

# PHARMA SUMMARY (1)

|| Treatment of cough is subdivided into 2 main categories:

Antitussive therapy (ضد القحة): therapy that inhibits cough, useful to suppress intensity and frequency of cough when it's unproductive (which doesn't serve any purpose).

Protussive therapy (بتشجيع القحة): therapy that makes cough more effective, when it's productive, to expel a foreign body or exudate.

## Drugs for cough

|| Antitussive Drugs:

● Drugs that may alter mucociliary factors:

- Increase the volume of secretions
- Change the consistency of mucus (i.e., mucolytics)
- Increase mucociliary clearance (drugs that stimulate cilia)

Name	Mechanism of action & use	Side effects
Ipecacuanha & squill	Natural products, <b>have direct effect on CNS and locally to cause emesis</b> , which is preceded by increased secretions (Large quantities of this drug will produce cough)	
Volatile oils (lemon, anise, pine, etc...)	Have direct action on the bronchi	
Iodinated glycerol	Excreted through bronchial glands and stimulates secretions directly. Have doubtful efficacy	Can cause <b>congenital hypothyroidism</b> if it's used by pregnant women. So, it's contraindicated during pregnancy and lactation
Bromhexine	<b>Increases lysozyme activity</b> , leading to increased secretion and hydrolysis of mucopolysaccharides	
Carbocisteine	An aerosol, <b>works through its SH group to reduce disulfide bonds</b> in mucoproteins leading to enhancement of flow.	May irritate the airways in some sensitive patients.
Combination of H1-histamine antagonist and a decongestant		
Ammonium chloride		
<b>Hydration</b>	<b>Either orally or intravenously</b>	
- Ipratropium bromide. - Beta adrenergic agonists. - Theophylline - Sodium chromoglycate - Beclomethasone.	These will be discussed in the treatment of bronchial asthma.  These drugs are bronchodilators, they dilate the bronchi and cause enhancement of expectoration	

## ● Drugs acting on the afferent limb:

These drugs are working on the nerves, not on the respiratory passages

Name	Mechanism of action & use	Side effects
Local anesthetics: Lidocaine	Applied topically, has transient antitussive effect	Causes <b>CNS effects</b> if taken intravenously
Opioids (morphine)	Beside their primary central effect. Opioids works on the brain; it inhibits most of the functions in the body. Opioids are pain killers, so they're used by cancer patients.	

## ● Drugs acting on the cough center:

Narcotics: أدوية مخدّرة

Name	Mechanism of action & use	Side effects
Codeine	Is the standard, recently found no more effective than syrup vehicle. May have demulcent activity (ملطّف). Codeine isn't used for pain killing, it's primarily used to suppress the cough.	
Diamorphine and morphine	Used in terminal patients (like cancer patients)	

Non-narcotics:

Name	Mechanism of action & use	Side effects
- Dextromethorphan - Glaucine - Diphenhydramine - Pholcodine		

## ● Drugs acting on the efferent limb:

Name	Mechanism of action & use	Side effects
Ipratropium bromide (Atropine-like drug)	Given as an aerosol. (it's not given systemically, it's given locally by inhalation) Effective for asthma, chronic bronchitis, and persistent cough following URTI. Can also have effects on cough receptors by altering mucociliary factors.	

## ● Drugs acting on the respiratory skeletal muscles:

If we want to stop the cough, we should use muscle relaxants, so the patient won't be able to cough.

Name	Mechanism of action & use	Side effects
Non-depolarizing blockers (like pancuronium)	May be considered in patients who cannot be mechanically ventilated because of uncontrollable spasms of coughing.	

## || Protussive therapy:

Protussive therapy is used when the cough is productive and performs a useful function, and needs to be encouraged (e.g. bronchiectasis, cystic fibrosis, pneumonia, postoperative atelectasis)

- This treatment increases cough effectiveness with or without increasing cough frequency. They either increase superficial velocity or alter mucous factors.

Name	Mechanism of action & use	Side effects
Hypertonic (3%) Saline aerosol	Improves cough clearance but not pulmonary function or subjective assessment	
Amiloride aerosol	It's a diuretic, but found to be useful with <b>cystic fibrosis</b>	
Bronchodilators	Improves mucus clearance	With too much relaxation, flow rates might actually decrease

Mechanical Measures: العلاج الطبيعي

- Positive insufflation followed by manual compression of the lower thorax and abdomen.
- Abdominal push manoeuvre to assist expiration.
- Combining abdominal binding and muscle training of the clavicular portion of pectoralis major.
- Combination of positive expiratory pressure and chest physiotherapy in patients with chronic bronchitis.