

TEST BANK



Scientific Team
الفريق العلمي

Done by:

VOLUNTEER

Reviewed by:

A 42-year-old woman presents to her neurologist for the management of chronic migraines. She complains of headaches that occur over 15 days per month. After trying many interventions for migraine treatment and prevention, the neurologist decides to administer botulinum toxin type A.

A. What is the mechanism of action for this medication?

(A) Block release of acetylcholine from storage vesicles

(B) Block the synapse at ganglia

(C) Block transport of choline into neurons

(D) Inhibit acetylcholinesterase

(E) Inhibit choline acetyltransferase

A

1 A 50-year-old man is started on a new medication for the management of acute postoperative urinary retention. The medication also stimulates gastrointestinal motility. What is the mechanism of action for the new medication?

(A) α -Agonist

(B) β -Antagonist

(C) β -Agonist

(D) Muscarinic agonist

(E) Nicotinic antagonist

D

A 63-year-old woman is started on a new medication for the management of overactive bladder. Potential adverse effects include dry eyes and dry mouth. What is the mechanism of action for this medication?

- (A) α_1 -Antagonist
- (B) B-Agonist
- (C) Inhibit acetylcholinesterase
- (D) Muscarinic antagonist
- (E) Neuromuscular blocker

D

A 78-year-old man with Parkinson disease experiences worsening of his symptoms. He is already taking levodopa. The addition of which medication may help alleviate the patient's symptoms?

- (A) Benztropine
- (B) Doxazocin
- (C) Reserpine
- (D) Timolol
- (E) Tubocurarine

A

A 32-year-old woman presents to the emergency room with ptosis, diplopia, and limited facial expressions. Further examination leads to a diagnosis of myasthenia gravis. Which medication can help manage the patient's symptoms?

- (A) Atropine
- (B) Cyclopentolate
- (C) Pralidoxime
- (D) Pyridostigmine
- (E) Tropicamide

D

A 72-year-old man is prescribed ophthalmic pilocarpine for the management of elevated intraocular pressure.

What is the mechanism of action for this medication?

(A) Activates nicotinic cholinergic receptors

(B) Blocks muscarinic cholinergic receptors

(C) Inhibits acetylcholinesterase

(D) Selectively inhibits peripheral activity of sympathetic ganglia

B

A 26-year-old woman presents to the emergency room with poisoning from an insecticide containing an acetylcholinesterase inhibitor. Which of the following agents would help manage her symptoms?

(A) Atropine

(B) Bethanechol

(C) Physostigmine

(D) Pilocarpine

(E) Propranolol

A

A 50-year-old man is prescribed a muscarinic cholinergic receptor agonist. It produces vascular smooth muscle relaxation for the treatment of hypertension. The new medication promotes the release of which of the following substances from endothelial cells?

(A) Acetylcholine

(B) Histamine

(C) Nitric oxide

(D) Norepinephrine

C

A 43-year-old man attends an appointment with his ophthalmologist. The doctor instills eye drops to produce mydriasis and cycloplegia. Which one of the following agents was most likely administered?

- (A) Atropine
- (B) Carbachol
- (C) Phenylephrine
- (D) Prazosin

A

Which is correct regarding activation of receptors on the effector organs in the ANS?

- A. Acetylcholine activates muscarinic receptors.
- B. Acetylcholine activates adrenergic receptors.
- C. Epinephrine activates nicotinic receptors.
- D. Norepinephrine activates muscarinic receptors

A

Which is correct regarding the sympathetic nervous system?

- A. It generally mediates body functions in "rest-and-digest" mode.
- B. The neurotransmitter at the sympathetic ganglion is norepinephrine (NE).
- C. The neurotransmitter at the sympathetic ganglion is acetylcholine (ACh).
- D. Sympathetic neurons release ACh in the effector organs.

C

Which physiological change occurs when the parasympathetic system is activated?

- A. Increase in heart rate
- B. Inhibition of lacrimation (tears)
- C. Dilation of the pupil (mydriasis)
- D. Increase in gastric motility

D

Which physiological change is expected when the sympathetic system is inhibited using a pharmacological agent?

- A. Reduction in heart rate
 - B. Increase in blood pressure
 - C. Decrease in fluid secretions
 - D. Constriction of blood vessels
- Which is correct regarding activation of receptors on the

A

Which statement concerning the parasympathetic nervous system is correct?

- A. The parasympathetic system often discharges as a single, functional system.
- B. The parasympathetic division is involved in near vision, movement of food, and urination.
- C. The postganglionic fibers of the parasympathetic division are long, compared to those of the sympathetic nervous system.
- D. The parasympathetic system controls the secretion of the adrenal medulla.

B

Which statement is correct regarding the autonomic nervous system?

- A. Afferent neurons carry impulses from the central nervous system (CNS) to the effector organs.
- B. Preganglionic neurons of the sympathetic system arise from the cranial nerves, as well as from the sacral region.
- C. When there is a sudden drop in blood pressure, the baroreceptors send signals to the brain to activate the parasympathetic system.
- D. The heart receives both sympathetic and parasympathetic innervation.

