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PHARMACOLOGY - III

UNIT 1

TOPIC :

- d. Nasal decongestants



Nasal Decongestants

→ Nasal decongestants are drugs used to relieve nasal blockage by reducing swelling and congestion of the nasal mucosa. They improve airflow through the nose.

→ Used in:

- Common cold
- Allergic rhinitis
- Sinusitis
- Flu
- Upper respiratory tract infections

Nasal Congestion

→ Nasal congestion (stuffy nose) is blockage of nasal passages due to inflammation and swelling of nasal tissues and blood vessels, often with excess mucus production.

Causes of Nasal Congestion

1. Common cold – Viral infection
2. Allergic rhinitis – Allergy due to pollen, dust, etc.
3. Sinusitis – Inflammation/infection of sinuses
4. Influenza (flu)
5. Nasal polyps
6. Deviated nasal septum
7. Smoke and pollution
8. Hormonal changes
9. Overuse of nasal sprays (rebound congestion)

Signs and Symptoms

- Blocked or stuffy nose
- Difficulty in breathing through nose
- Sneezing
- Runny nose
- Headache
- Facial pressure
- Reduced sense of smell
- Mouth breathing

Classification of Nasal Decongestants

1. Sympathomimetic Nasal Decongestants (α -Adrenergic Agonists)

Topical (Nasal sprays/drops)

- Oxymetazoline
- Xylometazoline
- Phenylephrine
- Naphazoline

Oral

- Pseudoephedrine
- Phenylephrine

2. Steroidal Nasal Decongestants (Intranasal Corticosteroids)

- Beclomethasone
- Fluticasone
- Budesonide
- Mometasone

3. Antihistamines

- Diphenhydramine
- Chlorpheniramine + Phenylephrine

4. Others

- Ipratropium bromide
- Saline nasal sprays

Mechanism of Action and Uses

Drug/Class	Mechanism of Action	Uses
Oxymetazoline, Xylometazoline	Stimulate α -receptors causing vasoconstriction in nasal mucosa	Acute nasal congestion, cold, sinusitis
Phenylephrine	Selective α_1 -agonist causing vasoconstriction	Common cold, allergic rhinitis
Pseudoephedrine	Sympathomimetic causing shrinkage of swollen nasal tissues	Nasal and sinus congestion
Beclomethasone, Fluticasone, Budesonide	Reduce inflammation and mucus secretion	Allergic rhinitis, chronic sinusitis
Diphenhydramine, Chlorpheniramine	Block H ₁ histamine receptors	Allergy-related nasal congestion
Ipratropium bromide	Anticholinergic; decreases nasal secretions	Runny nose
Saline nasal spray	Moisturizes and clears nasal passages	Dryness and mild congestion

Adverse Effects

Topical Decongestants

- Burning sensation
- Dryness of nose
- Sneezing
- Rebound congestion on prolonged use

Oral Decongestants

- Increased blood pressure
- Nervousness
- Insomnia
- Palpitations

Corticosteroids

- Nasal irritation
- Nose bleeding
- Dry throat

Rebound Congestion (Rhinitis Medicamentosa)

→ Condition in which prolonged use of nasal decongestant sprays causes worsening nasal congestion.

Cause

- Use of topical nasal sprays for more than 5–7 days.

Prevention

- Avoid prolonged use
- Use saline sprays when needed
- Follow doctor's instructions

Precautions

- Do not use topical sprays for more than 1 week
- Use cautiously in hypertension and heart disease
- Avoid self-medication in children
- Steroid sprays should be used regularly for best effect