

### Cholinergic Drugs intro

Activity at Cholinergic synapses- that use Ach as neurotransmitter

Cholin- Previous cheat sheet

ergic

Receptors

Cholinergic Stimulants Increase activity at ACh line synapses.

Direct Bind directly with the Cholin-  
acting ergic receptor

Cholin-

ergic

Stimulants

Indirect increase synaptic activity by  
acting inhibiting the ACh linesterase  
Cholin- enzyme located at Cholinergic  
ergic synapse  
stimulants

### Direct Acting Cholinergic Stimulants

Cholin- Function: similar to Ach  
ergic Molecule  
Agonists

Ach Is DIRECT ACTING Cholin-  
ergic stimulant

Muscur- More beneficial , primarily  
ininc AFFECT the peripheral tissues  
Cholinergic while exerting a minimal effect  
Stimulants on the cholinergic receptors  
located in the autonomic  
ganglia and the neuromuscular  
junction.

Clinical only few are useful  
use

Follow Every durg  
The Table

### Indirect-acting Cholinergic Stimulants

Function increase activity at cholinergic synapses by inhibiting the Achsterase enzyme that is responsible for destroying Ach after this neurotransmitter is released from the presynaptic terminal. So it allows more Ach to remain in the Synapse. FINALLY: It increases in cholin-  
ergic synaptic transmission.

Also Cholinesterase inhibitors /  
known antichlinesterase agents  
as

What it Exert a stimulatory effect on the  
does peripheral muscuranic cholin-  
finally ergic synapses and on the  
cholinergic synapses found at  
the autonomic ganglia, at the  
skeletal neuromuscular junction,  
and within certain aspects of the  
CNS.

### Adverse effects

p. 293 Problems and adverse effects

### Clinical Applications

Mainly: decrease in smooth muscle tone  
Both tha toccur in GI trct and bladder  
following abdominal surgery or  
trauma.

### Clinical Applications (cont)

Indirectly glaucoma, myasthenia gravis,  
alzheimer disease and to  
reverse the effects from an  
overdose of other drugs such  
as neuromuscular blocking  
agents and anticholinesterics.

Alzheimer p. 292  
disease

Glaucoma

Myasthenia Gravis

Reversal of Neuromuscular blockage

Reversal of Ach-Induced CNS toxicity

### Antecholinergic Drugs

Function Competitive antagonists of the  
postsynaptic Cholinergic  
receptors: So they bind  
reversibly to the cholinergic  
receptor but do NOT activate it.

Binding... BLOCKS the receptor from teh  
effects of endogenously  
released Ach ----> diminishing  
the cellular response to Cholin-  
ergic stimulation.

Other Antinuscuring/antinicotinic  
names DRUGS

AntiNi- USED for Extreme High BP  
cotinic and Hypertensive emergencies

Nn-Ant-  
agonists

To produce Surgery by  
blocking the Skeletal NMJ

### Antimuscarinic AntiCholinergic Drugs

Atropine	Prototype Drug
Obtained from:	Extract of plants such as belladonna and jimsonweed
Action	BLOCK Postsynaptic Cholinergic Muscarinic Receptor
Five subtypes M1-M5	Antagonize cholinergic receptors on number of tissues which leads to side effects (see above Cheat sheet)
Clinical Application	GI, Parkinson, and treat clinical disorder (table 19-2, p. 295)
Parkinsons	Deficiency of the dopamine in the basal ganglia. --> leads to overactivity of central cholinergic synapse
CVS	Atropine- primarily use to block vagus nerve on myocardium. Slows heart rate, conduction of the cardiac action potential throughout the myocardium.
Motion sickness poisoning	antimuscarinics - Scopolamine



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