RESPIRATORY AGENTS

Respiratory problems usually present with one (or more) of three different modalities, an increase in bronchiole constriction, increase in mucus production and edema of the airways. This classification of drugs may be broken down into these three primary pathologies. First, drugs which affect the smooth musculature of the bronchioles, bronchodilators. Second, those drugs which act in some way on the patient’s secretions (antitussive, expectorant, or mucolytic). Third, agents which reduce the inflammation of the airways. Finally, agents which control the response of allergic reactions.

BRONCHODILATORS AND STEROIDS

ADRENERGIC AGONISTS

Mechanism: Causes bronchodilation due to stimulating production of cAMP

Indication: Bronchospasms

Examples: Albuterol, Salmeterol, Epinephrine, Isoetharine, Ephedrine Sulfate, Terbutaline

Side effects: Anxiety, tremor, nervousness, palpitations, tachycardia

METHYLXANTHINES

Mechanism: Inhibits breakdown of cAMP

Indications: Bronchospasm

Examples: Slo-bid, Theophylline, Aminophylline

Side Effects: as above

ANTI-INFLAMMATORY

Mechanism: Inhibits the release of kinins, serotonin, and histamines that precipitate inflammation that leads to bronchoconstriction due to edema.

Indications: Bronchoconstriction due to edema

Examples: Beclomethasone, Cromolyn sodium, Dexamethasone, Flunisolide

Side effects: If used as an inhaler, irritation to the mouth and throat
MUCOLYTICS AND COUGH SUPPRESSANTS

ANTITUSSIVES

Mechanism: Depress cough reflex located in the medulla
Indications: Nonproductive cough
Examples: Codeine phosphate, Benzonatate, Dextramethorphan
Side effects: Drowsiness, dizziness

EXPECTORANT

Mechanism: Decreases the thickness of secretions by increasing the amount of fluid in the respiratory tract.
Indications: Upper Respiratory Infections
Examples: Guaifenesin
Side Effects: Vomiting, Diarrhea, Drowsiness

MUCOLYTIC

Mechanism: Decreases the thickness of secretions by dissolving the glycoprotein bonds in the mucus.
Indications: Abnormally thick secretions, Acetaminophen overdose
Examples: Acetylcysteine
Side Effects: Nausea and Vomiting, Severe rhinorrhea

ANTIHISTAMINES

Mechanism: Blocks the release of histamine from the mast cells
Indications: Edema due to an allergic reaction
Examples: Diphenhydramine
Side effects: Drowsiness, Tachycardia
COMMONLY TRANSPORTED RESPIRATORY PHARMACOLOGIC AGENTS

This section is left blank for the services medical director or training officer to review those agents which are commonly used for transport. Topics which should be covered include dosages, indications, side effects, and any transport considerations.