

ELNEC- For Veterans

END-OF-LIFE NURSING EDUCATION
CONSORTIUM

Palliative Care For Veterans

Module 2

Pain Management

CASE STUDIES

Module 2: Pain Management

Case Studies

Module 2

Case Study #1

William: Pain and Suffering

William is a 66-year-old Veteran admitted to the medical unit at your VA facility for care related to end-stage cardiac disease, renal failure, and uncontrolled pain. He complains of chronic generalized chest pain, frequent cramps in his legs, and worsening arthritis pain related to his immobility. You note that from his past medical records the analgesics have been steadily increased with little pain relief. William states that the medications cause an increase in nausea, constipation and sedation. The nurse feels frustrated as she observes William with worsening depression, withdrawal and weeping. You notice that William has several rosaries and prayer books at his bedside. William has refused referral to hospice. His wife of 40 years is working two jobs to pay the bills. She is unable to see William everyday. He has four grown children. He is estranged from the two older. His physician and nurse have asked him if they could have the palliative care team visit him, with the understanding that they could assist him with not only his pain, but with some of the other symptoms he is experiencing, too.

Discussion Questions:

1. What other disciplines should be included in William's care? Assuming you think at least a chaplain and psychologist should be included, what roles might they play in William's Care?
2. Knowing that many patients have multiple sites of pain, how would you assess pain at each pain site William mentioned? How many kinds of pain does the patient have?
3. What additional assessment might you do?

(Discussion of suffering and total pain)
4. How can this Veteran's pain and suffering best be treated?
5. What role could the family dynamics play in Williams's pain & refusal to consider hospice?
6. In what ways can the interdisciplinary palliative care team provide support/assistance to William?

Specific Questions for the Staff Caring for William:

7. How frequently do you care for patients like William?

8. Have you ever felt inadequate in taking care of a patient like William? If so, answer the following question: “I felt really inadequate when...”
9. Have you ever felt that you made a difference in caring for patients like William? If so, answer the following question: “I found I made a difference when...”

Module 2
Case Study #2
Diana: Assessment/Barriers

Diana is a 40-year-old Veteran with a history of breast cancer. Five years ago she underwent a lumpectomy with radiation, followed by chemotherapy. One year ago she developed bone metastases in the lumbar spine and right clavicle, documented by bone scan. She is currently being treated with another regimen of chemotherapy that includes paclitaxol (Taxol[®]). She is returning to the oncology clinic for chemotherapy administration. The nurse is concerned about Diana's comfort and conducts a pain assessment.

History:

Diana at first reports no problems, but later admits that she recently developed very minor low back pain. She attributes this to increased activity as she has been remodeling her home. When the pain does not abate with over the counter medications (e.g., ibuprofen, acetaminophen) and non-pharmacological techniques (e.g., massage, heat), she will occasionally take a Vicoden[®] (5 mg hydrocodone/500 mg acetaminophen). When questioned why she does not take more, she states "I don't like taking narcotics" and "My husband doesn't like when I take the pills."

Diana describes her pain as 2 or 3/0-10, located in her low back. The pain is aching and throbbing. When pressed to report other pain sites, she admits she has some shoulder pain, but rates it as a 1 currently. She also describes tingling in the feet bilaterally, extending to the ankles. "It is not pain really, just burning."

Other history: Diana is married, lives with her husband and two teenage sons in a suburban home. She works as a receptionist in a dentist's office.

Physical Assessment:

During the history, Diana's posture indicated that she was not comfortable. When Diana gets up from her chair to get onto the exam table, the nurse notes that she does so with difficulty. Palpation of the lower lumbar spine (L3-4) produces pain. Diana denies pain when the clavicle is palpated. Straight leg raises of less than 30 degrees increase the low back pain significantly. Neurological examination reveals weakness in lower extremities, with R > L. Sensory loss is noted bilaterally in the toes and feet to the ankles. Reflexes are intact.

Discussion Questions:

1. What are the barriers to pain relief in this case?
2. What types of pain is Diana experiencing and what might be the underlying etiologies? What other questions should the nurse ask this patient?
3. Devise a plan of care for this patient.

