

I. RESPIRATORY SYSTEM

A. Respiratory diseases

1. Non-infectious

2. Infectious

3. Ventilation Drive

B. Respiratory Drugs

Metered-Dose Inhalers (MDI)

advantages

disadvantages

Non-infectious Respiratory Disease Agents

1. Sympathomimetic Agents (see Chapter 4)

Mechanism of action:

Uses:

ADR's:

Drugs:

short-acting: albuterol, ProAir HFA, Proventil HFA, Ventolin HFA,

Combivent: (albuterol + ipratropium)

long-acting: Serevent, Advair HFA: (salmeterol + fluticasone)

2. Corticosteroids (see Chapter 18)

Mechanism of action

Uses:

ADR's

Drugs: fluticasone (Advair discus, Flonase, Flovent)

mometasone (Nasonex)

budesonide (Rhinocort, Pulmicort)

triamcinolone (Nasacort)

prednisone

3. Leukotriene Modifiers

Mechanism of action

Uses:
ADR's

Drugs: montelukast (Singulair), zileutin (Zyflo), zafirlukast (Accolate)

4. Mast Cell Degranulation Inhibitors

Mechanism of action

Uses:

ADR's

Drugs: Cromolyn (Nasalcrom) [OTC]

5. Methylxanthines

Mechanism of action

Uses:

ADR's

Drugs: theophylline, aminophylline

6. Anticholinergics (see Chapter 4)

Mechanism of action

Uses:

ADR's

Drugs: ipratropium (Atrovent), Combivent (with albuterol), tiotropium (Spiriva)

7. Immune Response Modifiers

MA:

Uses:

ADR's:

Drugs: omalizumab (Xolair)

Infectious Respiratory Disease Agents

1. Antibacterials

2. Antivirals

3. Antifungals

Upper Respiratory Infectious Agents

1. Nasal decongestants

MA:

ADR's:

Drugs: (see chapter 4)

phenylpropanolamine, pseudoephedrine (Sudafed), phenylephrine (Neo-Synephrine)

2. Expectorants

MA

ADR's

Drugs: Guaifenesin [OTC]

4. Mucolytics

MA

ADR's

Drugs: acetylcysteine

5. Antitussives

MA

ADR's

Drugs: dextromorphan, codeine

DENTAL IMPLICATIONS of respiratory drugs

- About 10% of steroid-dependent asthmatics are allergic to *sulfites* (allergy to sulfites is an absolute contraindication to vasoconstrictor)
- pt should bring inhaler to appointment and have ready access to inhaler (acute asthmatic attack should be treated with fast-acting β_2 agonist)
- look for oral candidiasis with inhaled steroid use
- inhalers (all drugs) can cause xerostomia
- ASA classification of respiratory diseases

Steroid-Dependent Asthma

Definitions:

1. **The Asthma Center** specialists consider you "Steroid Dependent" if you receive corticosteroids in the following manner:

- frequent, short term **oral** corticosteroid treatment bursts in the past 12 months
- regular use of high dose **inhaled** corticosteroids in the past 12 months
- regular use of **injected** long acting corticosteroids
- daily use of **oral** corticosteroids
- alternate-day **oral** corticosteroids
- prolonged use of **oral** corticosteroids in the past year

2. "A practical definition, useful for the clinician, is any patient who requires daily oral steroids (or very high doses of high-potency inhaled steroids) to minimize the frequency of asthma exacerbations. These patients are considered either steroid-dependent (normal pulmonary function maintained only if taking oral steroids) or steroid-resistant (poor pulmonary function despite treatment with oral steroids)."

from *Severe Steroid-Dependent Asthma: Therapeutic Role of High-Dose Intravenous Immunoglobulin* Nathan Rabinovitch, MD, Erwin W. Gelfand, MD Medscape General Medicine. 2000;2(1) © 2000 Medscape

Examples:

A. Inhaled Corticosteroids

1. beclomethasone (QVAR) 40 mcg/puff 80 mcg / puff
2. budesonide (Pulmicort) 200 mcg, 250 mcg, 500 mcg
3. ciclesonide (Alvesco) 80 mcg, 160 mcg
4. flunisolide (Aerobid) 250 mcg
5. fluticasone
 - MDI: Flovent HFA 44 mcg, 110 mcg, 220 mcg
 - DPI: Advair HFA 100 mcg, 250 mcg, 500 mcg
6. mometasone furoate (Asmanex Twisthaler) 110 mcg, 220 mcg
7. triamcinolone (Azmacort) 200 mcg

B. Oral Corticosteroids

1. prednisone
2. prednisolone
3. dexamethasone
4. methylprednisolone

C. What is a high dose of inhaled corticosteroid?

	Beclomethasone	Budesonide	Flunisolide	Fluticasone (MDI)	Fluticasone (DPI)	Triamcinolone
Low dose, for mild, persistent asthma	168 - 504 mcg	200-400 mcg	500 - 1000 mcg	88 - 264 mcg	100 - 300 mcg	400 - 1000 mcg
Medium dose, for moderate, persistent asthma	504 -840 mcg	400 - 600 mcg	1000 - 2000 mcg	264 - 660 mcg	300 - 600 mcg	1000 - 2000 mcg
High dose , for severe, persistent asthma	> 840 mcg / day	> 600 mcg/day	> 2000 mcg/day	> 660 mcg/day	> 600 mcg/day	> 2000 mcg/day