

## Pharmacology MSS (Questions)

- 1) **\*\*A 61-year-old woman underwent surgery to remove an ovarian cancer. Anesthesia was induced by thiopental and maintained by sevoflurane and tubocurarine. After surgery the anesthesiologist administered a drug to overcome the residual muscle relaxant effect of tubocurarine. Which of the following drugs was most likely given?**

Neostigmine  
Succinylcholine  
Cisatracurium  
Tizanidine  
Dantrolene

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Answer: A

All nondepolarizing neuromuscular blockers (tubocurarine, cisatracurium, etc.) Cause a competitive blockade of Nm receptors. Their action is antagonized by acetylcholine as well as by drugs that increase the availability of acetylcholine at the motor end plate (cholinesterase inhibitors like neostigmine). This antagonism is exploited clinically and neostigmine is often used to speed up the recovery from the neuromuscular blockade remaining after completion of surgery.

- 2) **\*\*This drug can block Nn receptors in the autonomic ganglia**

Tubocurarine  
Baclofen  
Cisatracurium  
Dantrolen

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Answer :A

- 3) **\*\*\*\*A 66-year-old woman was brought to the Emergency Room following a car accident. A surgical operation was needed to repair a badly damaged leg. The woman was currently receiving gentamicin and tolterodine for an urinary tract infection, timolol and latanoprost for glaucoma, and lovastatin for hypercholesterolemia. The anesthesiologist chose thiopental sodium for induction and isoflurane plus**

**tubocurarine for maintenance of general anesthesia. Which of the following patient's medications most likely enhanced the action of tubocurarine?**

- Gentamicin
  - Tolterodine
  - Timolol
  - Latanoprost
  - Lovastatin
- 

Answer: A

Aminoglycoside antibiotics inhibit acetylcholine release from cholinergic nerves by blocking a specific type of  $Ca^{++}$  channels. Therefore they enhance the blockade induced by nondepolarizing neuromuscular blockers.

- 4) A 49-year-old woman required intubation and mechanical ventilation for management of respiratory failure resulting from severe emphysema. The patient was agitated, attempting to sit up in bed and reach for his endotracheal tube. Lorazepam was give IV for sedation and the patient got drowsy but motor restlessness was only marginally improved. A muscle relaxant was given IV. The patient relaxed as paralysis developed but 5 minutes later her heart rate was 160 bpm. Which of the following drugs most likely caused this adverse effect?**

- Botulinum toxin
  - Dantrolene
  - Succinylcholine
  - Tubocurarine
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Answer :D

The tachycardia that can appear after the administration of tubocurarine can be due either to histamine release or to blockade of nicotinic receptors of autonomic ganglia or, most likely, to both.

- 5) \*\* A 57-year-old woman was admitted semiconscious to the emergency room after a car accident. Artificial ventilation was need and a drug was given to facilitate intubation. The administered drug has the lowest duration of action among the skeletal muscle relaxant. Which of the following drugs was most likely given?**

- Succinylcholine
- Cisatracurium
- Dantrolene

Vecuronium

Tubocurarine

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Answer: A

The duration of action of succinylcholine is about 8 minutes after a standard therapeutic dose. The reason is that the drug is rapidly hydrolyzed by pseudocholinesterase in plasma and liver.

- 6) **\*\* A 67-year-old woman required intubation and mechanical ventilation for management of respiratory failure. Tubocurarine was given IV to reduce chest wall resistance and ineffective spontaneous ventilation. Which of the following membrane potentials was most likely blocked by tubocurarine in this patient?**

Action potential of motor nerve

Miniature end plate potential

Resting potential of smooth muscle

Action potential of cardiac muscle

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Answer :B

- 7) **A 55-year-old woman was undergoing major surgery to remove a breast carcinoma. The woman, who was an heavy smoker, had been suffering from chronic obstructive pulmonary disease for 15 years. A drug was administered preoperatively and the anesthesia was supplemented with a skeletal muscle relaxant. Which of the following drugs would be contraindicated for this patient?**

Tubocurarine

Clonidine

Vecuronium

Answer: A

Tubocurarine can cause histamine release from mast cells. A prominent effect of histamine is bronchoconstriction and therefore tubocurarine should not be used in a patient with asthma or COPD.

C and D , Each of these two nondepolarizing neuromuscular blocking drugs could be used since these agents do not release histamine

**8) \*\*A patient was administered a neuromuscular blocker (NMB) prior to a surgical procedure to produce skeletal muscle paralysis. This NMB drug caused initial skeletal muscle fasciculations before the onset of paralysis. Which of the following neuromuscular blockers was most likely administered to this patient?**

- A. Cisatracurium.
  - B. Succinylcholine.
  - C. Diazepam.
  - D. Tubocurarine
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Correct answer = B. Depolarizing NMBs cause muscle fasciculations before causing paralysis. Nondepolarizing NMBs do not cause muscle fasciculations.