Module 2
Case Study #3 and Discussion
Joshua: Importance of Interdisciplinary Care

Case:

Joshua is a 32-year-old African American Veteran with an advanced sarcoma initially affecting the right leg but now with extensive metastases, including lung. He complains of severe pain in the leg. He lies in a fetal position with the lights off. Family members visit rarely and the Veteran is reluctant to return home. He is cachexic and clearly is approaching the end of life. He requests intravenous hydromorphone, as this has worked well in past hospitalizations. When the nurses attempt to administer the medication, the Veteran wants it injected quickly and in a port closest to the insertion site. The nurse expresses concern that the patient is addicted or manipulative, wanting to stay in the hospital to get intravenous medicines. *As an advanced practice nurse (APN), what assessment and interventions are warranted? How might you work with a psychologist to manage Joshua's cure?*

Discussion:

Extensive pain assessment is warranted, including the location, quality, intensity, medication history, and other factors. This type of pain might include nociceptive and neuropathic aspects, necessitating treatment with multiple medications. An assessment of the patient's emotional state is also needed, as well as the family's role and function. Especially important is to determine whether the patient is depressed, and what his beliefs are about his disease. The possibility of pseudo-addiction should be recognized, as well as the fact that intravenous medications do have a quicker onset of action. A team approach is indicated given the complex bio-psychosocial-spiritual dimensions of this situation so the APN calls a special team meeting to discuss the patient's overall management. And the APN may help the nurse to discuss her feelings and concerns regarding the patient's request for more rapid injection of the drug.

Case continued:

Joshua's response to the opioid indicates that the chosen dose reduces pain somewhat (he cannot articulate a percentage of relief but states that the pain is a 6-8 after the injection, down from an 8-10) without significant sedation. A higher dose produces some sedation, but improved relief. In questioning Joshua, he is not upset by the sedation. Corticosteroids are added to reduce inflammation. *Besides physical assessment/interventions, what other psychosocial assessments and interventions would be appropriate? What other team members need to be involved?*

Discussion:

The APN determines that the psychologist and one of the palliative care nurses are able to establish trust with Joshua and his mother. After extended discussions, the team learns that the family does not visit often as they cannot afford to pay for parking. Financial burdens are high and resources are very limited. Joshua expresses concern that he is a burden to his mother, who awakens frequently during the night to care for him. His coming to the hospital is an attempt to give her some peace and his reluctance to return home reflects this concern. Aggressive team work is directed towards helping the family

understand Joshua's disease state, improving communication between family members and Joshua, and assisting in obtaining financial and other support. At the same time the team provides time for staff to express their concerns and sadness at caring for a young man at the end of life.

Case continued:

Joshua is discharged to his home with hospice care. He receives a subcutaneous infusion of hydromorphone with boluses administered by his mother as needed. He dies at home with good relief of pain. His mother, who in the past struggled with wanting aggressive therapy, had come to some level of acceptance regarding her son's death. She continues follow-up with the hospice chaplain for bereavement care.

Reference:

Weissman, D.E. (2005). Pseudoaddiction #69. *Journal of Palliative Medicine*, 8(6);1283-1284.

Module 2
Case Study #4
Mr. Jones: Calculating Equianalgesic Doses

Mr. Jones is taking two Percocet[®] (oxycodone 5mg/acetaminophene 325mg) tablets every four hours for bone pain related to metastatic cancer. His pain is a constant 6 on a 0 to 10 scale. Since his pain goal is 3, you decide to call his physician.

Discussion Questions:

1. The doctor suggests increasing the Percocet[®] to two tablets q3h ATC. How would you respond to this order?
2. A more appropriate approach would be to start the patient on a different opioid. Calculate the equianalgesic dose and schedule for the following options:
 - a. oral MS - immediate release
 - b. oral MS Contin[®] or Oramorph[®] SR
 - c. oral hydromorphone (Dilaudid[®])
 - d. oxycodone (Roxicodone[®])
 - e. fentanyl patch (Duragesic[®])
3. Suggest new analgesic orders for this patient. Take into consideration that orders should include both scheduled and breakthrough pain medications and other drugs that might be especially effective for a patient with bone pain.

Faculty Guide:

The goal of this case is to ensure that the participants understand:

- dose ceiling of acetaminophen
- the role of NSAIDs in bone pain
- how to do analgesic conversions
- concepts of titration

Specific points for each question:

1. There are two major issues with the order:
 - a. The dose limit of acetaminophen is 4000 mg. At his current dose of two Percocet[®] q4h, he is taking 650 mg per dose x 6 doses, or 3900 mg per day. Therefore, increasing the Percocet[®] is not a safe option. An option is use of oxycodone alone, which is available without acetaminophen.
 - b. The patient is likely to benefit from the addition of an NSAID to his regimen.
2. To calculate the oral dose, begin by noting that 2 Percocet[®] q4h by mouth =12 tabs per 24 hours=60 mg oxycodone per 24 hours by mouth.

