

Sept 2013 MCQs

[MD73](#) A patient for surgery is allergic to [azithromycin](#). What else would you avoid?

- A. [Clindamycin](#)
- B. tobramycin
- C. clarithromycin
- D. .?..-mycin
- E. ..?..mycin

Which of the following can precipitate glaucoma:

- A. Atropine
- B. [Clonidine](#)
- C. Pilocarpine
- D. Latanoprost
- E. Timolol

Answer is Atropine

Which of the following are metabolised by CYP450: (*was more specific - CYP 2D6*)

- A. [Fentanyl](#)
- B. [Oxycodone](#)
- C. [Tramadol](#)
- D. Codeine
- E. b, c and d

A 42 year old body builder takes anabolic steroids. He presents for orthopaedic surgery. Which of the following is likely to be a problem for him?

- A. Hypothalamic-pituitary axis suppression
- B. Osteoporosis - used to Rx osteoporosis
- C. Hypokalaemic metabolic acidosis
- D. Hypoglycaemia
 - Alt:

A 27 year old man on anabolic steroids presents for surgery. What are your concerns?

- a) HPA axis suppression
- b) osteoporosis
- c)-e) unable to recall

Digoxin toxicity causes:

- a) PR interval shortening and tachyarrhythmias. slows AV conduction (via vagal activity)
- b) QT prolongation and ventricular bigeminy

classic ECG:

SVT with slow ventricular response

PVCs/bigeminy/trigeminy

any type of block

VT

- c) Constipation - diarrhoea
- d) Visual disturbance
- e) Serum levels >1ng/ml >2.4ng/ml

GIT: Nausea, vomiting, anorexia, diarrhoea

- Visual: Blurred vision, yellow/green discolouration, haloes
- CVS: Palpitations, syncope, dyspnoea
- CNS: Confusion, dizziness, delirium, fatigue

(new) Heparin dose given in international units because it is derived from:

A. salmon sperm

B. porcine intestine & cow lung

C. sweet clover (precursor of dicumarol/warfarin)

D. bovine collagen

E. Willow bark

- *Wikipedia says it was originally identified from dog liver and one unit stopped cat's blood from clotting for 24 hours, but that wasn't an option either.*
- *... from what people tell me the answer is porcine intestine*

Neurokinin antagonists are a new drug being used to treat nausea/vomiting. They work by

- a) vestibular neuron
- b) increased gastric emptying

- c) opioid receptor at vomiting centre
- d) both serotonin and dopamine

(new) Anti-emetic drug neurokinin receptor antagonists inhibit:

- A. inhibits the effects of Substance Y (*it did say Y*) on pain receptors
- B. ... working on 5HT and D2 receptors
- C. inhibits opioid receptor effects ?peripherally
- D. ?

All are documented side effects of [droperidol](#) EXCEPT:

- a) hypotension
- b) tardive dyskinesia
- c) acute dystonic reactions
- d) prolonged QT
- e) torsades

Nitric oxide administration

- A. diluted in oxygen flow to ensure accurate small concentration **high conc**
- B. 0.06-23 ppm used for pulmonary hypertension **0.06-0.2**
- C. scavenged by Haemoglobin **not metabolised**
- D. half life of 90-120s **seconds**
- E. ?

Which is correct about alpha blockers

- A. [phenoxybenzamine](#) is a non competitive alpha 1 blocker **α_1 & α_2**
- B. phenoxybenzamine should be used in phaeochromocytoma treatment after beta blockers
- C. prazosin causes vasodilation and decreased venous return - **arteries & veins with little or no reflex tachy**

(new) Offset is due to redistribution:

- A. [Morphine](#)
- B. [Fentanyl](#)
- C. [Methadone](#)
- D. [Oxycodone](#)
- E. [Codeine](#)

(new) [Paracetamol](#):

A. pKa 3.5

B. Metabolism via ?glucuronidation/?sulphonation

(new) Question about why HCl added to lignocaine preparations?....

- can't remember options
- Answer was "To increase water solubility" or something along those lines. Rest were clearly wrong

(new) Question about partial agonists

A. Are not used clinically as competitive antagonists of full agonists

B. difference between agonists and partial agonists is that partial agonist don't have full intrinsic efficacy

C. other options all wrong

(repeat) An elderly man on PCA morphine is found obtunded. Most likely cause?

A. Accumulation of M-6-G

B. Accumulation of M-3-G

C. Accumulation of Norcodeine

D. ?Accumulation of Normorphine

(repeat) After 30 minutes of giving [thiopentone](#), the amount remaining in the brain (specified TOTAL dose)

A. 30%

B. 10%

C. 5%

D. 1%

E. 0.1%

(repeat/reworded) Two other agents found in thiopentone preparation are:

a) Sodium carbonate and N₂

b) Sodium bicarbonate and N₂

c) CO₂ and Sodium bicarbonate

d) ?

e) unable to recall

Comment: *there were two that had bicarbonate and three with sodium carbonate with various other options for second additive*

(new) Offset of noradrenaline is due to:

- A. Catechol O-methyl transferase
- B. Re-uptake into sympathetic ganglia
- C. monoamine oxidase
- D. ?
- E. ?

