

PHARMACOLOGY MCQs

1 Concerning Carbamazepine;

- A) Is poorly absorbed orally
- B) Plasma concentration correlates well with CSF concentration
- C) Has no active metabolites
- D) Metabolism is inhibited by Phenytoin
- E) May cause polyuria

2 With respect to the BDZ receptor;

- A) They form part of GABA_B receptor complex
- B) Binding of Benzodiazepine increases chloride ion conductance
- C) Binding of Benzodiazepine facilitates the excitatory action of the receptor
- D) They are present in the CNS, and skeletal muscle
- E) Flumazenil is an agonist at the Benzodiazepine receptor

3 Glucagen;

- A) Is a hormonal product of pancreatic beta cells
- B) Increases blood sugar by decreasing CAMP
- C) Is useful in reversing the cardiac effects of severe beta blocker overdose
- D) Causes vasoconstriction of smooth muscle
- E) Decreases heart rate and force of contraction

4 Concerning opiate drugs;

- A) Withdrawal is rarely fatal
- B) There is tolerance to effects such as myosis
- C) IV heroin is followed by an intense orgasm
- D) Morphine has no active metabolites
- E) Naloxone is given IV only

5 In pregnancy;

- A) Phenobarbitone reduces the risk of intracranial bleeds in pre-term infants
- B) Drugs with MW250-500 have difficulty crossing the placenta
- C) Folic acid increases the risk of spinal defects
- D) Drugs reach the placenta via the umbilical artery
- E) Phenytoin binds to maternal protein with greater affinity than foetal protein

6 Phenytoin;

- A) Acts mainly by altering Cl⁻ conductance
- B) Unbound in plasma
- C) Class 1B antiarrhythmic
- D) Active metabolites contribute to effect
- E) Half life is two hours

7 The following can reach a maximal response;

- A) Competitive antagonist
- B) Partial agonist
- C) Agonist plus competitive antagonist
- D) Partial antagonist
- E) Agonist and irreversible antagonist

8 Thiopentone;

- A) Is a Benzodiazepine derivative
- B) Increases intracranial pressure
- C) Has anti-convulsant activity
- D) Has a brief duration of action due to elimination half life of 5 minutes
- E) Can induce labour in late pregnancy

9 Regarding the action of BDZs;

- A) They act via GABA_B receptor chloride channel
- B) They appear to increase the duration of GABA-gated channels
- C) They appear to interact with alpha subunit of GABA receptor
- D) They directly initiate chloride current
- E) All of the above

10 Which of the following BDZs is metabolised directly to inactive metabolites;

- A) Diazepam
- B) Chlordiazepoxide
- C) Flurazepam
- D) Oxazepam
- E) Prazepam

11 Regarding anti-inflammatories;

- A) Mesoprotol is less effective than H₂ blockers for the prevention of non steroidal anti-inflammatory induced gastrointestinal damage
- B) Salicyclism is irreversible
- C) Most non-steroidals have low protein binding
- D) Thromboxane synthesis inhibition by Aspirin is reversible
- E) Colchicine inhibits the formation of leukotriene B₄

12 Ranitidine;

- A) Undergoes extensive hepatic metabolism
- B) Has a volume of distribution about the same as total body water
- C) Is more effective than Omeprazole in decreasing acid secretion in the stomach
- D) Is excreted 20% unchanged in the kidney
- E) Has a highly variable bioavailability

13 Ipatropium bromide;

- A) Is a tertiary amine compound
- B) Is a muscarinic agonist drug
- C) Is available as an intravenous formulation
- D) Is a synthetic analogue of atropine
- E) Is not of use in chronic obstructive airways disease

14 Insulin;

- A) Is a large protein
- B) Is metabolised solely by the kidney
- C) The insulin receptor consists of alpha and beta subunits
- D) C-Peptide has a greater hypoglycaemic action than insulin
- E) Hydrocortisone increases the affinity of insulin receptors for insulin

15 In regards to breast feeding and antibiotics, which statement is false;

- A) Chloramphenicol concentration in milk may cause bone marrow suppression
- B) Penicillin has very low concentration in breast milk
- C) Chloramphenicol concentration in breast milk is not sufficient to cause the grey baby syndrome
- D) Tetracyclines concentration in breast milk - less than 30-40% of maternal serum may cause permanent tooth staining in infants
- E) Majority of antibiotics taken by nursing mothers can be detected in breast milk

16 With respect to bronchodilators;

- A) Thiophylline modifies the late response in asthma
- B) Salbutamol inhibits adenylyl cyclase
- C) B₂ receptors are most sensitive to Noradrenaline
- D) Cromolyn sodium is effective in reducing the symptomatic severity of perennial asthma
- E) Antimuscarinic agents have no role in treatment of chronic airways limitation

17 Naltrexone;

- A) Cannot reverse antagonists at the delta and Kappa receptors ie mu selective
- B) Has bulkier substituents at the N₁₇ position
- C) Does not undergo first pass metabolism
- D) Has a short half-life and blocks Heroin for 8 hours
- E) Is characterised by tolerance and a mild abstinence syndrome

18 Use of Naltrexone for treatment of alcoholism is characterised by increased alcohol intake;

- A) In experimental animals who received treatment
- B) No effect without therapy
- C) No reduction in intake for those who relapse
- D) Reduction in subjective 'high'
- E) Clear evidence of durability of effect

