

Respiratory Pharmacology

Anti Inflammatory

Corticosteroids

- Fluticasone (florent)
- Hydrocortisone (solu-cortef)
- Beclomethasone (Qvar)

Block inflammatory response in asthma patients

PDE-4

- Roflumilast - severe COPD patients only
- (Daliresp)

Monoclonal Antibodies

- Omalizumab - Low IgE attach to mast cells
- (Xolair)
- Mepolizumab - block IL-5 response + inflammatory
- (Nucala)
- Reslizumab - Production of eosinophils
- (cinqair)

Leukotriene Modifiers

- Montelukast (singulair)
- Zileuton (zyflo cr)

Block action of leukotrienes bronchoconstrict and inflammation

Bronchodilators

Beta2 - ADrenergic Agonists

- SABA
- short acting B adr agonists
- LABA
- long acting B adr agonists

Anticholinergics

- more effective in COPD
- SAMA
- ipratropium(Atrovent)
 - causes dry mouth + constipation

Methylxanthines

- LABA
- tiotropium(Spiriva)
 - Avoid contact w/ eyes
- can interact with many other drugs
- Treatment based on FEV1
- FEV1 60-80%
 - Inhaled bronchodilators

- FEV <60%
 - Bronchodilators, anticholinergics, corticosteroids

Pharmacology

Pharmaceutic phase

- Drug becomes soluble liquid
- Enteric coated
 - Tablets don't dissolve until the small intestine

Pharmacokinetic phase

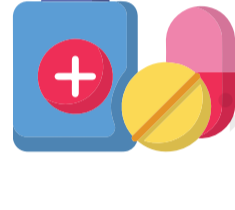
- A, D, M, E
- First pass effect
 - the drug's concentration is greatly decreased before being released into circulation because of liver metabolism
- Onset
 - time between admin & start of therapeutic effect
- Peak
 - Absorption rate is equal to the elimination equal
- Duration
 - The full length of time a drug is therapeutic
- 1/2 Life
 - The time it takes for a drug concentration to be 50%

Pharmacodynamic phase

- Receptors
 - agonist
 - Binds w/ a receptors & stimulates a therapeutic response
 - antagonist
 - Binds with receptors but prevents a Therapeutic effect
- # of available receptors also influences the effect of a drug
- Drugs also can affect cellular environment as opposed to binding to cell receptors
 - ex) pH, osmotic pressure, absorption or lubrication

Five + One Rights of Med Admin

Right Med



Right Route



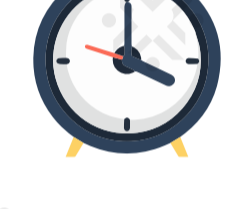
Right Dose



Right Patient



Right Time



Right Documentation



Important Vocabulary

Hypersensitivity reaction

Allergic reaction

Anaphylactic shock

Very serious allergic reaction that can cause dyspnea, low BP, nausea, hives and cardiac arrest

Drug tolerance

Low response to a drug often requiring high doses

Cumulative effect

decreased metabolism low excretion caused by poor liver and kidney function which can lead to toxicity

Factors Influencing Response

- Age
- Sex
- Weight
- Route
- Disease

Parenteral Administration

Intradermal

25-28 gauge / 5/16" 5° - 15° angle forearm

- Should form a bleb
- Used for sensitivity tests
- Longest absorption time

Subcutaneous

25-28 gauge / 5/8" - 1 1/2" 45° - 90° angles

- Lateral thigh
- Abdomen
- Fatty areas

- if you can pinch
- 1" - 46°
- 2" - 90°
- Insulin & heparin are delivered SQ

Intramuscular

18-25 gauge / 5/8 - 1 1/4" 90° angle

- Ventrogluteal
- Deltoid
- Vastus Lateralis

- Faster absorption
- 2-5 mL can be given
- z track method is recommended

Non-parenteral Administration

Oral

- Only scored pills can be split
- Never crush enteric coated or extended release
- Assess swallowing ability before admin
- Measure liquids at eye level

Inhalation

- Pt. should rinse mouth after steroid
- Hold breath as long as is comfortable
- 20-30 seconds between puff
- 2-5 mins between different meds
- Assess respirations

Inhalation

- below
- tongue
- cheeks
- Don't chew until fully dissolved

Eye Administration

- ntraocular disk should sit below iris on sclera
- Systemic absorption is avoided by pressing on nasolacrimal sac
- Ointment should be applied inner - outer
- Hold dropper 1/2" above the eye

Nose Administration

- Have pt. lie supine for 5 minutes after
- Blow nose beforehand unless contraindicated

Vaginal

- Leave for 10 minutes
- Admin in dorsal recumbent
- Insert 2" - posterior wall

Rectal

- Leave in for 5 minutes
- Lubricate
- nsert 4" - past sphincter
- Sims position