# Narcotic Antagonists

# **Key Terms**

antagonist

# Chapter Objectives

On completion of this chapter, the student will:

- Discuss the uses, general drug action, general adverse reactions, contraindications, precautions, and interactions of the narcotic antagonists.
- Discuss important preadministration and ongoing assessment activities the nurse should perform on the patient taking the narcotic antagonists.
- List some nursing diagnoses particular to a patient taking a narcotic antagonist.
- Discuss ways to promote optimal response to therapy, how to manage adverse reactions, and important points to keep in mind when educating patients about the use of narcotic antagonists.

An **antagonist** is a substance that counteracts the action of something else. A drug that is an antagonist has an affinity for a cell receptor, and by binding to it, prevents the cell from responding. Thus, a narcotic antagonist reverses the actions of a narcotic. Specific antagonists have been developed to reverse the respiratory depression associated with the opiates. The two narcotic antagonists in use today are naloxone (Narcan) and naltrexone (ReVia; see the Summary Drug Table: Narcotic Antagonists). Naloxone is capable of restoring respiratory function within 1 to 2 minutes after administration. Naltrexone is used primarily for the treatment of narcotic dependence to block the effects of the opiates, especially the euphoric effects experienced in opiate dependence.

**USES** 

This drug is used for complete or partial reversal of narcotic depression, including respiratory depression. Narcotic depression may be due to intentional or accidental overdose (self-administration by an individual), accidental overdose by medical personnel, and drug idiosyncrasy. Naloxone also may be used for diagnosis of a suspected acute opioid overdosage.

If the individual has not taken or received an opiate,

## **NALOXONE**

# **ACTIONS**

Administration of naloxone prevents or reverses the effects of the opiates. The exact mechanism of action is not fully understood, but it is believed that naloxone reverses opioid effects by competing for opiate receptor sites (see Chap. 19). If the individual has taken or received an opiate, the effects of the opiate are reversed.

#### ADVERSE REACTIONS

naloxone has no drug activity.

Although not a true adverse reaction, abrupt reversal of narcotic depression may result in nausea, vomiting, sweating, tachycardia, increased blood pressure, and tremors.

# CONTRAINDICATIONS, PRECAUTIONS, AND INTERACTIONS

Naloxone is contraindicated in those with a hypersensitivity to the narcotic antagonists. Naloxone is used cautiously in those with a narcotic addiction. Naloxone

#### SUMMARY DRUG TABLE NARCOTIC ANTAGONISTS **GENERIC NAME** TRADE NAME **USES** ADVERSE REACTIONS **DOSAGE RANGES** nalmefene Revex Complete or partial Nausea, vomiting, Initial dose: 0.5 mg/70 kg nal'-me-feen reversal of opioid effects tachycardia, hypertension, IV PRN, second dose of return of postoperative pain, 1 mg/70 kg 2-5 min later; maximum dose, fever, dizziness 1.5 mg/70 kg naloxone Narcan Narcotic overdose, Abrupt reversal of 0.4-2 mg IV initially with hydrochloride postoperative narcotic narcotic depression additional doses nal-ox'-ohn depression may result in nausea, repeated at 2-3 min vomiting, sweating, intervals; smaller doses increased blood pressure, used for postoperative tachycardia narcotic depression Anxiety, difficulty sleeping, Maintenance treatment: naltrexone ReVia, Depade Narcotic addiction. hydrochloride alcohol dependence abdominal cramps, 50 mg PO daily or nal-trex'-ohn nasal congestion, joint 100 mg every other day, and muscle pain, nausea, or 150 mg PO every third day; 2 mL IV, SC vomiting, dizziness, irritability \*The term generic indicates the drug is available in generic form.

is used cautiously in patients with cardiovascular disease; those who are pregnant (Pregnancy Category B); and in infants of opioid-dependent mothers.

These drugs may produce withdrawal symptoms in those physically dependent on the narcotics. The patient must not have taken any opiate for the last 7 to 10 days. Naloxone may prevent the action of opioid antidiarrheals, antitussives, and analgesics. This drug is used cautiously during lactation.

if they use an opioid.

scheduled basis will not experience any narcotic effects

## ADVERSE REACTIONS

Administration of naltrexone may result in anxiety, difficulty sleeping, abdominal cramps, nasal congestion, joint and muscle pain, nausea, vomiting, dizziness, irritability, depression, fatigue, and drowsiness.

