

QUESTION

- What is epinephrine reversal phenomenon.

QUESTION

- What is the rationale for the use of following drugs:
 - i. Timolol in glaucoma
 - ii. Tamsulosin in BPH
 - iii. Ipratropium as anti asthmatic drug
 - iv. Epinephrine in anaphylactic shock
 - v. Neostigmine in myasthenia gravis

Variation in the sensitivity of a population of individuals to increasing doses of a drug is best determined by which of the following?

- a. Efficacy
- b. Potency
- c. Quantal dose response curve
- d. Graded dose response curve

A 24 years old patient is to be treated for toothache with an analgesic. Drug X and Y are 2 analgesics with the same mechanism of action. Drug X in a dose of 5 mg produces the same magnitude of response as 500 mg of drug Y. This most likely means:

- a. Drug X has less potency than drug Y
- b. Drug X has more efficacy than drug Y
- c. Drug Y has more efficacy than drug X
- d. **EC 50 of drug Y is more than the EC50 of drug X**

The phenomenon of decrease in intensity of response to a given dose of a drug after repeated administration so that greater amount of drug is required to produce the same previous effect is called:

- a. Allergy
- b. Dependence
- c. **Tolerance**
- d. Idiosyncrasy

- A drug with a half life of 20hrs is administered by continuous IV infusion. Which of the following best approximates the time for the drug to reach steady state?
 - a) 20hrs
 - b) 33hrs
 - c) 40hrs
 - d) 80hrs

• The activation of muscarinic receptors in bronchiolar smooth muscles is associated with:

- a) Activation of adenylyl cyclase
- b) Decrease in cAMP formation by G proteins
- c) **Increase in IP3 and DAG**
- d) Opening of Na/K cation channel

- The best drug for distinguishing between myasthenia crisis (insufficient therapy) and cholinergic crisis (excessive therapy) is:
 - a. Atropine
 - b. Ecothiophate
 - c. **Edrophonium**
 - d. Physostigmine

• Which of the following is a direct acting cholinomimetic that is lipid soluble and is used to facilitate smoking cessation.

- a) Acetylcholine
- b) Bethanechol
- c) Neostigmine
- d) Varenicline

Which of the following defines the concentration or dose between the minimum effective concentration or dose and minimum toxic concentration or dose?

- a. Efficacy
- b. Intrinsic activity
- c. Therapeutic index
- d. **Therapeutic window**

Which of the following ligands is correctly coupled with its receptor signaling mechanism?

- a. Adrenaline: Ion channel linked receptors
- b. Acetylcholine: Intracellular receptors
- c. **Growth hormones: Tyrosine kinase receptors**
- d. Thyroid hormones: G protein coupled receptors

A patient is administered insulin to a patient to oppose the hyperglycemic effects of Glucocorticoid therapy. This is an example of

:

- a. Chemical Antagonism
- b. Competitive Antagonism
- c. Physical Antagonism
- d. Physiological Antagonism**

A patient is administered drug A that produces no effect on its own and causes a right and downward shift on the dose response curve of another drug B and decreasing its maximum efficacy. Drug A is most likely an:

- a. Competitive reversible antagonist
- b. Irreversible antagonist**
- c. Partial Agonist
- d. Physiological Antagonist

A patient was given 200mg dose of drug IV and after 2 hours plasma concentration was 100mg. If the drug follows first order kinetics, what will be the plasma concentration 6 hours after its administration.

- a) 25mg
- b) 50mg
- c) 12.5mg
- d) 6.25mg

Which of the following correctly defines a receptor?

- a. A carrier that transports drug
- b. A macromolecule of a cell to which a drug binds and thereby producing its effects**
- c. An enzyme involved in drug metabolism
- d. A plasma protein to which drug binds

Which of the following term best describes the conversion of inactive drug into an active product?

- a) Hoffman elimination
- b) Distribution
- c) **Pro drug**
- d) Placebo

All of the following statements are true regarding Competitive reversible pharmacological antagonist, **EXCEPT**:

- a. It causes a parallel shift of the dose response curve of an agonist to the right
- b. It decreases the potency of an agonist
- c. **It increases the efficacy of an agonist**
- d. Its effect can be overcome by increasing the agonist concentration.

Tolerance and drug resistance can be a consequence of which of the following conditions?

- a. Activation of a drug after hepatic first pass
- b. Increased Bioavailability
- c. **Receptor downregulation**
- d. Drug synergism

All of the following are 2nd messengers **EXCEPT**:

a. IP3

b. cAMP

c. Adenylyl cyclase

d. DAG

Which of the following administration routes is most likely to subject a drug to a “first – pass” effect in the liver?

- a. Inhalation
- b. Intravenous
- c. **Oral**
- d. Sublingual

The elimination of a drug is described as being heavily dependent on phase II metabolic reaction. Which of the following is a phase II reaction as far as drug elimination goes?