**9) \*\* Which of the following is correct regarding the use of isotretinoin in the treatment of acne?**

- A. Isotretinoin is given intravenously in the treatment of acne.
  - B. Isotretinoin acts primarily on the membrane receptors.
  - C. If given in high dosages, isotretinoin can indirectly increase the concentration of Propionibacterium acnes bacteria.
  - D. Isotretinoin activates prostaglandin E2 and collagenase, which causes the adverse effect of inflammation.
  - E. Isotretinoin is contraindicated in pregnancy due to its high risk of birth defects.
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Correct answer = E. Retinoic acids play an important role in mammalian embryogenesis. Excessive amounts of retinoid have been shown to cause teratogenicity, and the exact molecular mechanism is not known.

**10) \*\*A 3-year-old boy has contracted scabies from his playmate at the daycare center. Which of the following would be the most appropriate treatment?**

- A. Azelaic acid.
  - B. Mupirocin.
  - C. Permethrin.
  - D. Triple antibiotic ointment.
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Correct answer = C. Permethrin is a topical scabicide that is preferred due to its lower risk of neurotoxicity. Azelaic acid is a topical treatment for acne. Mupirocin and triple antibiotic ointment are used for the treatment of bacterial infections and would not be appropriate for scabies

**11) \*\*Which of the following is correct regarding trichogenic agents?**

- A. Minoxidil is known to decrease the microcirculation surrounding the follicle, thus decreasing cutaneous blood flow.
  - B. A frequent adverse effect of topical minoxidil is orthostatic hypotension.
  - C. Finasteride inhibits the 5- $\alpha$  reductase enzyme that controls the production of DHT from testosterone.
  - D. An adverse effect associated with finasteride is increased libido.
  - E. Only 6 months of finasteride is necessary for a lifelong benefit.
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Correct answer = C. Androgenic alopecia is associated with DHT concentrations, and finasteride is known to inhibit the 5- $\alpha$  reductase enzyme required for the formation of DHT from testosterone. Continuous use of finasteride is needed to maintain therapeutic benefit for alopecia. Finasteride can decrease libido.

**12) A 56-year-old female with diabetes presents for routine foot evaluation with her podiatrist. The patient complains of thickening of the nail of the right big toe and a change in color (yellow). The podiatrist diagnoses the patient with onychomycosis of the toenails. Which of the following is the most appropriate choice for treating this infection?**

- A. Terbinafine.
  - B. Miconazole.
  - C. Itraconazole
  - D. Griseofulvin.
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Correct answer = A. Terbinafine is better tolerated, requires a shorter duration of therapy, and is more effective than either itraconazole or griseofulvin. Miconazole is not active for this type of infection.

**13) \*\*Which of the following agents is available as an oral therapy for the treatment of visceral leishmaniasis?**

A. Sodium stibogluconate B. Miltefosine. C. Nitazoxanide. D. Tinidazole.

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Correct answer = B. Miltefosine is the only oral agent available for the treatment of visceral leishmaniasis

**14) Which of the following drugs specifically inhibits calcineurin in the activated T lymphocytes?**

- A. Basiliximab.
  - B. Tacrolimus.
  - C. Prednisone.
  - D. Sirolimus
  - . E. Mycophenolate mofetil.
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Correct answer = B. Tacrolimus binds to FKBP-12, which, in turn, inhibits calcineurin and interferes in the cascade of reactions that synthesize interleukin-2 (IL-2)

**A 45-year-old male went to the doctor complaining of severe pruritus in his legs, knowing that the patient has urinary retention due to benign prostatic hyperplasia (BPH), which one of the following antipruritic agents is contraindicated for this patient ?**

- A. Pramoxine
  - B. Lidocaine
  - C. Doxepine
  - D. Minoxidil
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Answer : C. Doxepine has anti cholinergic effects , and this is why it is contraindicated in patients with Urinary retention

**15) *\*\*All of the following are true combinations except :***

- A. Clindamycin with benzoyl peroxide
  - B. Bacitracin with polymyxin or neomycin
  - C. Erythromycin with benzoyl peroxide
  - D. Amphotericin with Salicylic acid
  - E. Salicylic acid with benzoyl peroxide
- 

Answer : D

**16) *\*\*All of the following drugs are considered teratogenic and women shouldn't become pregnant for a period of time after using them except:***

- A. Isotretinoin
- B. Acitretin
- C. Tazarotene

- D. Miltefosine
  - E. Permethrin
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Answer : E

Notes □:

- \*NYSTATIN is used only topically to treat Oral thrush and Diaper rash
- \*permethrin is used for scabies and pediculosis
- \* (Trioxsalen,. Methoxsalen )Must be photoactivated by UVA to produce a beneficial effect.
- \*one of the side effects of corticosteroids is : suppression of pituitary-adrenal axis
- \* Minoxidil. Finasteride >> trichogenic agents (increase hair growth )
- \* Eflornithine >> Antitrichogenic Agent (decreases hair growth)

\*\*\*\*\* **Dapsone and Sulphones**: CONTRAINDICATED in patients with G6PD deficiency because they induce hemolysis in the RBCs

- \*Dantrolene used for Malignant hyperthermia
  - \*Spasmolytic agents : Diazepam,baclofen, Gabapentin, ,tizanidine,Dantrolene, botulism toxin
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إن أحسنت فمن الله وإن أسأت فمن نفسي ، وسامحونا اذا في أي أخطاء وبالتوفيق إن شاء الله  
ولا تنسوا الصلاة على رسول الله ﷺ

**THE END**  
**DONE BY ✓Abdalrhman Froukh**