#### **NALTREXONE**

## **ACTIONS**

Naltrexone completely blocks the effects of IV opiates, as well as drugs with agonist-antagonist actions (butorphanol, nalbuphine, and pentazocine). The mechanism of action appears to be the same as that for naloxone.

## **USES**

Naltrexone is used to treat persons dependent on opioids. Patients receiving naltrexone have been detoxified and are enrolled in a program for treatment of narcotic addiction. Naltrexone, along with other methods of treatment (counseling, psychotherapy), is used to maintain an opioid-free state. Patients taking naltrexone on a

# CONTRAINDICATIONS, PRECAUTIONS, AND INTERACTIONS

Naltrexone is contraindicated in those with a hypersensitivity to the narcotic antagonists. Naltrexone is contraindicated during pregnancy (Category C). Naltrexone is used cautiously in those with a narcotic addiction; in patients with cardiovascular disease, acute hepatitis, liver failure, or depression; and in patients who are suicidal. Naltrexone is used cautiously during lactation.

Naltrexone may produce withdrawal symptoms in those physically dependent on narcotics. The patient must not have taken any opiate for the last 7 to 10 days. Concurrent use of naltrexone with thioridazine may cause increased drowsiness and lethargy. Naltrexone may prevent the action of opioid antidiarrheals, antitussives, and analgesics.

#### NURSING PROCESS

 The Patient Receiving a Narcotic Antagonist for Respiratory Depression

#### **ASSESSMENT**

#### **Preadministration Assessment**

Before the administration of naloxone, the nurse obtains the blood pressure, pulse, and respiratory rate and reviews the record for the drug suspected of causing the overdosage. If there is sufficient time, the nurse also should review the initial health history, allergy history, and current treatment modalities.

#### **Ongoing Assessment**

As part of the ongoing assessment during the administration of naloxone, the nurse monitors the blood pressure, pulse, and respiratory rate at frequent intervals, usually every 5 minutes, until the patient responds. After the patient has shown response to the drug, the nurse monitors vital signs every 5 to 15 minutes. The nurse should notify the primary health care provider if any adverse drug reactions occur because additional medical treatment may be needed. The nurse monitors the respiratory rate, rhythm, and depth; pulse; blood pressure; and level of consciousness until the effects of the narcotics wear off.

# Nursing Alert

The effects of some narcotics may last longer than the effects of naloxone. A repeat dose of naloxone may be ordered by the primary health care provider if results obtained from the initial dose are unsatisfactory. The duration of close patient observation depends on the patient's response to the administration of the narcotic antagonist.

#### **NURSING DIAGNOSIS**

Drug-specific nursing diagnoses are highlighted in the Nursing Diagnoses Checklist. Other nursing diagnoses applicable to these drugs are discussed in depth in Chapter 4.

#### **Nursing Diagnoses Checklist**

- Ineffective Airway Clearance related to administration of a narcotic (specify overdose, drug idiosyncrasy, or other cause)
- Risk for Impaired Gas Exchange related to decreased respiratory rate

#### **PLANNING**

The expected outcome for the patient with respiratory depression is an optimal response to therapy, which essentially is a return to normal respiratory rate, rhythm, and depth.

#### **IMPLEMENTATION**

#### Promoting an Optimal Response to Therapy

Depending on the patient's condition, the nurse may use cardiac monitoring, artificial ventilation (respirator), and other drugs during and after the administration of naloxone. It is important to keep suction equipment readily available because abrupt reversal of narcotic depression may cause vomiting. The nurse must maintain a patent airway and should suction the patient as needed.

If naloxone is given by IV infusion, the primary health care provider orders the IV fluid and amount, the drug dosage, and the infusion rate. Giving the drug by IV infusion requires use of a secondary line or IV piggyback.

# Nursing Alert

When naloxone is used to reverse respiratory depression and the resulting somnolence, the drug is given slow IV push until the respiratory rate begins to increase and somnolence abates. Giving a rapid bolus will cause withdrawal and return of intense pain.

The nurse monitors fluid intake and output and notifies the primary health care provider of any change in the fluid intake-output ratio. The nurse should notify the primary health care provider if there is any sudden change in the patient's condition.

#### **EVALUATION**

- The therapeutic effect is achieved.
- The patient's respiratory rate, rhythm, and depth are normal.
- A clear airway is maintained.

#### NURSING PROCESS

 The Patient Receiving a Narcotic Antagonist for Treatment of Opioid Dependency

#### **ASSESSMENT**

#### **Preadministration Assessment**

During the preadministration assessment, the nurse obtains a complete drug history. In addition, the nurse

performs a complete physical examination and psychological evaluation before initiating therapy. The extent of the pretreatment assessment is usually based on the guidelines set up by the clinic or agency dispensing the drug.