- a. **MSIR:** Look up the approximate equivalent dosages of oxycodone and morphine in an equianalgesic table. Use this dosage ratio to calculate the dose of morphine equivalent to 60 mg oxycodone. This is an easy one to start with since these drugs are equipotent.

$$\frac{30 \text{ mg PO oxycodone}}{60 \text{ mg PO oxycodone}} = \frac{30 \text{ mg PO morphine}}{X \text{ mg PO morphine}}$$

Solve for X (cross multiply)

$$60 \times 30 = 30X$$

$$X = 1800/30$$

$$X = 60 \text{ mg morphine}/24 \text{ hours}$$

Since the duration of MSIR is 4 hours, divide the 24 hours dose into 6 doses, or:

10 MSIR q 4 hours

- b. MS Contin[®] or Oramorph[®] SR: Follow the same process as above, except the duration of action is 12 hours and divide the 24 hour dose into 2 doses, or:

30 mg MS Contin[®] or Oramorph[®] SR q 12 hours

- c. **hydromorphone:** 30 mg oral oxycodone is equivalent to 7.5 mg oral hydromorphone

$$\frac{30 \text{ mg PO oxycodone}}{60 \text{ mg PO oxycodone}} = \frac{7.5 \text{ mg PO hydromorphone}}{X \text{ mg PO hydromorphone}}$$

Cross multiply as above:

$$X = 15 \text{ mg PO hydromorphone}/24 \text{ hours.}$$

Since the duration of hydromorphone is 4 hours, divide the 24 hours dose into 6 doses, or:

2.5 mg hydromorphone q 4 hours by mouth

Since Dilaudid[®] does not come in 2.5 mg tablets, but in 2 or 4 mg tablets, it is reasonable to give 2 mg per dose instead, or 4 mg if the pain is poorly controlled.

- d. The package insert suggests that 25 µg/h transdermal fentanyl is equivalent to 45-134 mg oral MS/24 hours. Therefore the calculated morphine dose of 60 mg/24 hours would suggest an equianalgesic dose of fentanyl would be 25 µg/h q 72 hours. However, most clinicians would double this dose and use a 50 µg/h patch because the pain is poorly controlled. Remember that it takes an average of 16 hours for fentanyl in the patches to reach the blood and give analgesia.

3. Any set of analgesic orders should include the following concepts:
 - a. Since the pain is 6/10, it is reasonable to increase the baseline dose by 50%.
 - b. Short acting breakthrough medications equivalent to 50 to 100% of the baseline dose should be available.
 - c. Some possible combinations:
 - MS Contin[®] or Oramorph[®] SR 45 mg q 12 hours, with 7.5 to 15 mg MSIR (use liquid q2-4 hours PRN), (would be OK to use the Percocet[®] first)
 - MSIR 15 mg q 4 hours, with 7.5 to 15 mg MSIR q2-4 hours PRN
 - Hydromorphone 4 mg q4 hours PRN, with 2-4 mg hydromorphone q2-4 hours PRN
 - Change the Percocet[®] to plain oxycodone 15 mg q4 hours, with 5-15 mg q2-4 hours PRN or add oxycodone 5 mg to each dose Percocet[®].

Note: An NSAID, such as ibuprofen 600 mg or naproxen 500 mg BID should be added to any of these regimens for patients with bone pain.

Source:

Gordon, D., Stevenson, K.K., & Dahl, J. (1996). *Home care case studies and faculty guide*. Madison, WI: Wisconsin Cancer Pain Initiatives. The complete set of cases can be obtained from the City of Hope Pain and Palliative Care Resource Center: <http://prc.coh.org>.

Followup Scenario Dose Escalation

When you come back on your shift 2 days later, you find that the patient is now on oral MS Contin[®] 100 mg po q8h with morphine sulfate immediate release 45 mg by mouth q2h and his pain is now at 3 out of ten. Computed tomography shows that the bone lesion is a large lytic process and radiation therapy is planned the next day. Halfway through your shift, the patient hears a cracking sound and is immediately in severe pain (ten out of ten) at the site. You call the house officer and he recommends giving morphine immediate release 30 mg intravenously ASAP.

