

Exam 2

Chapter 36

Antihistamines,
Decongestants, Antitussives,
and Expectorants

Objectives

- ❑ Provide examples of antihistamines- sedating & non-sedating
- ❑ Contrast antihistamines, decongestants, antitussives, expectorants
- ❑ MOA
- ❑ Therapeutic effects
- ❑ Cautions & contraindications
- ❑ Drug interactions, antidotes
- ❑ Develop a nursing care plan for patients taking antihistamines, decongestants, antitussives, expectorants

Understanding the Common Cold

Most caused by viral infection (rhinovirus or influenza virus)

Virus invades tissues (mucosa) of upper respiratory tract, causing upper respiratory infection (URI)

Treatment of the Common Cold

Involves combined use of antihistamines, nasal decongestants, antitussives, and expectorants

Treatment is *symptomatic* only, not curative

only treats symptoms, NOT virus

Symptomatic treatment does not eliminate the causative pathogen.

The common cold is treated with empiric therapy, which means

- A. the medications cure the cold.
- B. the medications only treat the symptoms.
- C. herbal medications are useful to eliminate symptoms.
- D. it is prevented with careful use of medications.

Antihistamines

? Drugs that directly compete with histamine for specific receptor sites

? MOA -

? Two histamine receptors

? H₁ (histamine 1) - *caps dilation*

? H₂ (histamine 2) - *smooth muscle/GI secretion*

Histamines = contraction & dilation

Antihistamines = relaxation & constricts



Anaphylaxis: Severe Allergic Reactions

Release of excessive amounts of histamine can lead to:

Constriction of smooth muscle, especially in the stomach and lungs

||
GI

||
SOB

Increase in body secretions = swelling

Vasodilatation = BP change



Major inflammatory mediator in many allergic disorders

Allergic rhinitis (e.g., hay fever and mold, dust allergies)

Anaphylaxis

Angioedema

Antihistamines and Histamine Antagonists

H₁ antagonists
(also called
H₁ blockers)

Hay fever, allergic Rhinitis

Examples:
chlorpheniramine,
fexofenadine (Allegra),
loratadine (Claritin),
cetirizine (Zyrtec),
diphenhydramine (Benadryl)

H₂ blockers
or H₂
antagonists

Used to reduce gastric acid
in peptic ulcer disease

Examples: cimetidine
(Tagamet), ranitidine
(Zantac), famotidine
(Pepcid), nizatidine (Axid)

Histamine vs. Antihistamine Effects

? Cardiovascular (small blood vessels)

? Histamine effects - dilation of BV = fluid leakage resulting in swelling

? Antihistamine effects - ↓ Dilation = ↑ permeability = ↓ Swelling

? Smooth muscle (on exocrine glands)

? Histamine effects - ↑ Salivation, ↑ Bronch. secretion

? Antihistamine effects ↓ saliv. ↓ Bronch secretion

Dries it out = anticholinergic affect

? Immune system (release of substances commonly associated with allergic reactions)

? Histamine effects

? Antihistamine effects

*Benadryl for Allergic reaction; causes ↓ CNS; take @ night if possible
Claritin causes less sedation than Benadryl*

Antihistamine s: Indications

Skin:

Anticholinergic: *Parkinsons Disease*

Sedative:

Management of:

- Nasal allergies
- Seasonal or perennial allergic rhinitis (hay fever)
- Allergic reactions

Antihistamines: Contraindications



**Known drug
allergy**



**Narrow-angle
glaucoma**



**Cardiac
disease,
hypertension**



**Bronchial
asthma, chronic
obstructive
pulmonary
disease (COPD)**



**Adverse
Effects?**

Anticholinergic
(drying) effects: most
common

Caution w/ elderly due to dehydration

Before administering an antihistamine to a patient, it is most important for the nurse to assess the patient for a history of which condition?

