NURS549 Midterm EXAM QUESTIONS AND ANSWERS WITH RATIONALES (VERIFIED ANSWERS) |ALREADY GRADED A+

Drugs responsible for Hyperuricemia - ✓✓✓-Loop and Thiazides

Difference between drugs best suited to cross the membrane - ✓✓✓-Lipid (un-ionized) soluble drugs the best usually passive form

Water soluble are ionzied must be small to pass through memebrane

first pass effect - ✓✓✓-concentration of a drug given orally is greatly reduced before it reaches systemic circulation

It is the fraction of lost drug during the process of oral absorption which is related to liver metabolism

Effect of pH - ✓✓✓-Drugs pass through readily when unchanged (unprotonated)

A weak acid in a acidic environment

A weak base in a basic environment

Drug Distribution - ✓✓✓-process by which a drug reversibly leaves the blood stream and enters the interstitium (extracellular fluid) and then the cells of the tissues

Volume of distribution (Vd) - ✓✓✓-A hypothetical volume of fluid into which a drug is dispensed

Plasma protein binding - ✓✓✓-Albumin can reversibly bind a drug and sequester the drug in a non-diffusible form

First order kinetics - ✓✓✓-non-linear or exponential - a constant fraction of the drug is metabolized

Zero order kinetics - ✓✓✓-Linear - a constant amount of drug is metabolized not based on drug concentration

steady state plasma concentration - ✓✓✓-plasma concentration of drug when the maintenance rate of drug administration is equal to the rate of elimination

factors that affect steady state plasma concentration - ✓✓✓-Directly proportional to infusion rate

Inversely proportional to clearance of the drug

4 major receptor families - ✓✓✓-1. Transmembrane Ligand-Gated ion channel-regulates ion flow ex. nicotinic nuerotransmiters

2. Transmembrane G Protein- coupled receptor- most abundant linked to gprotein for second messanger ex. alpha and beta, muscarinic

3. Enzyme linked receptor- activates or inhibits intracellular enzymes ex.insulin

4. Intracellular receptor-most diffuse through the membrane to engage. ex. hormones

second messenger - ✓✓✓-effector molecules that relay signals from recptors on cell surface to target molecules inside the cell in the cystoplasm or nucleus

Therapeutic index - ✓✓✓-the ratio between the toxic and therapeutic(desired and effective) concentrations of a drug in an individual

TD50/ED50

the smaller the value the less safe

TD50 - ✓✓✓-toxic dose in 50% of the population

ED50 - ✓✓✓-Effective dose in 50% of the population

EC50 - ✓✓✓-drug dose the shows 50% of maximal response in an individual

Potency - ✓✓✓-measure of an amount of drug neccessary to produce an effect

efficacy - ✓✓✓-the ability of a drug to elicit a response

Graded dose response curve - ✓✓✓-based on an individual

As the concentration of a drug increases, the magnitude of its pharmacologic effect increases

Quantal dose-response curve - ✓✓✓-plots the fraction of the population that respond to given drug

describes the concentration of a drug that produce a given effect in a population

Adrenergic receptors - ✓✓✓-receptor activated by Norepinephrine

1. Alpha

2. Beta

Cholinergic Receptors - ✓✓✓-Receptors activated by acetylcholine

1.Nicotinic

2.Muscarinic

somatic nervous system - ✓✓✓-works on skeletal muscle

no ganglia

acetylcholine(ACH) on Nicotinic receptors

autonomic nervous system - ✓✓✓-includes sympathetic innnervation of the adrenal medulla.

ACH-nicotinic receptor-adrenal medulla -Epi released into blood- Adrenergic receptor

the sympatheic

ACH-nicotinic receptor -Norepi (post ganglia)-adrenergic

parasympatheic systems

ACH-nicotinic receptor -ACE(post ganaglia)-Muscarinic

Cholinergic agonists - ✓✓✓-act on receptors that are activated by ACH

Nicotinic - ligand gated ion always excitatory

Muscarinic - G protein excite and inhibit

affect all except the sympathetic effector organ

Direct acting cholinergic agonist - ✓✓✓-Acts at the receptor to mimic ACH with a longer duration of action

Indirect-Acting Cholinergic Agonists - ✓✓✓-Inhibit the enzyme acetylcholinesterase, which breaks down ACh

Results in more ACh available at the receptors

Effects of the Cholinergic Agonists - ✓✓✓--Cardiovascular: decrease HR and FOC

-GI: increase tone and motility, increase peristalsis and secretions, relax sphincter muscles

-GU: contract bladder and relax sphincter muscles, stimulate urination

-Eye: constrict pupils

-Lungs: bronchial constriction, increase

secretions