D

Botulinum toxin blocks the release of acetylcholine from cholinergic nerve terminals. Which is a possible effect of botulinum toxin?

- A. Skeletal muscle paralysis
- B. Improvement of myasthenia gravis symptoms
- C. Increased salivation
- D. Reduced heart rate

A

A patient develops urinary retention after an abdominal surgery. Urinary obstruction was ruled out in this patient. Which strategy would be helpful in promoting urination?

- A. Activating nicotinic receptors
- B. Inhibiting the release of acetylcholine
- c. Inhibiting cholinesterase enzyme
- D. Blocking muscarinic receptors

C

Which of the following drugs could theoretically improve asthma symptoms?

- A. Bethanechol
- B. Pilocarpine
- C. Pyridostigmine
- D. Atrop

D

If an ophthalmologist wants to dilate the pupils for an eye examination, which drug/class of drugs is theoretically useful?

- A. Muscarinic receptor activator (agonist)
- B. Muscarinic receptor inhibitor (antagonist)
- C. Pilocarpine
- D. Neostigmine

D

In Alzheimer disease, there is a deficiency of cholinergic neuronal function in the brain. Theoretically, which strategy is useful in treating symptoms of Alzheimer disease?

- A. Inhibiting cholinergic receptors in the brain
- B. Inhibiting the release of acetylcholine in the brain
- C. Inhibiting the acetylcholinesterase enzyme in the brain
- D. Activating the acetylcholinesterase enzyme in the brain

C

An elderly female who lives in a farmhouse was brought to the emergency room in serious condition after ingesting a liquid from an unlabeled bottle found near her bed, apparently in a suicide attempt. She presented with diarrhea, frequent urination, convulsions, breathing difficulties, constricted pupils (miosis), and excessive salivation. Which of the following is correct regarding this patient?

- A. She most likely consumed an organophosphate pesticide.
- B. The symptoms are consistent with sympathetic activation.
- C. Her symptoms can be treated using an anticholinesterase agent.
- D. Her symptoms can be treated using a cholinergic agonist.

A

A patient who received a nondepolarizing neuromuscular blocker (NMB) for skeletal muscle relaxation during surgery is experiencing mild skeletal muscle paralysis after the surgery. Which drug could reverse this effect of NMBs?

- A. Pilocarpine
- B. Bethanechol
- C. Neostigmine
- D. Atropine

C

A 60-year-old female who had a cancerous growth in the neck region underwent radiation therapy. Her salivary secretion was reduced due to radiation and she suffers from dry mouth (xerostomia). Which drug would be most useful in treating xerostomia in this patient?

- A. Acetylcholine
- B. Pilocarpine
- C. Echothiophate
- D. Atropine

B

A 40-year-old male presents to his family physician with drooping eyelids, difficulty chewing and swallowing, and muscle fatigue even on mild exertion. Which agent could be used to diagnose myasthenia gravis in this patient?

- A. Atropine
- B. Edrophonium
- C. Pralidoxime
- D. Echothiophate

B

.1 o *Atropa belladonna* is a plant that contains atropine (a muscarinic antagonist). Which of the following drugs or classes of drugs will be most useful in treating poisoning with belladonna?

- A. Malathion
- B. Physostigmine
- C. Muscarinic antagonists
- D. Nicotinic antagonists

B

During an ophthalmic surgical procedure, the surgeon wanted to constrict the pupil using a miotic drug.

However, he accidentally used another drug that caused dilation of the pupil (mydriasis). Which drug was most likely used?

- A. Acetylcholine
- B. Pilocarpine
- C. Tropicamide
- D. Bethanechol

C

Sarin is a nerve gas that is an organophosphate cholinesterase inhibitor. Which agent could be used as an antidote to sarin poisoning?

- A. Pilocarpine
- B. Carbachol
- C. Atropine
- D. Physostigmine

C

A patient with asthma was prescribed a β_2 agonist for acute relief of bronchospasm, but did not respond to treatment. Which drug is the most likely next option for this patient?

- A. Benztropine
- B. Ipratropium
- C. Oxybutynin
- D. Physostigmine

B

A 50-year-old male who is noncompliant with medications was recently diagnosed with chronic obstructive pulmonary disease (COPD). His physician would like to prescribe an inhaled anticholinergic that is dosed once or twice daily. Which drug is most appropriate for this patient?

- A. Atropine
- B. Ipratropium
- C. Tiotropium
- D. Trospium

C

Which is the most effective drug for motion sickness for a person planning to go on a cruise?

- A. Atropine
- B. Fesoterodine
- C. Scopolamine
- D. Tropicamide

C

Which is correct regarding ganglion-blocking drugs?

- A. Blockade of sympathetic ganglia could result in reduced blood pressure.
- B. Blockade of parasympathetic ganglia could result in reduced heart rate.
- C. Nicotine is a nondepolarizing ganglion blocker.
- D. Atropine is a nondepolarizing ganglion blocker.

A

Which drug is useful in treating sinus bradycardia?

- A. Atropine
- B. Cisatracurium
- C. Neostigmine
- D. Succinylcholine

A