

Analgesic Therapy in Patients with Chronic Kidney Disease: A Case-Based Approach

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The questions below are based on the article “Analgesic Therapy in Patients with Chronic Kidney Disease: A Case-Based Approach,” which begins on page 13 of this issue. Choose the single best answer for each question.

1. A 65-year-old woman with chronic kidney disease (CKD) and congestive heart failure due to long-standing hypertension presents to the clinic with bilateral knee pain that has worsened over the last several months. Medications include furosemide 40 mg twice daily and lisinopril 20 mg daily. Blood pressure is 132/78 mm Hg, and a recent serum creatinine concentration is 1.9 mg/dL. Ibuprofen 600 mg twice daily is prescribed for osteoarthritis pain in her knees. The patient is seen in clinic 1 week after initiation of therapy and reports some improvement in her pain. Her blood pressure is 180/100 mm Hg, and 2+ lower extremity edema is noted. Results of repeat laboratory testing shows a serum creatinine level of 4.2 mg/dL and serum potassium level of 5.5 mEq/L. She has been compliant with all medications. What is the next step in this patient's management?

 - (A) Decrease ibuprofen to 200 mg twice daily and follow up in 1 week.
 - (B) Stop ibuprofen and recheck laboratory values in 2 to 3 days.
 - (C) Change from ibuprofen to naproxen 500 mg daily to spare kidney function.
 - (D) Continue current analgesia therapy and add acetaminophen as needed as adjuvant therapy.
 - (E) Continue current analgesia therapy and advise patient to discontinue furosemide and drink plenty of fluids.
2. Which of the following drug classes should be used with caution in patients with CKD who are treated with tramadol?

 - (A) Anticonvulsants
 - (B) Benzodiazepines
 - (C) Selective serotonin reuptake inhibitors
 - (D) β -Blockers
 - (E) Angiotensin-converting enzyme inhibitors
3. A 49-year-old man with type 1 diabetes mellitus and stage 4 CKD (estimated glomerular filtration rate ~ 20 mL/min) is experiencing peripheral neuropathy in his feet bilaterally. The pain is most intense at night and is causing insomnia. He is administered controlled-release oxycodone 10 mg twice daily. Two weeks later, he reports minimal pain improvement. Amitriptyline 50 mg is initiated at bedtime. Several days later, the patient reports uncontrolled jerking of his upper extremities and extreme fatigue. Which of the following is the most likely explanation of these new findings?

 - (A) The patient is taking doses of oxycodone in excess of the prescribed dose.
 - (B) Amitriptyline prolongs the half life of opiates and should be cautiously employed in CKD patients taking morphine derivatives.
 - (C) The patient's kidney function has progressed rapidly to end-stage renal disease and requires initiation of dialysis for uremia.
 - (D) Amitriptyline is interfering with the patient's glucose control, causing hypoglycemia; the insulin dose should be reduced.
 - (E) The patient was given the wrong medication and should return to the pharmacy for a drug examination by the pharmacist.
4. Because they are less dependent on glomerular filtration rate for elimination, which two opiates are generally considered safer in patients with CKD?

 - (A) Fentanyl and methadone
 - (B) Morphine and meperidine
 - (C) Propoxyphene and fentanyl
 - (D) Oxycodone and codeine
 - (E) Meperidine and hydromorphone

For answers, see page 47.

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Answers to the review questions that appear on page 36. The article on analgesic therapy in patients with chronic kidney disease appears on page 13.

1. (B) Stop ibuprofen and recheck laboratory values in 2 to 3 days.
2. (C) Selective serotonin reuptake inhibitors
3. (A) The patient is taking doses of oxycodone in excess of the prescribed dose.
4. (A) Fentanyl and methadone

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