Direct Cholinomimetics

Direct cholinomimetics are drugs which work as agonists at muscarinic cholinoreceptors and increase parasympathetic activity. Bethanechol is a direct cholinomimetic agent used to induce bladder and gastrointestinal smooth muscle contraction. Methacholine is used in the bronchial challenge test to help diagnose asthma. Pilocarpine is used as a potent stimulator of sweat, tears and saliva. It is often indicated for both open and closed-angle glaucoma, as it contracts ciliary muscles of the eye (treats open-angle glaucoma) and causes pupillary sphincter contraction (closed-angle glaucoma). Carbachol is used to release intraocular pressure in open-angle glaucoma, but can also used to induce miosis in ocular surgery.



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Muscarinic Agonists
Mustache Dragonist
Direct cholinomimetics work at muscarinic cholinoceptors and thus have similar effects as stimulation of the parasympathetic division of the autonomic nervous system.

Bethanechol
Bath-Annie
Bethanechol is a direct cholinomimetic agent that is structurally similar to acetylcholine, and acts to stimulate bladder contraction, along with gastrointestinal motility.

Bladder and Bowels
Bladder and Bowel-bowl
Bethanechol helps to activate bowel and bladder smooth muscle. It helps to prevent urine retention and ileus by stimulating smooth muscle motor activity.

Methacholine
Moth-cola
Methacholine is another parasympathomimetic drug that is used for asthma diagnosis in the methacholine challenge test.

Bronchoconstriction
Broccoli-constrictor
Methacholine can be used for the diagnosis of bronchial hypersensitivity in patients with asthma. Patients whose asthma is less clinically apparent are typically more sensitive to methacholine challenge, compared to normal patients.

Pilocarpine
Pile-of-cars
Pilocarpine is a strong stimulator of saliva, sweat and tears and can be used to treat both open-angle and closed-angle glaucoma. It may be administered as an ocular insert or as eyedrops.

Contracts Ciliary Muscle and Pupillary Sphincter
Flexing Seal-muscle and Purple-pupil Sphinx
Pilocarpine's mechanism of action is to contract the ciliary muscle of the eye for open-angle glaucoma and the pupillary sphincter for closed-angle glaucoma. It is resistant to acetylcholinesterase. Patients show miosis after administration.

Carbachol
Car-bagel
Carbachol is a cholinomimetic agent similar to acetylcholine and is predominantly used in cases of open-angle glaucoma. Although in some rare cases, it has been used for closed-angle glaucoma.

Releases Intraocular Pressure
Down-arrow Draining Eye
Carbachol helps in relieving intraocular pressure and can be used to cause pupillary constriction. This helps to treat open-angle glaucoma.

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