(new) What is NOT true about benzodiazepines?

- A. ?? Increasing dose results in less NM blocker dose

(new) [Fentanyl](#):

? Onset in 4 mins due to high lipid solubility

(repeat) Stopping a patients beta-blockers on admission to hospital may cause

- a) myocardial ischaemia
- b) bradycardia
- c) premature labour
- d) hypoglycaemia

(new) [Adenosine](#) and [amiodarone](#) effects (*poorly remembered except for option B*)

- A. both work on AV node?
- B. adenosine half life 90-120s and amiodarone half life 10 hours
- C-E. *options all involved saying both drugs had similar effects*

Comment: *I remember option B being worded "Adenosine half life 10s and amiodarone 10 hours" - there was a second question about adenosine that had half life of 90-120s as an option but in this question I'm pretty sure the adenosine half life was correct and amiodarone incorrect. Correct option was about AV node*

Physiology

Which of the following is true about the CSF?

A. 150ml is produced per day 500ml made & absorbed/24hrs. 150 in total 75 in head, 75 in spinal cord

B. It is mainly absorbed in the spinous arachnoid villi 90%

C. Usual pressure is 110mmCSF

D. ?

E. ?

Answer is pressure of 110mmCSF

A neonate with type A RhD negative blood will have what type of antibodies?

A. Anti-A and anti-D antibodies

B. Anti-B and anti-D antibodies

C. Anti-A antibodies

D. Anti-B antibodies

E. None of the above

Order of brain waves in the progression to sleep:

- a) Beta alpha theta delta
- b) Alpha beta delta theta
- c) Alpha beta theta delta
- d) Beta alpha delta theta
- e) Beta theta alpha delta

- Repeat/?reworded answers (very wordy answers it seemed to me)

Difference between pressure wave in aorta and pressure wave in radial artery

A. bigger incisura in aortic root trace compared to radial artery trace

B. MAP higher in aortic root trace compared to radial artery trace

C. Systolic pressure higher in aortic root trace compared to radial artery trace

D. Pulse pressure lower in radial artery trace compared to aortic root trace

E. ?

(repeat) How much O₂ is dissolved in blood?

A. 6ml breathing 100% O₂ at 3 atm

B. 3ml per litre breathing room air at 1 atm

C. ?

(Repeat) pH changes from 7.4 to 7.1, how does H⁺ ion concentration vary

- A. decreases by 50%
- B. decreases by 100%
- C. increase by 150%
- D. increases by 100%
- E. increase by 20%

- Answer: [H⁺] increases from 40nM to 80nM, that is it doubles, so a 100% increase.

(New) Something like "Compensatory mechanisms to blood loss mean that a patient will only die with how much blood loss?":

- A - Losing 10-20% blood volume will cause them to die
- B - ". 20-30% "
- C - ". 30-40% "
- D - ". 40-50% "
- E - ". >50% "

(repeat) Absolute humidity

- A. Units are g/m³
- B. can be measured with a wet/dry bulb
- C. can be measured with a hair hygrometer
- D. is the vapor pressure divided by saturated vapor pressure

(new) The rate of an enzyme reaction is measured by

- A. Q₁₀
 - B. R₁₀
 - C. E₁₀
 - D. ?
 - E. ?
- a total of 5 options consisting of a letter and subscript 10

(repeat) The following are all second messengers except

- A. Inositol triphosphate
- B. Diacyl glycerol
- C. G proteins
- D. Nitric oxide

E. Calcium

(repeat) What is true of colloids?

A. Dextran 40 improves microcirculatory flow

B. includes hartmanns and gelofusin

C. ?

(?repeat) Turbulant flow is more likely with

A. Increasing viscosity of gas (it did say viscosity)

B. Increasing temperature of gas

C. Reynolds number > 2000 (definitely said more than)

D. Increasing length of tube

E. Increasing radius of tube

- Comment: *I remember this as being about turbulent flow*

Anatomy

(repeat) Spinal cord in adults ends at what level:

A. L1

B. S3

C. L3

D. ?

(repeat) SVC is formed by which two structures:

a/ right and left brachiocephalic

(new) Which is not true regarding dermatomes?

A/ T10 around level of umbilicus

B/ T4/5 at nipple level

C/ T1 next to C3 and 4

D/ T12 at supra-pubic region and the top of the buttocks

- Comment: I think one option was T8 identifies the rib borders.

(new) What is NOT contained in the epidural space?

A. Fat

B. Posterior spinal artery

C. Posterior venous plexus

D. Anterior venous plexus

E. loose connective tissue

- *(These were definitely all the answers, I remember them like this too)*
- Alternate E. ?lymphatics

Unclassified

(new) Question about diathermy, Bipolar v Monopolar...: (*can't remember exactly*)

A. bipolar cutting (?coagulation) occurs at the active plate - **yes?!?**

B. monopolar uses AC current

C. Bipolar cannot be used to coagulate

D. something about grounding and bipolar?

E. it wouldn't work if it was covered in blood