MCQs (Drugs Acting on CNS, NSAIDs, rheumatoid arthritis, gout)

A talented 21 year old violinist's musical career is in trouble because he becomes acutely anxious, suffering from tremors and palpitations, whenever he is asked to play in front of an audience.

What medication can help him in reducing his symptoms?

a) Desipramine

b) Citalopram

c) Risperidone

d) **Propranolol**

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Choose the drug that has been found to be more selective for the $\alpha 1$ subtype of BZD receptor, and produces hypnotic action but little antianxiety, muscle relaxant or anticonvulsant actions:

A. Buspirone

B. Zolpidem

C. Flumazenil

D. Melatonin

The mechanism of action of barbiturates differs from that of benzodiazepines in that they:

A. Do not affect the GABA-benzodiazepine receptor-chloride channel complex

B. Act as inverse agonists at the benzodiazepine receptor

C. Increase the frequency of chloride channel opening without affecting its life time

D. Have both GABA-facilitatory as well as GABA-mimetic actions

The following drugs exert their action through the GABA A–receptor Cl^- channel complex except:

A. Baclofen

B. Zolpidem

C. Diazepam

D. Phenobarbitone

Which agent is best used in the emergency room setting for patients who are believed to have received too much of benzodiazepine drug or taken an overdose of benzodiazepines?

A. Diazepam

B. Naloxone

C. Dantrolene

D. **Flumazenil**

A 51 year old man suffering from episodic leg cramps started a treatment with a drug that activates GABA- B receptors in CNS. This activation most likely opened which of the following ion channels?

A. Cl-

B. Na+

C. Ca2+

D. K+

Which statement concerning barbiturates is accurate?

A. Barbiturates may increase half life of drugs metabolized by liver

B. **Alkalinization of urine accelerates the elimination of barbiturates**

C. Respiratory depression caused by barbiturate overdosage can be reversed by flumazenil

D. Barbiturates are useful in treatment of intermittent porphyria

Which of the following is the most suitable drug for a 6-year-old girl suffering from absence seizures with occasional generalized tonic-clonic seizures:

A. Ethosuccimide

B. Sodium valproate

C. Carbamazepine

D. Phenytoin

Select the antiepileptic drug that in addition is a preferred treatment for post herpetic neuralgia and pain due to diabetic neuropathy:

A. Carbamazepine

B. **Gabapentin**

C. Lamotrigine

D. Primidone

A woman who has been taking oral contraceptives (estrogen plus progestin) for several years is diagnosed with epilepsy and started phenytoin. What is the most likely consequence of adding phenytoin?

A. Agranulocytosis or aplastic anemia, requiring stopping both drugs immediately

B. Breakthrough seizures from increased phenytoin clearance

C. **Reduced contraceptive efficacy**

D. Thromboembolism from the estrogen component of the contraceptive

Select the antiepileptic drug that is effective in manic-depressive illness as well:

A. Ethosuccimide

B. Primidone

C. Phenobarbitone

D. **Carbamazepine**

A lady with the history of taking anti seizure drugs during her pregnancy gave birth to a child having spina bifida, cleft palate, and digital abnormalities.

Which one of the following drug is she taking during her pregnancy

a. Ethosuximide
b. Benzodiazepines
c. **Sodium valporate**
d. Carbamazepine

An 18 year old girl who underwent an emergency appendectomy, post operatively she was diagnosed as having acute intermittent porphyria when she complained of abdominal pain, nausea, vomiting, constipation and dark colored urine.

Which of the following anesthetic agents is most likely to precipitate this attack?

a. Succinyl choline
b. **Methohexital**
c. Halothane
d. Midazolam

Indicate the anesthetic, which is an inhibitor of NMDA glutamate receptors:

a) Thiopental

b) Halothane

c) **Ketamine**

d) Sevoflurane

A 32 years old man was admitted to the hospital for reduction of a dislocated shoulder. Sedation with diazepam was supplemented with 30% concentration of nitrous oxide.

Which of the following effects most likely occurred after nitrous oxide administration?

