



SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

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**DEPARTMENT : CARDIO PULMONARY PERFUSION CARE
TECHNOLOGY**

COURSE NAME : PHARMACOLOGY

UNIT : DRUGS AFFECTING RESPIRATORY SYSTEM

**TOPICS : BRONCHODILATORS, INHALED CORTICOSTEROIDS,
COMBINATION INHALERS, LEUKOTRIENE MODIFIERS, MAST
CELL STABILIZERS, PHOSPHODIESTERASE - 4 INHIBITORS,
MONOCLONAL ANTIBODIES**



DRUGS AFFECTING RESPIRATORY SYSTEM



BRONCHODILATORS

Beta2-Adrenergic Agonists:

Short-acting (SABA):

Albuterol, Levalbuterol:

Mechanism: Activate beta2 receptors, leading to bronchodilation.

Indications: Acute bronchospasm in asthma and COPD.



Long-acting (LABA):

Formoterol, Salmeterol, Vilanterol:

Mechanism: Prolonged bronchodilation for maintenance therapy.

Indications: Maintenance treatment of asthma and COPD.



Anticholinergic Bronchodilators:

Ipratropium, Tiotropium, Umeclidinium:

Mechanism: Block muscarinic receptors, causing bronchodilation.

Indications: COPD, sometimes used in asthma.



INHALED CORTICOSTEROIDS (ICS)



Fluticasone, Budesonide, Beclomethasone:

Mechanism: Reduce airway inflammation and suppress immune response.

Indications: Asthma and COPD, particularly for anti-inflammatory maintenance therapy.



LEUKOTRIENE MODIFIERS



Montelukast, Zafirlukast, Zileuton:

Mechanism: Inhibit leukotriene synthesis or block receptors, reducing inflammation.

Indications: Asthma and, to some extent, allergic rhinitis.



COMBINATION INHALERS



**Fluticasone/Salmeterol,
Fluticasone/Vilanterol:**

Budesonide/Formoterol,

Mechanism: Combine corticosteroid and long-acting beta2-agonist for both anti-inflammatory and bronchodilator effects.

Indications: Asthma and COPD.



MAST CELL STABILIZERS



Cromolyn, Nedocromil:

Mechanism: Inhibit mast cell degranulation, reducing release of inflammatory mediators.

Indications: Prophylaxis in asthma and allergic rhinitis.



PHOSPHODIESTERASE - 4 (PDE-4) INHIBITORS



Roflumilast:

Mechanism: Inhibits PDE-4, reducing inflammation.

Indications: Severe COPD with chronic bronchitis.



MONOCLONAL ANTIBODIES



Anti-IgE Antibodies:

Omalizumab:

Mechanism: Binds to circulating IgE, reducing its availability.

Indications: Severe allergic asthma.



Anti-IL-5 Antibodies:

Mepolizumab, Reslizumab, Benralizumab:

Mechanism: Target eosinophils, reducing inflammation.

Indications: Severe eosinophilic asthma.



TECHNICIAN ROLE



- Regular assessment of lung function and symptoms.



ASSESSMENT



- What is Bronchodilators ?
- What is Monoclonal Antibodies ?