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Question no 1 Answer:

Drug receptors:

Receptor is a macromolecule in the membrane or inside the cell that specifically (chemically) bind a ligand (drug). The binding of a drug to receptor depends on types of chemical bounds that can be established between drug and receptor.

It is defined as a macromolecular or binding site located on the surface or inside the affector cell that serves to recognize the signal molecule/Drug and initiate the response to it but itself has no other function.

Different receptors families:

These receptors divided in four families:

1) **Ligand gated ion channels**
2) **G proteins coupled receptors**
3) **Enzyme linked receptors**
4) **Intracellular receptors.**

Second messenger system:

G protein-coupled receptors, also known as seven--transmembrane domain receptors, 7 TM receptors, heptahelical receptors, serpentine receptors, and G protein-linked receptors, form a large group of .

Second messengers are intracellular signaling molecules released by the cell in response to exposure to extracellular signaling molecules—the first messengers. ... Examples of second messenger molecules include cyclic AMP, cyclic GMP, inositol trisphosphate, diacylglycerol, and calcium.

Question no 2 Answer

Drugs interactions:

A drug interaction is a change in the action or side effects of a drug caused by concomitant administration with a food, beverage, supplement, or another drug. There are many causes of drug interaction.

Types:

(Drug-drug interaction) interactions between drugs come to mind

(Drug-food interaction) interactions may also exist between drugs and foods

(Drug-plant interactions) drugs and medicinal plants or herbs

(Drug-disease interactions)

Pharmacokinetics DI

Pharmacodynamics DI

Pharmacokinetics interactions:

Modifications in the effect of a drug are caused by differences in the absorption, transport, distribution, metabolism or excretion of one or both of the drugs compared with the expected behavior of each drug when taken individually.

a) **Altered PH:** The non ionized form of a drug more lipid soluble and more readily absorbed form GIT than the ionized form does.

ex1 antiacids decrease the tablets dissolution of ketoconazole (acidic)

ex2 H2 antagonists therefore, these drugs must be separated by at least two hours in the time of administration of both.

b) **Altered intestinal bacterial flora:**
Ex 40% or more of the administered digoxin dose is metabolised by the intestinal flora
Antibiotics kill a large number of the normal flora of the intestine increase diaxogin con. And it's increase toxicity.

c) **complexation and chelation :**
ex tetracycline interacts with iron preparations or milk (ca2+) unabsorpable complex.

d) **Drug induced mucosal damage:**
Antineoplastic agent e.g cyclophosphamide, vincristine, procarbazine, inhibit absorption of several drugs e.g. digoxin.

e) **Altered motility:**
Metoclopramide intiemitic increase absorption of cyclosporine, due to the increase of stomach empting time increase the toxicity of cyclosporine.

Question no 3 Answer

Local Anesthesia:

Which cause a reversible loss of sensation for a limited region of the body without necessarily affecting consciousness.

General Anesthesia:

Which result in a reversible loss of unconsciousness.

Stages of Anesthesia:

Stage1: Analgesia: In this stage the patient has decrease awareness of pain. Sometime with amnesia consciousness may be impaired but is not lost

stage 2 : Disinhibition/ excitement:

in the stage 2 the patient appears to be delicious and excited amnesia occurs reflexes are enhanced respiration is typically irregular retaining and incontinence may occurs.

Stage 3: surgical Anesthesia:

In this stage the patient is unconscious

Stage 4 : Medullary depression

In this stage the patient develop server respiratory cardiovascular depression on that require mechanical and pharmacologic support.

Question no 4 Answer:

Heart failure means

that the heart is unable to pump blood around the body properly. It usually occurs because the heart has become too weak or stiff. It's sometimes called congestive heart failure, although this name is not widely used nowadays. Heart failure does not mean your heart has stopped working.

Pathophysiology of heart failure:

In heart failure, the heart may not provide tissues with adequate blood for metabolic needs, and cardiac-related elevation of pulmonary or systemic venous pressures may result in organ

congestion. This condition can result from abnormalities of systolic or diastolic function or, commonly, bopth

Question no 5 Answer:

Broad spectrum antibiotics:

Effect against both gram- ve and gram +ve bacteria

e.g. tetra tine .

Narrow spectrum antibiotics:

Effective against only specific type of bacteria such as isonizid

Bacillus bacteria tuberculosis macrolides and penicilins G”

Part B

Unlike other antimicrobials, antiviral drugs do not deactivate or destroy the microbe (in this case, the virus) but act by inhibiting replication. In this way, they prevent the viral load from increasing to a point where it could cause pathogenesis, allowing the body's innate immune mechanisms to neutralize the virus.

Part B of no 4 question