalities available to treat opioid use disorder**
- **Discuss the legal requirements for providers of medication-assisted therapy in the treatment of opioid use disorder**

TEST QUESTION 1

Throbbing pain is an indication of:

- a. Visceral injury
- b. Inflammation
- c. Neuropathic pain
- d. All of the above

TEST QUESTION 2

Before starting buprenorphine for opioid use disorder, the patient must be experiencing withdrawals

- a. True
- b. False

TEST QUESTION 3

A patient with severe post-operative pain has been placed on oral oxycodone. The physician wants to add another medication. Which of the following medications must be avoided?

- a. Lorazepam
- b. Celecoxib
- c. Gabapentin
- d. Methocarbamol

INPATIENT CASE

CASE PRESENTATION

- MC is a 25 year old male graduate student who was involved in a motorcycle accident two days ago where he sustained several injuries:
 - Fracture of the left femur
 - Multiple rib fractures bilaterally
 - Burst spine fractures at T4 and T5 levels
- He had an episode of desaturation while in the Emergency Department, so he was admitted to the Intensive Care Unit (ICU).

CASE PRESENTATION

- He is complaining of severe pain “all over”.
- Describes pain as throbbing, sharp, with significant back spasm.
- The trauma surgeon started the patient on morphine by patient-controlled analgesia (PCA) with the following settings:
 - PCA dose 2 mg
 - Lockout interval 15 minutes
 - Maximum 4 doses per hour
- Additional doses of morphine 4 mg were administered four times in the past 24 hours in response to the patient’s loud complaints.

CASE 1

- Past medical history significant for asthma since the age of 5.
- Family history non-contributory.
- Social history: social alcohol user, no tobacco, admits to occasional use of marijuana, especially since it is now legal in his state. Denies any other illicit drug use.
- Work: Teaching assistant in the laboratory at the local pharmacy school

CASE PRESENTATION

- Examination reveals a well-developed, well-nourished male in moderate distress due to pain.
- His examination is benign with the exception of decreased mobility due to his injuries. His respiratory effort is reduced due to the pain associated with his rib fractures
- Vital signs: BP 150/95, HR 95, RR 18, Temp 36.5 degrees
- Laboratory values are within normal limits, with exceptions:
 - Blood alcohol level 0.24 mg/dl
 - Urine sample positive for methamphetamines and cannabinoids

CASE PRESENTATION

- A diagnosis of multiple fractures is made, and orthopaedic surgery is planned to fix the injuries to the spine and left femur.
- He continues to complain of pain, and the surgeons ask for a clinical pharmacy consultation.

EXERCISE 1

What type of pain is this patient experiencing?

- A. Nociceptive
- B. Neuropathic
- C. Muscle spasm
- D. All of the above

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PATIENT ASSESSMENT

- Pain is described as sharp (nociceptive), throbbing (inflammation), and muscle spasm.
- Neuropathic pain a possibility, given the nature of his injuries
- Apparent recent history of substance abuse
- Assessment:
 - Nociceptive pain with inflammation and spasm
 - Risk for alcohol withdrawal
 - Polysubstance abuse

EXERCISE 2

What are your thoughts about his initial analgesic regimen?

- A. It is adequate
- B. Need to increase morphine dose
- C. Need to stop PCA and give morphine by IV push
- D. This patient would benefit from a multimodal regimen

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MULTIMODAL ANALGESIA

- Non-pharmacologic
 - Physical therapy
 - Heat and cold
 - Acupuncture
 - Cognitive behavioral therapy
- Pharmacologic
 - Anti-inflammatory
 - Spasmolytics
 - Opioids
 - Antidepressants
 - Antiepileptics

TREATMENT

- Current treatment does not address the different types of pain that the patient is experiencing.
- Recommended changes:
 - Continue PCA with the following changes:
 - Reduce the dose to 1.5 mg.
 - Decrease lockout interval to 5-10 minutes.
 - Increase number of doses allowed to 6 per hour.
 - Start ketorolac tromethamine as 30 mg IVP every 6 hours, or continuous infusion (120 mg in NS 500 ml infused at 10 ml/hr).
 - Start methocarbamol 750 mg IV/PO every 6 hours.
 - Re-evaluate for neuropathic pain and start gabapentin if appropriate.

ADDITIONAL CONSIDERATIONS

- High blood alcohol level indicates possible need for prophylaxis against withdrawal symptoms.
- Presence of methamphetamine has been associated with increased pain.
- Need to obtain report from PDMP.