- A. Chronic urticaria
- B. Motion sickness
- C. Urinary retention
- D. Insomnia

Antihistamines: Two Types

Traditional:

more likely to cause ↓ CNS

- brompheniramine, chlorpheniramine, dimenhydrinate, diphenhydramine, meclizine, and promethazine

Nonsedating:

- loratadine, cetirizine, and fexofenadine

Antihistamines : Nursing Implications

- ? Instruct patients to report ?
- ? Instruct patients to avoid driving or operating heavy machinery *w/ Sedating or Traditional*
- ? Instruct patients not to take these medications with other prescribed or OTC
- ? GI upset, how do you take? *Take w/ food*
- ? What do you do for dry mouth? *Hard Sugar free candy*

Excessive nasal
secretions = *congestion*

Inflamed and swollen
nasal mucosa

Primary causes

Allergies

URIs (common cold)

Nasal Congestion

Decongestants: Types

? Three main types are used:

? Adrenergics - *alpha* *adrenergic*

? Largest group

*constricts arterioles
in nose*

? Sympathomimetics



? Anticholinergics

? Less commonly used

? Parasympatholytics



? Corticosteroids

? Topical, intranasal steroids

Afvin = NO MORE than 3 days

Nasal Decongestants:



MOA- Site of action: blood vessels surrounding nasal sinuses
Adrenergics
Nasal steroids

Effects-

Indications- *congestion, sinusitis, rhinitis*

Contraindications

*Dont use more than 3 day due to rebound
Avoid in PT w/ HTN*

Nasal Decongestants: Adverse Effects

*Not associated
w/ Rebound*

Adrenergics Steroids

Nervousness Local mucosal dryness

Insomnia and irritation

Palpitations

Tremors

(Systemic effects caused by adrenergic stimulation
of the heart, blood vessels, and CNS)

*Teaching

Before administering an adrenergic decongestant, it is most important for the nurse to assess the patient for a history of

- A. cataracts.
- B. gastric ulcer.
- C. diabetes mellitus.
- D. hypothyroidism.

Antitussives



- ? Drugs used to stop or reduce coughing
- ? Opioid and nonopioid
codine = ↓ CNS
- ? Used only for nonproductive coughs!
- ? May be used in cases when coughing is harmful
(surgery)

Antitussives: Mechanism of Action

Opioids

- Suppress the cough reflex by **direct action on the cough center in the medulla** *codine*
- Analgesia- *CNS ↓*

Nonopioids

- Dextromethorphan: works in the same way
- No CNS depression

Benzonatc - No contra, causes sedation & constipation

Dextromethn - hyperthyroidism, MAOI

Opioid Antitus - alcohol
or CNS & meds

Antitussives:

? Indications

- ? Used to stop the cough reflex when the cough is nonproductive or harmful

? Contraindications

- ? Drug allergy
- ? Opioid dependency
- ? Respiratory depression

? Adverse effects

Antitussives: Nursing Implications

- ❑ Report any of the following symptoms to the caregiver:
 - ❑ Cough that lasts more than 1 week
 - ❑ Persistent headache
 - ❑ Fever
 - ❑ Rash
- ❑ Antitussive drugs are for nonproductive coughs.
- ❑ Monitor for intended therapeutic effects.

A 94-year-old patient has a severe dry cough. He has coughed so hard that the muscles in his chest are hurting. He is unsteady on his feet and slightly confused. Which drug would be the best choice for this patient's cough?

- A. Benzonatate (Tessalon Perles) capsules
- B. Dextromethorphan (Robitussin-DM) oral solution
- C. Codeine cough syrup
- D. Guaifenesin (Mucinex)

Expectorants

Guaifenesin



- ? Drugs that aid in the expectoration (removal) of mucus
- ? Reduce the viscosity of secretions
- ? Disintegrate and thin secretions
 - ? Example: guaifenesin
- ? MOA - 4 hydration to thin mucus
- ? Effects - thins mucus so it can be coughed up
- ? Indication - productive cough

Expectorant S: Nursing Implications

Expectorants should be used with caution in older adults and patients with asthma or respiratory insufficiency.

Patients taking expectorants should receive more fluids, if permitted, to help loosen and liquefy secretions.

Report a fever, cough, or other symptoms lasting longer than 1 week. *Change in mucous color*

Monitor for intended therapeutic effects.

A patient with a tracheostomy developed pneumonia. It is very difficult for the patient to cough up the thick, dry secretions he has developed. The nurse identifies which drug as being most effective in helping this patient?

- A. Benzonatate (Tessalon Perles) capsules
- B. Dextromethorphan (Robitussin-DM) oral solution
- C. Codeine cough syrup
- D. Guaifenesin (Mucinex)

Recap Objectives

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