

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
Cholinegic 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



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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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