PDMP = Prescription Drug Monitoring Program

FOLLOW-UP

- The recommended changes have been made. The patient is now on post-operative day 3 and the surgeons would like to discharge him from the hospital.
- A prescription is written as follows:
Hydrocodone/APAP (Norco) 10/325 mg #40
Take 1 tablet PO every 6 hours as needed for pain
- The patient is instructed to return to clinic in two weeks.

EXERCISE 3

Do you agree with the discharge analgesic regimen?

- A. Yes
- B. No

EXERCISE 3

Do you agree with the discharge analgesic regimen?

- A. Yes
- B. No**

FOLLOW-UP

- Multimodal analgesia regimen is necessary.
- Should start at least one day prior to discharge.
- Recommended regimen:
 - Oxycodone/APAP 5/325 mg one tablet PO every 4 hours as needed for breakthrough pain
 - Naproxen 500 mg one tablet PO every 12 hours
 - Methocarbamol 750 mg PO every 6 hours
- Patient should be educated regarding alcohol and drug rehabilitation programs and should be provided with the appropriate referrals.

SIX MONTHS LATER

- Patient is brought to the Emergency Department by the police after being found in an alley self-injecting heroin.
- He admits to buying heroin because he was unable to obtain any prescription medications from his primary physician.
- The primary physician allegedly told the patient that he should not be in that much pain after all this time.
- He admits (with a smile) to feeling “pretty good” after each dose of heroin.

PSEUDOADDICTION

- Mistaken for addiction in patients who have not been adequately treated with pain medications.
- Symptoms
 - Drug hoarding
 - Requesting specific drugs
 - Clock watching
 - Unauthorized dose escalation
 - Aberrant behavior that disappears after appropriate analgesic regimen

FOLLOW-UP EXERCISE

If the patient is referred to an opioid treatment program, which medication can he be started on?

- A. Naltrexone
- B. Buprenorphine
- C. Methadone
- D. Any of the above

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OUTPATIENT CASE

CASE PRESENTATION

- 32 year-old female admitted with severe abdominal pain
- She describes pain as sharp, throbbing, mostly in the lower right quadrant of her abdomen, but sometimes diffuse throughout her entire abdomen.
- She rates pain at 10/10 on a 0-10 numeric scale
- Pain has been gradually worse over the past week, leading to the day of admission when she was unable to sleep
- Current pain management:
 - Hydrocodone/acetaminophen 10/325 mg one or two tablets every 4 hours as needed
- Allergies: None

CASE PRESENTATION

- Past medical history:
 - Endometriosis since the age of 16
 - Has had four laparoscopic surgeries for laser ablation of endometrial lesions
 - Each surgery revealed endometrial tissue invading abdominal structures, including the colon
 - Currently has a progestin implant (etonogestrel – Nexplanon)
 - Fibromyalgia – diagnosed 5 years ago
 - Depression
 - Anxiety
 - She admits to gaining 35 pounds in the past two years
- She was told that the only further treatment for her pain is to undergo a hysterectomy

CASE PRESENTATION

- Family history is unremarkable.
- Social history:
 - No cigarette smoking
 - No alcohol
 - No illicit drugs
 - Works as a clerk at the local grocery store when not in severe pain. She has missed numerous days of work in the past month, and is worried that she will lose her job.
 - Lives at home with her parents.

EXERCISE 1

Based on the information presented thus far, what type of pain is this patient experiencing? (select all that apply):

- a. Visceral
- b. Somatic
- c. Inflammation
- d. Neuropathic

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PAIN ASSESSMENT CONSIDERATIONS

- What is the duration of pain symptoms?
- Where is the pain located?
 - ✓ Concentration of pain
 - ✓ Does the pain radiate to other areas?
 - ✓ Pain location

PAIN ASSESSMENT CONSIDERATIONS

What are aggravating and alleviating factors?

