**Clinical Case StuNews September 2017**

History of Present Illness: A 40-year-old woman (height 162.5 cm, weight 60 kg) with newly diagnosed ovarian cancer comes to the clinic for pain management. She has a metastasis on her pelvis that is causing 8/10 pain. Her pain goal is 5/10. Her Eastern Cooperative Oncology Group (ECOG) performance status is 0, and she wants to pursue aggressive treatment.

Medical History: Mild asthma, generalized anxiety disorder, and deep venous thrombosis diagnosed last month

Social History: 1–2 glasses of wine per week. Never smoked or used illegal drugs. Married with four adopted children, ages 15, 12, 10, and 8

Current Medications: Albuterol HFA (hydrofluoroalkane) inhaler 1 or 2 puffs four times a day as needed for shortness of breath x 10 years (uses once or twice daily on 2 or 3 days of the week); loratadine 10 mg daily x 10 years; paroxetine 20 mg daily x 5 years; warfarin 2.5 mg on Monday, Wednesday, Friday, and 5 mg on other days. (Goal INR 2–3) x 1 month

Allergies: None known

Vital Signs: Blood pressure 140/80 mm Hg; heart rate 86 beats/minute; respiratory rate 20 breaths/minute; Temp 98.4°F (36.9°C)

Laboratory Values: Na 136 mEq/L; K 4 mEq/L; glucose (fasting) 80 mg/dL (4.4 mmol/L); BUN 10 mg/dL (3.6 mmol/L); SCr 0.9 mg/dL (79. 6 mol/L); INR 2.1

**Question 1**

The oncologist prescribes oxycodone 10 mg four times a day as needed for pain. The patient is worried about becoming constipated while taking this medication. What should the pharmacist tell her about opioid-induced constipation (OIC)?

1. Exercise if she can and stay hydrated to help mitigate constipation.
2. A tolerance to constipation will develop eventually.
3. Laxatives or stool softeners are not needed until constipation occurs.
4. Concomitant therapy with methylnaltrexone should be started.

Answer: 1. Exercise if she can and stay hydrated to help mitigate constipation.

Rationale: The correct answer is 1. Adequate hydration and exercise (if the patient is able) can alleviate some symptoms of constipation. Patients very rarely develop a tolerance to OIC, making answer 2 incorrect. Patients should begin taking laxatives and stool softeners at the start of opioid therapy to avoid constipation, making answer 3 incorrect. Methylnaltrexone is an option for OIC but would not be first line. It would only be an option after appropriate measures (hydration, exercise, stool softeners, and laxatives) had failed.

Citation: National Comprehensive Cancer Network (NCCN). Palliative Care Guidelines. Available at www.nccn.org/professionals/physician\_gls/pdf/palliative.pdf. Accessed December 19, 2015.

**Question 2**

The oncologist plans to give the patient six cycles of carboplatin and paclitaxel. She is concerned about the possibility of neuropathic pain with this combination and asks for recommendations on preventing chemotherapy-induced peripheral neuropathy (CIPN). What recommendation should be made?

1. Amifostine prevents CIPN but may decrease treatment efficacy.
2. Oxycodone will treat CIPN, so no further therapies are needed.
3. This regimen does not cause CIPN, so no further therapies are needed.
4. Venlafaxine may be effective for the prevention of CIPN.

Answer: 4. Venlafaxine may be effective for the prevention of CIPN.

Rationale: The results of a phase III trial suggest that patients who received venlafaxine were less likely to have severe CIPN than were patients who did not receive the agent. Oxycodone, like most opioids, is not effective for neuropathic pain, making answer 2 incorrect. Amifostine has shown no efficacy in the prevention of CIPN, making answer 1 incorrect. Taxanes and platinum derivatives are both known to cause CIPN, making answer 3 incorrect.

Citation: Piccolo J, Kolesar JM. Prevention and treatment of chemotherapy-induced peripheral neuropathy. Am J Health Syst Pharm 2014;71:19-25.

**Question 3**

After four cycles of chemotherapy, the patient has lost 10 kg (22 lb) and reports feeling depressed. She has lost weight because she has no appetite, which is upsetting because she wants to eat dinner with her family as often as she can. What is the best appetite-stimulating strategy for her?

1. Dexamethasone 8 mg twice daily
2. Megestrol acetate 800 mg daily
3. Mirtazapine 15 mg at bedtime
4. Olanzapine 10 mg daily

Answer: 2. Megestrol acetate 800 mg daily

Rationale: Megestrol acetate is an effective appetite stimulant and will not interact with the patient’s other medications. Mirtazapine is an effective appetite stimulant, but it would cause dangerous interactions with paroxetine and warfarin. Olanzapine has been used successfully for appetite stimulation in patients with cancer; however, the usual dose for this indication is 5 mg daily, making option 4 incorrect. Dexamethasone may also stimulate the appetite; however, 8 mg twice daily is too high for a naive patient; the drug would also interact with warfarin and might adversely affect the patient’s mood, making option 1 incorrect.

Citation: National Comprehensive Cancer Network (NCCN). Palliative Care Guidelines. Available at www.nccn.org/professionals/physician\_gls/pdf/palliative.pdf. Accessed December 19, 2015.

**Question 4**

In addition to decreased appetite, the patient has grade 3 neuropathic pain. Which is the best initial adjuvant analgesic therapy for this patient?

1. Amitriptyline 50 mg daily
2. Gabapentin 300 mg at bedtime
3. Duloxetine 30 mg daily
4. Pregabalin 150 mg three times daily

Answer: 2. Gabapentin 300 mg at bedtime

Rationale: The correct answer is 2. Gabapentin is effective for neuropathic pain and will not interact with any of the patient’s other medications. Amitriptyline may cause serotonin syndrome when combined with paroxetine, making answer 1 incorrect. Duloxetine may cause serotonin syndrome when combined with paroxetine and increase the effects of warfarin, making answer 3 incorrect. Although pregabalin is effective for neuropathic pain, the dose of 150 mg three times daily is too high for naive patients and may cause oversedation, making answer 4 incorrect.

Citation: National Comprehensive Cancer Network (NCCN). Guidelines on Adult Cancer Pain. Available at www.nccn.org/professionals/physician\_gls/pdf/pain.pdf. Accessed December 19, 2015.

**Question 5**

The patient completes paclitaxel/carboplatin but relapses 3 months later. After two cycles of salvage chemotherapy with liposomal doxorubicin and bevacizumab, she is admitted with a malignant bowel obstruction. Her ECOG performance status is 3; she cannot take oral medications, and she wants to discontinue aggressive treatment. Her life expectancy is 4–6 weeks. Which intervention is least likely to improve her quality of life?

1. Converting oral medications to other routes of administration
2. Octreotide 100 mcg subcutaneously three times daily
3. Scopolamine 1.5 mg transdermal patch every 72 hours
4. Total parenteral nutrition

Answer: 4. Total parenteral nutrition

Rationale: The correct answer is 4. Total parenteral nutrition has not been shown to increase life expectancy or quality of life in patients with a poor performance status and life expectancy of less than 2 months; in fact, some studies suggest it decreases quality of life for these patients. Converting some of the patient’s oral medications (e.g., her pain and nausea medications) to alternative routes could have a positive impact on her quality of life, making answer 1 incorrect. Octreotide and scopolamine can both alleviate symptoms of malignant bowel obstruction, making answers 2 and 3 incorrect.

Citation: National Comprehensive Cancer Network (NCCN). Palliative Care Guidelines. Available at www.nccn.org/professionals/physician\_gls/pdf/palliative.pdf. Accessed December 19, 2015.