Discussion Questions:

1. Is this a dose that you agree with? (equal to 90 mg po or twice his rescue dose)
2. If nurses are not allowed to give intravenous opioids at your VA facility, what should you do? (eg subcutaneous route, po equivalent)
3. What kinds of concerns might you have with administering the dose? (discussion of respiratory depression, fears of addiction)
4. How should the patient be monitored afterwards? (review side effects – delirium, respiratory depression, constipation, dry mouth, pain relief and need for higher rescue doses)
5. What else can you do? (position the patient to minimize the pain)

Module 2
Case #5
Side Effects of Opioid Analgesia
Management of Constipation, Management of Respiratory Depression, and
Management of Delirium

Willie is a 75 year old man with metastatic hormone refractory prostate cancer and worsening left hip pain at 9 out of 10 from bone metastases. He has been on MS Contin[®] 90 mg po q12h and Morphine IR[®] 15 mg rescues and comes for an unscheduled clinic visit. The last few days, his hip pain was worsening, and he started to increase his morphine on his own, and now he has new crampy lower abdominal pain at 7 out of 10.

1. *What additional questions might you ask? (last bowel movement, urinary symptoms, pain relief, other sites of pain and symptoms)*
2. *What would you propose to do? (Rectal exam, palpate abdomen)*

Teaching points: Constipation can present as abdominal pain. Patients should be on laxatives to prevent constipation and this is as important as pain medications.

Willie is admitted for further management of the left hip pain and his medications are increased to MS Contin[®] 200 mg po q12h and Morphine IR[®] 45 mg po q2h prn. He is given an intravenous dose of morphine 20 mg IV for immediate pain relief, and admission blood work is sent. When you see him one hour later to reassess pain relief, he is asleep, and you notice his respiratory rate is 6 per minute, with the other vital signs normal. He is barely arousable. His family is anxious that he is near death.

3. *What should you do?*

Teaching points: How to manage respiratory depression – small doses of naloxone, or observation, not the full ampule. Important to educate the family. Second teaching point is that patient's renal function can change, especially in patients with prostate cancer, and this may affect opioid pharmacodynamics.

Willie's respiratory rate normalizes, and the doctors leave the ward. He becomes arousable, but is confused, and talks about being in the railway station waiting to go to the ball game. Now his family starts demanding to have a doctor come again.

4. *What should you do?*

Teaching point: Educate family about delirium, management of delirium

Module 2
Case #6
Mr. Williams: Multiple Sites of Pain

Mr. Williams is a 68 year old Viet Nam War Veteran who was diagnosed with non-small cell lung cancer nine months ago. He has undergone several different regimen of chemotherapy along with radiation therapy. At first this allowed him to function well but in the past two months he has been losing weight and spending greater than 50% of the day lying in bed or on the couch. He is being cared for in the Community Living Center (CLC).

Mr. Williams describes aching well-localized low back pain with radiation to left leg; the pain in the leg is burning and electrical. The pain is moderate (4-5/10) at rest but becomes severe (8/10) when he stands for longer periods or when he twists (e.g., getting up out of bed or into the car). He also has pain on the right rib at the mid-thoracic level. This is throbbing and he cannot sleep on his right side; it worsens when he takes a deep breath. Imaging reveals bone metastases at L2 and possibly the 8th rib. He is currently taking hydrocodone/acetaminophen 10 mg/325 mg 8-10/day. He states it only “takes the edge off” the pain; he denies sedation, nausea or other adverse effects. He admits to having hard stools every 4-5 days and can only evacuate with straining. He is eating but reports having little appetite. He cannot sleep through the night as he is awakened by pain.

Mr. Williams has been married for 38 years; he and his wife have two adult sons with three grandchildren. He smoked 1-2 packs per day for 50 years; he drank 4-6 beers/day before cancer diagnosis but cannot stand the taste of alcohol since treatment; he admits to having used marijuana as a young man and heroin in Viet Nam but stopped when he returned stateside; he wonders if his grandfather was an alcoholic and states one son is in Alcoholics Anonymous (AA).

Discussion Questions:

1. What does the pain assessment reveal about the type(s) of pain experienced by Mr. Williams? What additional questions might you ask? Design a more effective regimen that is safer, multi-modal, and would provide more continuous relief. Ensure adverse effects are prevented and/or treated.
2. Mr. Williams health declines and although previously controlled on long acting morphine 100 mg q 12 hours and morphine IR (immediate release) 15 mg approximately 3 doses/day, he is now having difficulty swallowing. What is the appropriate fentanyl patch dose and what should be done with the breakthrough morphine?