- ✓ Understanding aggravating and alleviating factors
- ✓ Types of therapy
- ✓ Choices
- ✓ Factors to be aware of

CASE PRESENTATION

- Hydrocodone/acetaminophen was discontinued, and the patient was started on the following regimen:
 - Patient-controlled analgesia (PCA) with hydromorphone:
 - PCA Dose 0.2 mg
 - Lockout 10 minutes
 - Maximum 6 doses per hour
 - Ketorolac tromethamine 30 mg IV every six hours
 - Acetaminophen 650 mg orally every six hours
 - Gabapentin 300 mg orally every 8 hours

CASE PRESENTATION

- Three days later, the pain subsided (3 on a 0-10 numeric scale).
- The physicians are asking for an analgesic regimen to prescribe on discharge.
- The following regimen was recommended:
 - Oxycodone 10 mg orally every 4 hours as needed
 - Acetaminophen 650 mg orally every 6 hours
 - Gabapentin 300 mg orally every 8 hours
 - Ibuprofen 600 mg orally every 6 hours

EXERCISE 2

Do you agree with the choice of therapy?

- a. Yes, that is the best therapy
- b. Need to increase gabapentin dose
- c. Need to change acetaminophen to as-needed only
- d. The dose of oxycodone is too low

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FOLLOW-UP

- The patient returned to clinic every three months for follow-up.
- Pain levels had increased gradually, and the amount of oxycodone prescribed increased as well. This indicated that tolerance to opioids had developed.
- Her latest prescription allowed for six tablets of oxycodone a day (180 tablets a month). Gabapentin was further increased to the maximum dose of 900 mg orally four times a day.
- When filling the prescription, the pharmacist checked the prescription drug monitoring program (PDMP) report, and was alarmed by the findings.

PDMP FINDINGS

- Monthly prescriptions for oxycodone 10 mg
- Additional prescriptions for oxycodone/acetaminophen 10/325 mg written by Emergency Department (ED) providers at several neighborhood hospitals and urgent care centers (six prescriptions in the past month, each for 20 tablets).
- Two prescriptions in the past month for alprazolam given by two different prescribers.
- The pharmacist contacted the patient's primary physician who had been writing the monthly prescriptions for oxycodone.

WE HAD A PROBLEM!

- The patient's primary physician confronted her with the findings
- She stated that she needed help with the anxiety, and that she had been receiving alprazolam for the past six months
- Additionally, she received multiple prescriptions for oxycodone-containing products from ED providers that she filled at several different pharmacies.
- Further inquiry revealed that she took oxycodone not as much for pain, but for the feeling of well-being it created.

EXERCISE 3

Is this patient addicted to oxycodone? (choose all that apply)

- a. Yes
- b. Not at all
- c. This may actually be pseudoaddiction

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- a. **Yes**
- b. Not at all
- c. **This may actually be pseudoaddiction**

ADDICTION

- Different from pseudoaddiction.
- Drug-seeking behavior not related to pain.
- Patient engaging in high-risk behavior due to the euphoric effects.
- Multiple visits to emergency departments at several hospitals.

<https://www.samhsa.gov/section-223/certification-resource-guides/key-terms-definitions>. Accessed 8/20/2020

WHAT TO DO? EXERCISE 4

The patient was diagnosed with opioid use disorder. She tearfully tells you that she would like to stop oxycodone, but it makes her feel so good!

What would the next step be? (choose all that apply)

- a. Stop oxycodone now
- b. Start a fast tapering regimen for oxycodone
- c. Refer her to a medication-assisted treatment (MAT) program

WHAT TO DO? EXERCISE 4

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MAT PROGRAMS

- Use methadone or buprenorphine (plus/minus naloxone)
- Providers must receive training and must apply for a waiver from the Substance Abuse and Mental Health Services Administration (SAMHSA) to manage office-based opioid treatment.
- Based on the Drug Abuse Treatment Act of 2000 (DATA 2000)

<https://www.samhsa.gov/medication-assisted-treatment>. Accessed 9/15/2020

MAT CHOICES

- Methadone
 - Start with dose equivalent to the daily amount of opioid used.
 - Gradual tapering
- Buprenorphine (with or without naloxone)
 - Patient must be in mild withdrawal before giving the first dose of buprenorphine.
 - Start buprenorphine six hours after last dose of opioids if short acting opioids were used or 24 hours after the last dose of methadone.
 - Duration: a minimum of 18 months

MAT MONITORING

- Cardiovascular function
- EKG (if using methadone)
- Respiratory function
- Cravings

BACK TO THE PATIENT

- The dose of oxycodone for pain was optimized.
- The patient signed an agreement that covered expectations of behavior regarding opioid use.
- She enrolled in the MAT program.
- Started on buprenorphine/naloxone.
- After two increases, she is now stable on her current dose.
- She enrolled in a cognitive behavioral therapy program for treatment of her anxiety
- The dose of alprazolam was gradually reduced until it could be safely discontinued

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