- a. **Acetylation**
- b. Deamination
- c. Ester hydrolysis
- d. Oxidation

- Which of the following sympathomimetic drug is a non-Catecholamine?
 - a. Adrenaline.
 - b. Noradrenaline.
 - c. Dopamine.
 - a. Ephedrine**

• Which of the following adrenergic receptors is most likely a presynaptic receptor that mediates decrease release of neurotransmitter through negative feedback?

a) α_1

b) α_2

c) β_1

d) β_2

Treatment of organophosphorus poisoning

• A 12years old boy, allergic to peanuts, is presented to emergency department with anaphylactic shock after consumption of peanuts. What would be the most appropriate drug to treat this patient?

a) Ephedrine.

b) **Epinephrine.**

c) phenylephrine

d) Dobutamine

Accepted therapeutic indications for use of antimuscarinic drugs include all of following except:

- a) Glaucoma
- b).Motion sickness
- c)Parkinson disease
- d) Antidote for organophosphate poisoning

• 60-year-old asthmatic man comes in for a checkup and complains that he is having some difficulty in starting to urinate. Physical examination indicates that the man has a blood pressure of 160/100 mm Hg and a slightly enlarged prostate. Which of the following medications would be useful in treating both of these conditions (BPH and hypertension)?

- a) Doxazosin.
- b) Labetalol.
- c) Phentolamine.
- d) Propranolol.

Q2. Cholinergic/ parasympathetic receptors, their subtypes, location, and postreceptor mechanism

● Propranolol is useful in all of the following conditions except:

(a) Angina

(b) Familial tremor

(c) Hypertension

(d) Partial AV block

Encircle the characteristics of an orphan drug.

- a) A very cheap drug
- b) A drug which has no therapeutic use
- c) A drug which acts on orphan receptors
- d) A drug needed for treatment or prevention of a rare disease.**

• Which of the following drug relieves bronchospasm in patients with chronic obstructive pulmonary disease (COPD) by acting on muscarinic receptors?

- A. Epinephrine
- B. Ipratropium
- C. Ritodrine
- D. Salbutamol

QUESTION

- Tabulate five groups of drugs (with examples) and their mechanism of action used for treatment of glaucoma.

Which of the following may precipitate an attack of open angle glaucoma if instilled into eye?

a) Physostigmine.

b) Atropine.

c) Pilocarpine.

d) Ecothiophate

QUESTION

- Enumerate uses of indirectly acting cholinomimetics

- The term that best describes the unexpected abnormal response to a drug is:
 - a) Tolerance
 - b) Tachyphylaxis
 - c) **Idiosyncrasy**
 - d) Resistance

QUESTION

- Give therapeutic classification of anticholinergics

- Which class of drug can mask one of the major symptoms hypoglycaemia in a person with diabetes mellitus?
 - a. Alpha-adrenergic agonist
 - b. Alpha-adrenergic antagonist
 - c. Beta-adrenergic agonist
 - d. **Beta-adrenergic antagonist**

QUESTION

- Classify sympathomimetics on the basis of mode of action

QUESTION

- Enumerate catecholamines along with their Characteristics.

QUESTION

- Write down the therapeutic uses of epinephrine

QUESTION

- Describe cardiovascular actions of atropine on CVS.
- Why does atropine causes bradycardia on low doses.

● Which Beta-adrenergic blocker also competitively blocks Alpha-adrenergic receptors?

- a. **Labetalol**
- b. Metoprolol
- c. Nadolol
- d. Pindolol

. A 45 years old man with long standing diabetes mellitus is admitted to ward from emergency department and you wish to examine his retina for possible changes. Which of following drugs is a good choice when papillary dilatation but not cycloplegia is desired?

- a. Norepinephrine
- b. **Phenylephrine**
- c. Pilocarpine
- d. Tropicamide

• **Propranolol does not block the following action of adrenaline:**

(a) Bronchodilation

(b) Lipolysis

(c) Muscle tremor

(d) **Mydriasis**

● The loading dose for a drug given by IV route with volume of distribution V_d 42L, target plasma concentration 5mg/L and Clearance 200L/min would be:

- a) 500mg
- b) **210mg**
- c) 1G
- d) 40 mg

QUESTION

- Write down the adverse effects of antimuscarinic drugs.

- Physostigmine is the antidote for atropine poisoning. Neostigmine is not suitable as an antidote to atropine because it cannot overcome the atropine's adverse effect on which of the following?
 - a. Skeletal muscle
 - b. Smooth muscle
 - c. **Central nervous system**
 - d. Cardiovascular system

Chronic use of an antagonist over a long period of time may cause an increase in the number of receptors. This is called:

- a. Desensitization
- b. Down regulation
- c. Tolerance
- d. **Up regulation**

- Which of the following drug is an established inducer of cytochrome P450enzymes
- a) Cimetidine
- b) Ketoconazole
- c) Grapefruit juice
- d) **Barbiturates**