

Haveles: Evolve Resources for Applied Pharmacology for the Dental Hygienist, 7th Edition

Chapter 02: Drug Action and Handling

Case Studies

Nate F. is a 56-year-old man who is visiting the dental clinic for treatment of an abscessed tooth. He was diagnosed with hepatitis C in 1996, which he contracted from his intravenous heroin addiction. He has been through a detoxification process and is currently taking Rebetrone (an antiviral drug) to slow the damage to his liver. He is in severe pain and needs pain medication, as well as a local anesthetic for the endodontic therapy.

1. The clinic dentist has prescribed 800 mg of aspirin for his pain. Which of the following dose alterations should be made?

- a. The dose should be increased.
- b. The dose should be decreased.
- c. No change in dose is indicated.
- d. A different medication should be prescribed.

ANS: B

Damage to Nate's liver has reduced his body's ability to break down the aspirin. The dose level should be lowered to compensate for his limited ability to metabolize the drug.

2. The clinic dentist administered a larger-than-usual dose of local anesthesia because of Nate's extreme pain. The dentist was correct in not prescribing an opioid because of the patient's history of substance abuse.

- a. Both statements are correct and related.
- b. Both statements are incorrect and related.
- c. The first statement is true, and the second statement is false; the statements are related.
- d. The first statement is false, and the second statement is true; the statements are related.

ANS: A

Both statements are correct and related. The inflammation caused by the abscess is going to require larger-than-normal doses of local anesthesia to relieve the pain because infection causes the acidity of the tissue to increase and the effect of local anesthetics to decrease. Patients who have a history of substance abuse should not be given opioid analgesics because of the potential for abuse.

3. In addition to the kidney, other pathways that will allow the aspirin and Rebetrone to be excreted include all *except* which of the following?

- a. Lungs
- b. Tears
- c. Biliary excretion through the feces
- d. Sweat
- e. Gastrointestinal tract

ANS: B

Extrarenal routes include the lungs, bile, gastrointestinal tract, sweat, saliva, and milk.

4. Nate's local anesthetic is administered by which route?

- a. Enteral
- b. Parenteral
- c. Biliary
- d. Subcutaneous

ANS: B

Parenteral administration bypasses the gastrointestinal tract and includes various injection routes, inhalation, and topical administration. The term *parenteral* usually refers to an injection.

5. Nate takes his Rebetrone by mouth. Advantages of this method of drug administration include all *except* which of the following?

- a. Large area of absorption in the intestine
- b. Convenient for patient
- c. Simple to administer
- d. Slower onset of drug action
- e. Blood levels are less predictable than parenteral administration

ANS: E

Blood levels obtained after oral administration are less predictable than those obtained parenterally, given the presence of food in the stomach, the pathologic condition of the gastrointestinal tract, the effects of gastric acidity, and passage through the hepatic portal circulation, which can alter blood levels. The oral route of administration is the simplest way to introduce a drug into the body, allowing many dose forms that are convenient and simple to administer. The small intestine has a large area of absorption. Oral administration produces a slower onset of action than parenterally administered agents.