A. Malignant hyperthermia
B. Excellent skeletal muscle relaxation
C. **Very profound analgesia**
D. Sharp decrease in blood pressure

Which of the following inhaled anesthetics decreases methionine synthase activity and causes megaloblastic anemia?

a) Desflurane

b) Halothane

c) **Nitrous oxide**

d) Sevoflurane

Four new potential inhalational anesthetics (P, Q, R and S) were tested in laboratory animals. Some pharmacological parameters of each drug are recorded in the table below:

Which of the following drug has the highest potency?

Drug	MAC	Induction
P	5.5	Slow
Q	45.2	Fast
R	12.7	Fast
S	0.9	Slow

A. Drug P

B. Drug Q

C. Drug R

D. Drug S

Which of the following among the inhaled anesthetic is nephrotoxic?

a. **methoxyflurane**
b. nitrous oxide
c. halothane
d. Isoflurane

A child requires multiple minor surgical procedures in the nasopharynx. Which drug has high surface local anesthetic activity and intrinsic vasoconstrictor actions that reduce bleeding in mucous membrane?

a. Cocaine

b. Lidocane

c. Procaine

d. Tetracaine

Epinephrine is sometimes added to commercial local anesthetic solutions for which purpose?

a. It slows the rate of absorption of the local anesthetics

b. It decreases the duration of action of local anesthetics

c. It increases systemic toxicity of local anesthetics

d. It enhances the distribution of the local anesthetics

Dantrolene sodium reduces skeletal muscle tone by:

A. Reducing acetylcholine release from motor nerve endings

B. Suppressing spinal polysynaptic reflexes

C. Inhibiting the generation of muscle action potential

D. **Reducing Ca2+ release from sarcoplasmic reticulum in the muscle fibre**

Which of the following side effects of chlorpromazine and phenothiazine neuroleptics is attributed towards dopamine receptor blockade?

A. Dry mouth,dry eyes

B. Orthostatic hypotension

C. **Extrapyramidal signs**

D. Constipation

Parkinsonian symptoms and tarditive dyskinesia are caused by blockade dopamine in:

a) **The nigrostriatal system**

b) The mesolimbic and mesofrontal systems

c) The chemoreceptor trigger zone of the medulla

d) The tuberoinfundibular system

Which of the following phenothiazine derivatives may produce cardiac toxicity, including ventricular arrhythmias, cardiac conduction block, and sudden death?

a) **Thioridazine**

b) Chlorpromazine

c) Perphenazine

d) Fluphenazine

Which of the following antipsychotic drugs has the high risk of potentially fatal agranulocytosis and risk of seizures at high doses?

a) Haloperidol

b) Risperidone

c) **Clozapine**

d) Chlorpromazine

A45 year old man with a long history of bipolar disorder had been stable on a maintenance lithium treatment for the past year. Which of the following best describes a current working hypothesis about the molecular mechanism of action of lithium?

a) Increased serotonin reuptake into serotonergic terminals

b) Increased synthesis of inositol monophosphate

c) **Decreased synthesis of inositol triphosphate (IP3) and diacylglycerol (DAG)**

d) Increased synthesis of adenylyl cyclase

The principal mechanism of MAO inhibitor action is:

a) Blocking the amine reuptake pumps, which permits to increase the concentration of the neurotransmitter at the receptor site

b) **Blocking a major degradative pathway for the amine neurotransmitters, which permits more amines to accumulate in presynaptic stores**

c) Inhibition the storage of amine neurotransmitters in the vesicles of presynaptic nerve endings

d) Antagonism of alfa2-norepinephrine receptors

A 72yearold man develops acute urinary retention and blurred vision after taking an
antidepressant for 5 days.

Which of the following medications is most likely to cause
such side effects?

a) Venlafaxine
b) Bupropion
c) Escitalopram
d) Amitriptyline

Many therapeutically useful drugs act via brain dopaminergic systems. Which one of the following mechanisms underlying their action is least likely to be useful in the management of Parkinson's disease?

a. Inhibition of dopamine reuptake
b. Increase in Dopamine synthesis
c. Activation of Dopamine receptors
d. Inhibition of dopamine metabolism
e. **Blockade of dopamine receptors**

A 54 years old woman complained to her physician of dizziness and vertigo when standing up rapidly. She had a long history of major depressive disorders and has taken various drugs including imipramine recently. Which of the following receptors most likely mediated the adverse effects of the drug in this patient?