See next page for Answers

Module 2
Case #6
Mr. Williams: Multiple Sites of Pain
(Answers)

Mr. Williams is a 68 year old Viet Nam War Veteran who was diagnosed with non-small cell lung cancer nine months ago. He has undergone several different regimen of chemotherapy along with radiation therapy. At first this allowed him to function well but in the past two months he has been losing weight and spending greater than 50% of the day lying in bed or on the couch. He is being cared for in the Community Living Center (CLC).

Mr. Williams describes aching well-localized low back pain with radiation to left leg; the pain in the leg is burning and electrical. The pain is moderate (4-5/10) at rest but becomes severe (8/10) when he stands for longer periods or when he twists (e.g., getting up out of bed or into the car). He also has pain on the right rib at the mid-thoracic level. This is throbbing and he cannot sleep on his right side; it worsens when he takes a deep breath. Imaging reveals bone metastases at L2 and possibly the 8th rib. He is currently taking hydrocodone/acetaminophen 10 mg/325 mg 8-10/day. He states it only “takes the edge off” the pain; he denies sedation, nausea or other adverse effects. He admits to having hard stools every 4-5 days and can only evacuate with straining. He is eating but reports having little appetite. He cannot sleep through the night as he is awakened by pain.

Mr. Williams has been married for 38 years; he and his wife have two adult sons with three grandchildren. He smoked 1-2 packs per day for 50 years; he drank 4-6 beers/day before cancer diagnosis but cannot stand the taste of alcohol since treatment; he admits to having used marijuana as a young man and heroin in Viet Nam but stopped when he returned stateside; he wonders if his grandfather was an alcoholic and states one son is in Alcoholics Anonymous (AA).

Discussion Questions & Answers:

1. *What does the pain assessment reveal about the type(s) of pain experienced by Mr. Williams? What additional questions might you ask? Design a more effective regimen that is safer, multi-modal, and would provide more continuous relief. Ensure adverse effects are prevented and/or treated.*
 - a. Mr. Williams has a mix of nociceptive pain (aching low back pain and throbbing rib pain) and neuropathic pain (burning and electrical pain in leg). Other questions to ask include:
 - i. What medications has he already tried for these pain problems or in the past for other issues/surgeries, etc? Did he have any adverse effects to these medicines? If they were taken recently, why were they stopped (adverse effects, financial concerns)?
 - ii. What is his goal for pain control?
 - b. Mr. Williams would benefit from the addition of a long acting opioid with a short acting opioid for breakthrough pain. We have several options for long-acting

agents: long acting morphine, long acting oxycodone, fentanyl patch, or methadone. Since he can swallow, we will start with long acting morphine. How much should be prescribed/administered?

- i. He is currently taking hydrocodone 10 mg approximately 8/day or 80 mg total (we will not try to calculate the opioids equivalents for acetaminophen). Looking at an equianalgesic table, we see that hydrocodone is approximately equal to morphine, or approximately 80 mg oral morphine/day. We can reduce by 25% to account for a lack of cross tolerance; thus he will require 60 mg oral morphine/24 hours. To provide twice daily dosing, divide by 2 = 30 mg q 12.
- ii. He also needs breakthrough medication and the current medication is delivering too much acetaminophen. Another option is oral morphine. The breakthrough dose is 10-20% of the 24 hour dose; thus he needs 8-16 mg of oral morphine. A reasonable order is morphine ir (immediate release) 15 mg 1 every 3 hours prn.
- c. Mr. Williams might benefit from the addition of other medications such as dexamethasone to address the bone pain and possible the radiating pain, an antiepilepsy drug (such as gabapentin or pregabalin) for the neuropathic pain, or an antidepressant for the neuropathic pain. Nonpharmacologic therapies might include vertebroplasty or kyphoplasty to reinforce the vertebral body, nerve blocks, PT/OT to provide assistive devices and mild exercises, heat/cold, cognitive/behavioral therapies and many others. Radiation therapy might be useful to manage the bone lesions.

2. *Mr. Williams' health declines further and although previously controlled on long acting morphine 100 mg q 12 and morphine ir 15 mg approximately 3 doses/day, he is now having difficulty swallowing. What is the appropriate fentanyl patch dose and what should be done with the breakthrough morphine?*

- a. His total oral morphine dose is 245 mg. A 100 mcg/hr fentanyl patch delivers approximately 200 mg of oral morphine equivalents. If he is able to swallow liquid morphine, he can be started at 15 mg; this will trickle down the back of the throat and be absorbed by the gastrointestinal tract.