ANTITUSSIVES

The cough reflex occurs when receptors in the airway send impulses to the brainstem and cause contraction of the muscles needed to cough. -The type of cough produced depends on the location of the stimulated receptors and whether or not mucus is brought up with the cough (productive or non productive).

1.Pharyngeal/ demulcents Lozenges, cough linctuses containing syrup, glycerine,

2.Expectorants (Mucokinetics)

a.bronchial secretion enhncers Sodium or Potassium citrate, Potassium iodide, Guaiphenesin,balsum of Tolu,vasaka, Ammonium chloride.

b.Mucolytics: Bromhexine, Ambroxol, Acetyl cysteine, Carbocisteine

3. Antitussives (Cough centre suppressants)

(a) Opioids Codeine, Pholcodeine.

(b) Nonopioids Noscapine, Dextromethorphan, Chlophedianol.

(c) Antihistamines Chlorpheniramine, Diphenhydramine, Promethazine.

4. Adjuvant antitussives

DEMULCENTS AND EXPECTORANTS

Pharyngeal demulcents sooth the throat and reduce afferent impulses from the inflamed/ irritated pharyngeal mucosa, thus provide symptomatic relief in dry cough arising from throat.

Expectorants (Mucokinetics) are drugs believed to increase bronchial secretion or reduceits viscosity, facilitating its removal by coughing.

Mucolytics

Bromhexine A derivative of the alkaloid vasicine obtained from Adhatoda vasica (Vasaka), is a potent mucolytic and mucokinetic, capable of inducing thin copious bronchial secretion.

ANTITUSSIVES - Antitussives act centrally by suppressing the neurons located in the brainstem's cough center. Antitussives are often used with tracheitis, tracheobronchitis. When coughing worsens the inflammation that is already present and stimulates more coughing, it needs to be suppressed.

DEMULCENTS AND EXPECTORANTS

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- irritated pharyngeal mucosa, thus provide symptomatic relief in dry cough arising from throat.
- Expectorants (Mucokinetics) are drugs believed to increase bronchial secretion or reduce its viscosity, facilitating its removal by coughing.
- Sodium and potassium citrate are considered to increase bronchial secretion by saltaction.
- Potassium iodide is secreted by bronchial glands and can irritate the airway mucosa.

Prolonged use can affect thyroid function and produce iodism. It is rarely used now.

- Guaiphenesin, vasaka, tolu balsum are plant products which are supposed to enhance bronchial secretion and mucociliary function while being secreted by tracheobronchial glands.

Opioids

Codeine: An opium alkaloid similar to but less potent than morphine

It is more selective for cough centre and is treated as the standard antitussive; suppresses cough for about 6 hours.

Non Opioids

Noscapine (Narcotine) An opium alkaloid of the benzoisoquinoline series. It depresses cough but has no narcotic, analgesic or dependence inducing properties

Mucolytics

Bromhexine A derivative of the alkaloid Hysosicine obtained from (Vasaka), is a potent mucolytic and mucokinetic, capable of inducing thin copious bronchial secretion. It depolymerises mucopolvsaccharides directly as well as by liberating lysosomal enzymesnetwork of fibres in tenacious sputum is broken. It is particularly useful if mucus plugs are present.

Side effects are rhinorrhoea and lacrimation, gastric irritation, hypersensitivity.

NASAL DECONGESTANTS

These are a agonists which on topical application as dilute solution (0.05-0.1%) produce local vasoconstriction. The imidazoline compoundsnaphazoline, xylometazoline and oxymetazoline are relatively selective a2 agonist (like clonidine).

They have a longer duration of action (12 hours) than ephedrine. After-congestion is claimed to be less than that with ephedrine or phenylephrine. They may cause initial stinging sensation (specially naphazoline). Regular use of these agents for long periods should be avoided because mucosal

ciliary function is impaired: atrophic rhinitis and anosmia can occur due to persistent vasoconstriction. They can be absorbed from the nose and produce systemic effects-CNS depression and rise in BP. These drugs should be used cautiously in hypertensives and in those receiving MAO inhibitors.

Pseudophedrine A stereoisomer of ephedrine; causes vasoconstriction, especially in mucosae and skin, but has fewer CNS and cardiac effect and is a poor bronchodilator (little 2 agonistic activity). It has been used orally as a decongestant of upper respiratory tract, nose and Eustachian tubes