19 Regarding volume of distribution, all are true except;

- A) Can exceed the physical volume in the body
- B) Relates the amount of drug in the body to the concentration of drug in the blood, plasma, afferent
- C) It is a volume
- D) Drugs completely retained intravascularly have a high volume of distribution
- E) Can be equal with the physical volume of the body

20 Isoproteriol;

- A) Is a B₂ selective agonist
- B) Is a moderate bronchodilator
- C) Causes maximal bronchodilatation
- D) Duration of action is 60-90 minutes
- E) All of the above

21 In regard to the use of Ticlopidine;

- A) Haemorrhage is not an adverse effect
- B) Cannot be used in people who cannot tolerate Aspirin
- C) Adverse effects include respiratory depression and tinnitus
- D) Has no effect on prostaglandin synthesis
- E) Haemolytic anaemia occurs in 1%

22 In respect to Glyceryl Trinitrate;

- A) It is light sensitive
- B) It has > 50% bioavailability
- C) Arteries dilate more than veins
- D) It decreases cardiac contractility
- E) It decreases cardiac ejection time

23 With relation to Streptokinase;

- A) Its action is splitting thrombin molecules
- B) It is sourced from human plasma
- C) Intra-arterial administration is most effective
- D) Prior exposure may result in antibody formation
- E) It attaches to, then activates, thrombin

24 Concerning drugs in the elderly;

- A) Decline in hepatic phase II reactions are more important than decline in phase I reactions
- B) The half-life of most Benzodiazepines is not significantly increased with age
- C) <10% of the elderly population will have a normal creatinine clearance
- D) Decreased blood flow to the liver accounts for the decrease of ethanol clearance in the elderly
- E) Evidence suggests the elderly are both more responsive to anti-depressants as well as more sensitive to their toxic effects

25 In relation to classes of antiarrhythmic drugs;

- A) Class I action is sympathoplegic
- B) Class I action is sodium channel block
- C) Class III action is shortening of the action potential duration
- D) Class IV action is sodium channel block
- E) Class III action is sympathoplegic

26 In relation to antihypertensives;

- A) Verapamil is less cardiac depressant than Nifedipine
- B) ACE inhibitors are effective inhibitors of the Kallikren System
- C) Enalapril is conjugated to the more active prodrug
- D) Nitroprusside is metabolised in red blood cells
- A) Captopril bioavailability is improved when it is taken with food

Trimethoprim

- A) Inhibits formation of dihydrofolic acid
- B) Is a weak acid
- C) Inhibits dihydropteroate synthase
- D) Is ineffective against clamydia
- E) Is concentrated in prostatic tissue

28 Vecuronium;

- A) Has significant ANS effects
- B) Primarily acts as a competitive antagonist at muscarinic cholinergic receptors
- C) Is predominantly renally excreted
- D) Induced blockade is surmountable
- E) Is metabolised over 20-40 minutes by plasma cholinesterase

29 In antimicrobial resistance to antibiotics;

- A) Beta lactamases can be produced by pseudomonas sp.
- B) Resistance due to PBP alteration cannot be overcome by increased drug concentration
- C) Resistance in gram positive organisms is never due to membrane impermeability to antibiotic
- D) Beta lactamases hydrolyse Penicillins but not Cephalosporins
- E) MRSA produce PBPs with high affinity for Penicillins

30 The following are all mechanisms of actions except;

- A) Ceftriaxone is a cell wall synthesis inhibitor

- B) Vancomycin is a cell wall synthesis inhibitor
- C) Teicoplanin is a protein synthesis inhibitor
- D) Chloramphenicol is a protein synthesis inhibitor
- E) Sulfonamides competitively inhibit dihydropteroate synthase

31 Regarding Vecuronium;

- A) It is a depolarising neuromuscular blocker
- B) It has sustained response to tetanic stimulus
- C) Excreted mainly through biliary system
- D) Has severe effect on the cardiovascular system
- E) Neostigmin will augment its effect

32 Concerning the use of drugs in children;

- A) The principles of drug absorption in infants are generally different from adults
- B) Protein binding of drugs is actually increased in neonates
- C) Bilirubin can displace drugs such as Phenytoin from Albumin in neonates thus potentiating toxicity
- D) Neonatal GFR is slightly higher than adults requiring higher doses for renally eliminated drugs
- E) Maternal drug use during pregnancy has no effect on neonatal metabolism

33 Nalidixic acid;

- A) Is a urinary antiseptic
- B) Is a quinolone drug
- C) Is active orally and is excreted in the urine partly unchanged and partly as inactive glucuronide
- D) Is inactive against proteins and pseudomonas
- E) All of the above

34 The actions of carbon monoxide include all except;

- A) Combined irreversibly with oxygen binding sites of haemoglobin
- B) Interfere with dissociation of oxyhaemoglobin
- C) Reduce transfer of oxygen to tissues
- D) Development of atherosclerotic heart disease

E) Irreversible damage to myocardium

35 Clearance;

- A) Involves drug elimination at three major sites
- B) Is dependent on the GFR
- C) May be capacity and non-linear
- D) May be flow – dependant (Michaelis –Menten elimination)
- E) Is defined as the rate of elimination divided by the drug dosage

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