

How Can You Avoid This Medication Error?

Mr. Fell, an elderly man with a history of hypertension and diabetes, has a cold. A resident, who does not know Mr. Fell well, prescribes pseudoephedrine (Sudafed) to relieve nasal congestion. You administer this medication as ordered. Discuss the error and the impact it will have on Mr. Fell.

Antitussives

Antitussive agents suppress cough by depressing the cough center in the medulla oblongata or the cough receptors in the throat, trachea, or lungs. Centrally acting antitussives include narcotics (eg, codeine, hydrocodone) and non-narcotics (eg, dextromethorphan). Locally acting agents (eg, throat lozenges, cough drops) may suppress cough by increasing the flow of saliva and by containing demulcents or local anesthetics to decrease irritation of pharyngeal mucosa. Flavored syrups are often used as vehicles for other drugs.

The major clinical indication for use of antitussives is a dry, hacking, nonproductive cough that interferes with rest and sleep. It is not desirable to suppress a productive cough because the secretions need to be removed. Although antitussives continue to be used and some people report beneficial effects, some research studies indicate that cough medicines are no more effective than placebos in children or adults. The American Academy of Pediatrics and several other groups advise against the use of antitussives.

Expectorants

Expectorants are agents given orally to liquefy respiratory secretions and allow for their easier removal. Guaifenesin is the most commonly used expectorant. It is available alone and as an ingredient in many combination cough and cold remedies, although research studies do not support its effectiveness and many authorities do not recommend its use.

Mucolytics

Mucolytics are administered by inhalation to liquefy mucus in the respiratory tract. Solutions of mucolytic drugs may be nebulized into a face mask or mouthpiece or instilled directly into the respiratory tract through a tracheostomy. Sodium chloride solution and acetylcysteine (Mucomyst) are the only agents recommended for use as mucolytics. Acetylcysteine is effective within 1 minute after inhalation, and maximal effects occur within 5 to 10 minutes. It is effective immediately after direct instillation. Oral acetylcysteine is widely used in the treatment of acetaminophen overdosage (see Chap. 7).

Cold Remedies

Many combination products are available for treating symptoms of the common cold. Many of the products contain an

antihistamine, a nasal decongestant, and an analgesic. Some contain antitussives, expectorants, and other agents as well. Many cold remedies are over-the-counter (OTC) formulations. Commonly used ingredients include chlorpheniramine (antihistamine), pseudoephedrine (adrenergic nasal decongestant), acetaminophen (analgesic and antipyretic), dextromethorphan (antitussive), and guaifenesin (expectorant). Although antihistamines are popular OTC drugs because they dry nasal secretions, they are not recommended because they can also dry lower respiratory secretions and worsen secretion retention and cough.

Many products come in several formulations, with different ingredients, and are advertised for different purposes (eg, allergy, sinus disorders, multisymptom cold and flu remedies). For example, allergy remedies contain an antihistamine; “nondrowsy” or “daytime” formulas contain a nasal decongestant, but do not contain an antihistamine; PM or “night” formulas contain a sedating antihistamine to promote sleep; pain, fever, and multisymptom formulas usually contain acetaminophen; and “maximum strength” preparations usually refer only to the amount of acetaminophen per dose, usually 1000 mg for adults. In addition, labels on OTC combination products list ingredients by generic name, without identifying the type of drug. As a result of these bewildering products, consumers, including nurses and other health care providers, may not know what medications they are taking or whether some drugs increase or block the effects of other drugs.

INDIVIDUAL DRUGS

Individual decongestants, antitussives, expectorants, and mucolytics are listed in *Drugs at a Glance: Nasal Decongestants, Antitussives, and Expectorants*; selected combination products are listed in Table 49–1.



Herbal and Dietary Supplements

Several supplements are commonly used to prevent or treat symptoms of the common cold. In general, there is minimal or no support for such use.

Echinacea preparations differ in chemical composition depending on which of the nine species or parts of the plant (eg, leaves, roots, whole plants) are used, as well as the sea-

Nursing Notes: Apply Your Knowledge

Joan, a college student, comes to the health clinic with cold symptoms (productive cough, low-grade fever, continuous nasal discharge, and general malaise and discomfort). She states she went to the drugstore to buy some cold medicine, but there were so many different preparations that she was confused. Discuss your recommendations for Joan, with their underlying rationale.