#### Ongoing Assessment

Each time the patient visits the outpatient clinic, the nurse evaluates the patient's response to therapy and looks for any signs that drug dependency might again be a problem.

#### **NURSING DIAGNOSES**

Drug-specific nursing diagnoses are highlighted in the Nursing Diagnoses Checklist. Other nursing diagnoses applicable to these drugs are discussed in depth in Chapter 4.

#### **Nursing Diagnoses Checklist**

- ✓ Ineffective Coping related to difficulty staying drug free
- ✓ Noncompliance related to anxiety, difficulty in staying drug free, other factors (specify)
- Risk of Ineffective Therapeutic Regimen Management related to indifference, requirements of treatment program, other factors (specify)

#### **PLANNING**

The expected outcomes of the person formerly dependent on opioids may include an optimal response to therapy, which includes compliance with the treatment program, remaining drug free, and an understanding of the drug rehabilitation program.

#### **IMPLEMENTATION**

#### Promoting an Optimal Response to Drug Therapy

Entering a program for drug dependency may cause great anxiety due to many factors. Examples of possible causes of anxiety include the socioeconomic impact of drug dependency, the effectiveness of the treatment program, and concern over remaining drug free. Individuals vary in their ability to communicate their fears and concerns. At times, the nurse may be able to identify those situations causing anxiety and explore possible solutions to the many problems faced by these patients.

One of the greatest problems associated with former drug dependency is remaining drug free. The nurse must follow precisely the administration techniques of the drug treatment program. Some people find it difficult to break away from situations, individuals, or pressures that promote drug use. Because of this, some opioid users entering a drug rehabilitation program may, in time, not report to the program or agency to receive

their drug and thus are more apt to return to the use of an opiate.

All staff members of the rehabilitation program should work to encourage adherence to the regimen and attempt to identify situations that may encourage a return to drug use.

#### **Educating the Patient and Family**

The nurse instructs patients under treatment for narcotic addiction to wear or carry identification indicating that they are receiving naltrexone. If the patient is taking naltrexone and requires hospitalization, it is important that all medical personnel be aware of therapy with this drug. Narcotics administered to these patients have no effect and therefore do not relieve pain. Patients receiving naltrexone may pose a problem if they experience acute pain. The primary health care provider must decide what methods must be used to control pain in these patients.

The nurse should teach the patient taking naltrexone the impact of therapy. While taking the drug, any use of heroin or other opiate by the patient results in no effect. In fact, large doses of heroin or other opiates can overcome the drug's effect and result in coma or death.

#### **EVALUATION**

- The therapeutic effect is achieved, and the patient remains drug free.
- The patient complies with the prescribed treatment regimen.
- The patient demonstrates an understanding of the therapeutic regimen and requirements of the rehabilitation program.

### Critical Thinking Exercises

- 1. Jerry Jones is to begin receiving methadone for the treatment of heroin dependency. Jerry asks why methadone, a narcotic, is effective in the treatment of narcotic dependency. How would you explain this to the patient? What information would be important to give this patient while he is in the methadone program?
- Discuss important preadministration and ongoing nursing assessments you would make when giving a patient naloxone for severe respiratory depression caused by morphine.

## Review Questions

- 1. Which narcotic antagonist would most likely be prescribed for treatment of a patient who is experiencing an overdose of a narcotic?
  - A. naltrexone
  - B. naloxone

- C. naproxen
- D. nifedipine
- 2. When given a narcotic analgesic for acute pain, a patient taking naltrexone for narcotic addiction
  - A. may have an acute hypersensitivity reaction
  - B. is at increased risk for respiratory arrest
  - C. will not have pain relief
  - D. will have additive effects of the narcotic
- 3. When naltrexone is administered with thioridazine, the nurse monitors the patient for
  - A. elevated temperature
  - B. severe occipital headache

- C. increased blood pressure
- D. increased drowsiness

# Medications Dosage Problems

- 1. A patient is prescribed 0.8 mg naloxone IM for an overdose of morphine. Available is a vial with 1 mg/mL. The nurse administers \_\_\_\_\_.
- 2. The physician prescribes naltrexone (ReVia) 25 mg PO initially. The nurse is to observe the patient carefully and if no withdrawal signs appear, 100 mg PO of the drug is prescribed every other day. On hand is naltrexone 50-mg tablets. The nurse administers \_\_\_\_ as the initial dose.