

Class	Action	S/E	Meds	Used In	Considerations
Beta₂ Adrenergic Agonists	<p>B₁ = heart → circulatory/cardiac S/E B₂ = lungs → short-acting & long-acting</p> <p>* Enhances bronchodilation</p>	<p>Nervousness Tremors Restlessness Insomnia Headache N, V Hyperglycemia Muscle cramps Hypokalemia</p>	<p>albuterol (Proventil, Ventolin) – “rescue asthma”, use to 1st open up & then use steroid for inflammation (anti-cholinergic agent)</p> <p>metaproterenol sulfate (Alupent, Metaprel) – acute (ie. COPD, bronchospasm)</p> <p>levalbuterol (Xopenex)</p> <p>terbutaline</p> <p>epinephrine (ER; anaphylactic reaction)</p>	<p>asthma bronchospasms COPD pneumonia</p>	<p>↑ HR, ↑ BP (tachycardia)</p> <p>Check U/O, VS, bowel sounds, lung sounds</p> <p>Monitor K⁺ & BG</p> <p>Rinse mouth to prevent thrush</p>
Anti-Inflammatory (corticosteroids; used in conjunction with Beta₂)	<p>↓ inflammation & edema that causes mucus production</p>	<p>Cushings syndrome Ulcers Na⁺ retention (looks puffy; edema; abd obesity) ↓ K⁺ Dry Mouth Thrush & fungal inf.</p>	<p>Prednisone Flovent (inhal) Flonase (inhal) methylprednisone solumedrol</p>	<p>L/T COPD</p>	<p>Do not D/C suddenly!</p> <p>Used L/T to prevent next attack – not for acute.</p>
Anti-Cholinergic Agents	<p>Dilates bronchioles Causes drying (systemic) Blocks acetylcholine</p>	<p>Dry cough Bad taste in mouth Flushed skin</p>	<p>ipratropium bromide (Atrovent) MDI Combivent/albuterol Atropine</p>	<p>Bronchospasm assoc c COPD Pneumonia</p>	<p>Caution in clients c narrow angle glaucoma & cardiac d/o.</p> <p>Check VS, lung sounds.</p> <p>Give 5 min before steroids.</p>
Methylxanthine Derivatives	<p>↑ levels of cAMP = bronchodilation Relaxes smooth muscles Better diaphragm mobility = better cough Improves activity intolerance</p>	<p>Gastric px (↑ gastric secretions) ↑ HR, ↑ BP ↓ K⁺</p>	<p>aminophylline (IV) → acute exacerbation</p> <p>theophylline (PO) → L/T therapy</p> <p>caffeine</p>	<p>COPD Asthma (not as often)</p>	<p>Monitor theo levels (10-20 normal)</p> <p>Not for: seizure d/o, cardiac dysr, renal & hepatic dysf (can become toxic).</p>
Leukotriene Modifiers (Antagonists)	<p>↓ inflammation w/l bronchial tubes & airways</p>	<p>Nasal congestion Cough, Sore throat Diarrhea, Influenza Fatigue Dental px</p>	<p>zafirlukast (Accolate) montelukast (Singular)</p>	<p>Prophylaxis & maintenance tx for chronic asthma (not acute)</p>	<p>Take in evening for max effectiveness.</p> <p>Do not take on empty stomach.</p>

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Leukotriene Modifiers (Inhibitors)	↓ inflammation in airways ↓ bronchoconstriction	Hepatotoxicity	zileuton (Zyflo)	Prophylaxis & maint tx for chronic asthma.	Monitor liver enzymes closely.
Anti-tussives*	↓ viscosity of secretions Suppresses cough reflex	Nausea Dizziness Drowsiness Sedation – lots of contraindications!	Narcotic: codeine guaifenesin + codeine tessalon (“pearls”) Nonnarcotic: dextromethorphan hydrobromide (Benlyn) i.e. Robitussin DM	Temporary suppression of non-productive cough.	Hallucinations in ↑ doses. Stay well hydrated.
Expectorants*	Loosens bronchial secretions so they can be eliminated by coughing.	N, V	guaifenesin (Robitussin, Anti-Tuss, Glycotuss)	Dry, non-productive cough.	Can be combined c other cold remedies. Take c H ₂ O to loosen mucus. Stay well hydrated.
Combination Meds (Beta₂ & Anti-Cholinergic)	↑ bronchodilation Duration of action prolonged ↑ FEV ₁		ipratropium c albuterol Combivent (atrovent + albuterol)	acute asthma & COPD	
Combination Meds (Beta₂ & Anti-Inflammatory)			Flonase Advair		
Anti-Tuberculars (1st line & 2nd line)	Inhibit bacterial cell wall synthesis	Peripheral neuropathy Ototoxicity (streptomycin) Drowsiness Tremors Rash Blurred vision N, V Dry mouth Constipation	1 st line: isoniazid (INH) rifampin rifabutin rifapentine pyrazinamide ethambutol streptomycin 2 nd line: para-aminosalicylic acid kanamycin cycloserine ethionamide capreomycin pyrazinamide	TB	Contraindicated for severe hepatic disease.

* Most patients need both.