1. B1 adrenergic
2. M1 cholinergic
3. 5HT3 sertonergic
4. **α1 adrenergic**

A 19 years old female has been taking antidepressants over a certain period of time. One night, she makes herself A snack of chicken liver patty and cheese. She soon develops headache, nausea and palpitations. She goes to ER where her BP is found to be 170/100. What antidepressant did she take?

A. **Phenelzine**

B. Nortriptyline

C. Sertraline

D. Trazodone

A 36 year old diagnosed schizophrenic , taking anti psychotic therapy for the last 6 months, suddenly developed tremors at rest , abnormal movements of the limbs and muscle rigidity. Based on history and examination , the patient was diagnosed as having Drug induced Parkinsonism. What would be next step in drug therapy?

A. To prescribe Antidepressants

B. To prescribe Anti muscarinics

C. To increase the dosage of antipsychotics

D. To change the class of antipsychotics

E. To stop further drug therapy

A 65 years old man, taking therapy for Parkinson's disease, comes to the OPD, with complaints of passing brown colored urine. Which of the following drugs may have lead to this condition, in this patient?

A. Diazepam

B. Rifampicin

C. **Levodopa**

D. Tolcapone

Which of the following antiparkinsonian drugs has also been used to treat hyperprolactinemia?

a) Benztropine

b) **Bromocriptine**

c) Amantadine

d) Levodopa

A 51 years old patient with parkinsonism is being maintained on levodopa-carbidopa with adjunctive use of low doses of entacapone but continues to have off periods of akinesia. The most appropriate drug to rescue the patient but that will only provide temporary relief is:

a. **Apomorphine**

b. Carbidopa

c. Ropinirole

d. Selegiline

Which of the following opioid receptor types is responsible for euphoria and respiratory depression?

a) Kappa-receptors

b) Delta-receptors

c) **Mu-receptors**

d) All of the above

Genetic polymorphism in certain hepatic enzymes involved in drug metabolism are established to be responsible for variations in analgesic response to

A. Fentanyl

B. Buprenorphine

C. Methadone

D. **Codeine**

A62 year old woman recovering from surgical repair of multiple fractures was complaining of severe pain. A standard dose of morphine was given intramuscularly. Which of the following adverse effects most likely occurred in this patient?

A. Dysphoria

B. **Miosis**

C. Dry cough

D. Diarrhea

A Young woman is brought into ER , she is unconscious,has pupillary constriction and depressed respiration. Based on the reports, an opioid overdose is almost Certain.

Which of the following drug will be given to treat this condition?

A. **Flumazenil**

B. Dantrolene

C. Naloxone

D. Succinylcholine

Which acetic acid derivative is used to accelerate the closure of patent ductus arteriosus (hole in the heart)?

A. Aceclofenac

B. **Indomethacin**

C. Aspirin

D. Sulindac

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Which of the following drugs could be used to decrease rate of production of uric acid?

A. **Allopurinol**

B. Aspirin

C. Hydroxychloroquine

D. Colchicine

A 52 years old woman recently diagnosed with mild rheumatoid arthritis started a therapy with NSAIDs, but 2 months later, the physician decided to add a disease modifying antirheumatic drug (DMARD) to the therapeutic regimen.

Which of the following is most likely the main advantage of DMARDs over NSAIDs in the treatment of rheumatoid arthritis?

A. To completely cure the disease, after 2-4 months of therapy

B. To cause fewer adverse effects

C. To improve symptoms after one week of therapy

D. **To slow down the progression of bone and cartilage destruction**

An 18 month old boy dies from an accidental overdosage of acetaminophen.

Which of the following is the most likely cause of this patients death?

A. Hemorrhagic stroke

B. **Liver failure**

C. Arrhythmia

D. Non cardiogenic pulmonary edema

A 20 year-old male wishes to take a nonsteroidal antiinflammatory drug and wants to avoid gastrointestinal side effects. Which one of the following drugs is most appropriate?

A. Aspirin

B. **Celecoxib**

C. Ibuprofen

D. Piroxicam

N acetyl cysteine is beneficial in acute paracetamol poisoning because

A. It reacts with paracetamol to form a nontoxic complex
B. It inhibits the generation of the toxic metabolite of paracetamol
C. It is a free radical scavenger
D. **It replenishes hepatic glutathione which in turn binds the toxic metabolite of paracetamol**