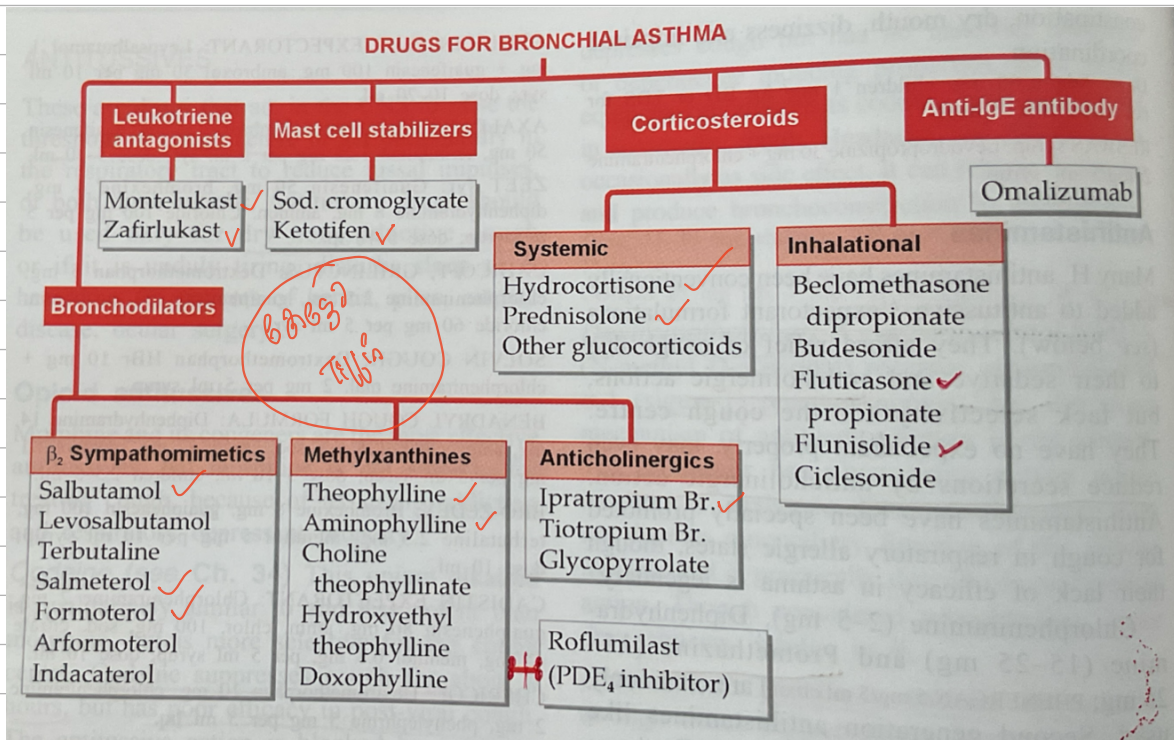


Respiratory system



MANAGEMENT OF STATUS ASTHMATICUS

- Hydrocortisone hemisuccinate 100mg IV stat followed by 100-200mg 4-8 hourly infusion
- Nebulized salbutamol (2.5-5mg) + ipratropium bromide (0.5mg) intermittent inhalations driven by O₂
- High flow humidified O₂ inhalations
- Salbutamol/terbutaline 0.4mg IM/SC may be added, since inhaled drug may not reach smaller bronchi due to severe narrowing
- Intubation & mechanical ventilation, if needed
- Treat chest infection with intensive antibiotic therapy
- correct dehydration & acidosis with saline + NaHCO₃

ROLE OF CORTICOSTEROIDS

- They benefit by inhibiting inflammatory cytokine production & eosinophilic, lymphocytic infiltration of lungs.
- Reduce bronchial hyperactivity, mucosal edema & suppress inflammatory response to A1:AB reaction or to other trigger stimuli
- Corticosteroids affords more complete & sustained symptomatic relief than bronchodilators.

METHYLXANTHINES

ACTIONS

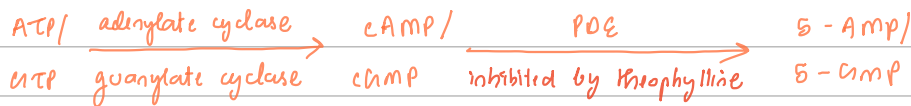
- CNS - Caffeine & theophylline are CNS stimulants (i.e. higher centres) ✓

- Caffeine produces a sense of well being, alertness, beats boredom, improves performance & increase motor activity
- Caffeine more active than theophylline in producing these effects.
- CVS - directly stimulates heart & ↑ CO
 - ↑ HR by cardiac action, but ↓ it by causing vagal stimulation
 - Tachycardia not with theophylline
 - theophylline dilate systemic blood vessels
- Smooth muscles - All smooth muscles are modestly relaxed
 - Theophylline is more potent bronchodilator than caffeine

Tachycardia
Relaxation of smooth muscle
Bronchodilation

MOA

- * Release of Ca^{2+} from sarcoplasmic reticulum, esp in skeletal & cardiac muscle.
- * Inhibition of phosphodiesterase (PDE) which degrades cyclic nucleotides intracellularly.



- Cyclic nucleotides is increased
- Bronchodilation, cardiac stimulation & VO occurs & mediator release inhibited when cAMP level ↑.
- * Blockade of adenosine receptors
 - Adenosine acts as local mediator in CVS, CNS & other organs.
 - Adenosine causes contraction of smooth muscles, esp bronchial
 - ↳ methylxanthines produces opposite effects.

Theophylline

- Only theophylline is used in bronchial asthma & COPD

AOR

- Narrow margin of safety
- Headache & nervousness & nausea
- CNS toxicity more liable in children
- gastric pain (oral), local inflammation (with suppositories) & pain @ site of IM
- Pericardial pain ← Rapid IV injections

Uses

- Bronchial asthma & COPD