Abrar Ahmad.

I.D = 15328

Discipline: BS Radiology

(4th semester)

paper: pharmacology

Scanned with CamScanner

Q 1.

Various Routes of Drug Administration: -

(a) oral route: → Many drugs can be administered orally as liquids, capsules, tablets or chewable tablets ie by mouth.

(b) Injection routes.

(c) Sublingual ie beneath tongue.

(d) Rectal route

(e) Vaginal route.

(f) Ocular route.

(g) Otic route.

(h) Nasal route.

Parenteral Route:

It is any route that is not enteral. It can be performed by injection that is using a needle and a syringe.

P.T.O

Scanned with CamScanner

or by iv/io insertion of indwelling catheter.

Location of application of parenteral administration include:

- Central Nervous System (epidural)
- Intracerebral etc
- Intra-arterial (into an artery eg vasodilator drugs in treatment of vasospasm
- Intra-articular
- Intra-cardiac
- Intra-muscular
- Intra-venous
- Sub-cutaneous

It is indirect route to IV access. This route is occasionaly used for drugs and fluids in emergency medicine

Parenteral Route has 3 Benefits.

1. Ability to improve adherance
2. act immediately.
3. Give control over drug delivery

Dis-advantages

(a) once drug delivered, Cannot be withheld.
(b) Require continuous monitoring.
(c) danger of quick side effects.

Scanned with CamScanner

Q. 2 (3)

Water Compartment: It is the percentage of body water contained in various fluid compartments (as added up form Total body water).

It has Two main Components.

① Extracellular Compartment:→ It is amount of body fluids e.g plasma, Serum, blood etc water present outside the cells. It includes plasma, Interitial fluid and transcellular fluid. 1/3 of TBW

② Intracellular:→ It is %age of body fluids of various types present inside the cells of different body tissues and organs it is 2/3 of Total body water

(Types of Extracellar fluid.)

Scanned with CamScanner

There are 3 types of extra-cellar fluids:

(*) Interestitial Compartment :→ It is fluid present in interstitium (surrounding the tissue cells and bathing them in solution of nutrients

(+) Blood plasma.

(+) lymph inside the lymphatic vessels.

Q 3 (A)

Stages of Elimination of drugs

In pharmacological linguistics the elimination of a drug is understood by any one of a number of processes by which a drug is eliminated (ie is cleared or excreted) from the body either in unaltered form

P.T.O

Scanned with CamScanner

or as metabolite.

Some of eliminatory organs are as under.

- Kidneys (main organ).
- Liver - Skin - Lungs, - Glandular structures such as lacrimal or salivary glands

Elimination pathways are as follows.

(+) Urine (+) Tears (+) perspiration.

(+) saliva (+) faeces (+) Respiration.

(+) milk (+) Bile.

Elimination is sum of the following processes meant for removing a drug in pharmacokinetics.

(a) Absorption (b) Distribution

(c) Metabolism (d) Excretion.

P.T.U

Scanned with CamScanner

Q-3 (b)

Total body water clearance:

It can be used as an indicator of how the body is regulating water. A free water clearance of zero means that kidney is producing urine iso-osmotic with respect to plasma. values greater than zero implies that the kidney is producing dilute urine through the excretion of solute-free water

In pharmacology clearance is a pharmacokinetic measurment of volume of plasma from which a substance is completely removed per unit time. usually clearance is measured in L/h or L/min.

P.T.O

Scanned with CamScanner

Thus total body clearance is equal to sum clearance of the substance by each organ (e.g renal + hepatic + lung clearance = total body clearance)

or only renal clearance is sufficient. for a drug then GFR will determine its renal plasma clearance..

The End

Scanned with CamScanner