

Cough medications

Cough

- **It is a protective reflex with sudden noisy expulsion of air , expelling sputum & other irritant materials from upper part of airways.**

- **Types**

(1) Productive / Useful Cough

- **It effectively expels secretions & exudates, from respiratory tract.**

(2) Unproductive / Useless Cough

- **It is due to local irritation, e g smoker's cough**

Cough reflex

Stretch receptors in mucosa of respiratory tract



Impulses transmit via vagus



Cough center in brain



Efferent's



diaphragm glottis muscles of chest and abdomen

Classification of cough medications

- **Antitussive**
- **Expectorant/mucokinetic**
- **mucolytics**

Anti-tussive Drugs:

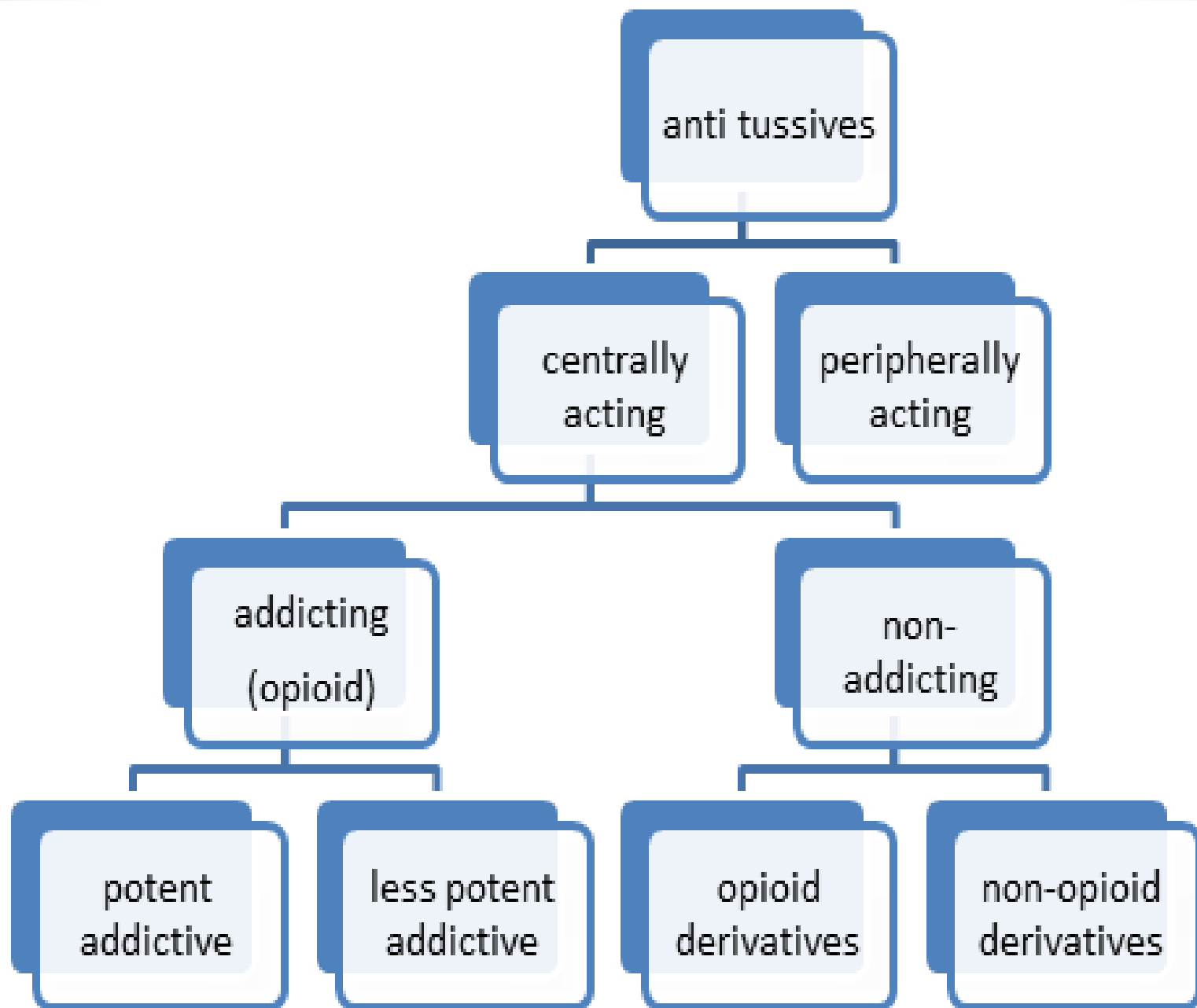
- Drugs which suppress cough & are used for symptomatic treatment of cough.
- Used mainly in dry cough
- **Types:**

1. Centrally acting anti-tussives:

directly suppress medullary cough center.

2. Peripheral Anti-tussives

decreasing the input of stimuli from cough receptors in respiratory passages.



(A) Central Anti-tussives

(a) **Addicting Anti-tussives / Opioid**

Codeine , Pholcodine

(b) **Non-Addicting Anti-tussives**

(i) **Opioid derivatives :**

Dextromethorphan

(ii) **Non Opioids:**

Benzonatate, Diphenhydramine

(2) Peripheral Anti-tussives

(a) **Pharyngeal Demulcents** (soothing action on irritating mucosa)

(b) **Drugs with Local Anesthetic Activity**

Benzonatate –has central action and peripheral local anesthetic action on stretch receptors in lung bronchi

C-Steam inhalation

acts by promoting a dilute mucus secretion and by protecting inflamed mucosa. An aromatic compound e.g. benzoin tincture, menthol or eucalyptus, may be added

ANTI-HISTAMINES

E.G. Diphenhydramine

- a. Reduction in cholinergic transmission**
- b. Suppression of cough because of sedative action**
- c. Reduces nasal secretions and therefore the post-nasal drip that causes cough**

- d. Should not be used to treat productive cough as it increases the viscosity of the mucus**

Mucokinetics/Expectorants:

Definition:

- Drugs which ↑ bronchial secretions or reduces its viscosity facilitating its removal by coughing
- Guaiphenesin
- Ammonium chloride or bicarbonate.
- Potassium Iodide

Guaiphenesin

- **Only FDA Approved expectorant .**

Adverse effects:

- Gastric disturbances and drowsiness.

Mucolytics:

Drugs which render sputum less viscous so that sputum is more easily cleared from chest.

- Acetylcysteine, Carbocysteine, Methylcysteine.
- Bromohexine

Mechanism of Action

- **Acetyl – , Carbo – , & Methyl-cysteine**

Split disulphide bonds in mucoprotein present in sputum & reduces its viscosity.

- **Bromohexine**

Reduces viscosity of bronchial secretions by depolymerization of muco-polysaccharides of sputum

Adverse effects: peptic ulceration

Respiratory stimulants

- E.g.
- doxapram
- Theophylline

Doxapram

- **Stimulates the medullary respiratory center**
- **Used primarily in emergency situations during anesthesia or to decrease the respiratory depressant effects of opiates and barbiturates.**
- **Can cause convulsion and arrhythmia in high doses**
- **Replaced by positive pressure ventilation**