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Bronchial Asthma:

occur due to impairment of Airflow due to contraction of bronchial smooth Muscles, swelling of bronchial Mucosa And ↑ mucosal secretion.

DOC

CLASSIFICATION : - Refer kdt.

↳ β_2 sympathomimetics → salbutamol, Levosalbutamol Tubutaline.

Mode of Action

Act by binding to β_2 Receptor in the bronchial smooth Muscle And Mast cell.

↓

↑ cAMP → • Bronchodilation
• Inhibit the Release of histamine SRS-A from mast cell
• Promote mucociliary clearance.

Salbutamol And tubutaline:

⇒ highly selective β_2 Agonist
⇒ selectivity is ↑ed by Inhaling (pMDI)
⇒ bronchodilation within 5 min And Action last for 2-4 hours.
⇒ It is short Acting β_2 agonist (SABA)
⇒ Inhaled Levo And Racemic salbutamol are most popular for quick Reversal of bronchospasm.

✱ ⇒ Repeated use cause down Regulation of β_2 Receptor

IR → Orally → undergo presystemic metabolism.

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so long term f/f Advised with Inhaled corticosteroid with LABA (salmeterol)

ADR

→ Palpitation, Restless, throat irritation; Anticholinergic

→ muscle tremor - given orally.

44 Bambuterol - nocturnal And COPD
single dose.

THEOPHYLLINE - Methylxanthines:

→ MOA:

ⓐ Release of Ca^{2+} from sarcoplasmic Reticulum → several thousand times

Ⓑ Inhibition of phosphodiesterase (PDE) → several therapeutic Range
↳ which degrade CAMP & GMP.

↓ lead to

↑CAMP level

→ same effect As sympathomimetics

© Blockade of Adenosine Receptor
↳ Adenosine contract Smooth Muscle.

PK: orally Absorbed
cross Placenta.
poorly water soluble → not suitable for Injection.
t½ varies with → zero order.

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ADR

GIT → NVD, peptic ulcer
CNS → insomia, headache, tremor, shock,
Diuresis
CVS → Tachycardia, palpitation, hypotension, CA

Interactions:

1) Sympathomimetics × Methylxanthine
   ↓↑ the effect of sympathomimetic.
2) not given with Rifampicin → ↓ the effect.

Uses

1) → Bronchial Asthma And COPD
   → cause BD And ↓ Release of inflammatory Rx
   ↑ mucociliary clearance
2) → Apnoea in premature Infants. - Aminophylline

Roflumilast → PDE4 Inhibitor
Omalizumab → mono Antibody Against IgE
t/t of Acute Severe Asthma (Status Asthmaticus)
(Refractory Asthma)

1) Hydrocortisone hemisuccinate 100mg IV stat
2) Nebulized salbutamol (2.5-5mg) + Ipratropium bromide 0.5mg intermittent inhalation
3) High flow humidified O2 Inhalation

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4) Salbutamol / tubutaline 0.4mg IM/SC to Reach small bronchi where Inhaled drug cannot Reach

5) Intubation And mechanical ventilation

6) Treat chest infection with Antibiotics.

7) Correct dehydration And Acidosis with + sod bicarbonate

Mast cell stabilizes - Sodium cromoglycate & ketotifen

They Inhibit the Release of various mediators.

↳ LT, PGs PAF, histamine

→ Reduce bronchial hyperactivity

given by Inhalation

Uses

Allergic Asthma, Rhinitis, dermatitis, etc

ADR → systemic side effect, local irritation, cough bronchospasm, headache.