(*) paper :- General pharmacology - I

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Question - No - 01 :- Enumerate various routes of drug administration, Explain parenteral routes in detail.

Answer No - 1 :- Basically there are three main routes of drug administration.

(1) Enteral

(2) parenteral

(3) others

(1) Enteral Route :- This mean through enteral tube (mouth route) This is the most common & easiest way of drug administration. There are two subtypes of it

(A) Oral route :- This is the most common and easiest way which is used for various dosage form like, Tabeet, capsule, syrup, syspension. disadvage is that, the unconsicous patient cant use and it is also not faverable in emergency.

(B) Sublingual :- (Below the tounge) This route has more absoption then oral route and is usefl for some medication like Angised (~~nitroglycerin~~ Glyceryl trinitrate)

(2) parenteral Route :-

This route administrate drug into the systemic system beyound the enteral cannal (Tube). means it Bypass the GIT. System.

Subcatagories are :-

(A) Intravenous (IV route) :- Through veneus the drugs are administered.

(B) Intramuscular (IM route) :- drugs are administered through muscles.

(C) Subcutaneous :- drugs are administered under the skin.

(3) others :- These routes are beyound the enteral route and as well byond the parenteral These are the following.

(A) Inhalation :- drugs are administered through mouth and inhale into the lungs.

(B) Intranasal :- administration through nose

(C) Intrathecal :- administration of drug directly into CSF (cerebrospinal fleuid).

(D) Topical :- drugs applying locally like creams ointment.

(e) Transdermal :- pitches are usually used through this route in which pitches are put below skin.

(f) Rectal :- drugs usually in children and in unconscious patients are administered through rectal.

Parenteral Route in Detail

This route of administration is mainly used in emergy and for rapid response.

There are two main types.

(1) Intravenous (IV) :- drugs are directly administered into the circulatory system through venous. there is is angle to administere the drug.

advantages :- Rapid response, use in unconscious patient.

disadvantage :- Technical person is required for administration and there is also pain during administration.

There is IV Continuous OR IV Boles.

(2) Intramuscular (IM) :- drug admister through syringe using muscles of Bisep OR hip.

advantage :- fast absorption, use in emergency.

disadvantage :- Technical person, required, feeling pain.

Question No-02 : what does water Compartment mean? Explain its types in detail.

Answer No-02 :

Water Compartment

Mainly there are two Compartment

(1) Extracellular :- out of 42L, 9t is 14L.

(2) Intracellular (Total body water) out of 42L, 9t is 28L.

The body is divided into the above two main types. when the drug is admintered 9t may be in plasma like Intracellular or out of plasma which is extracellular.

Extracellular :- drugs which are low in weight, then it absorb from endothelial junction and capallaries but hydrophilic drugs can not enter the cell. So it remain in plasma. and in intestinal fluid. so the drug is about in 20% of body weight which is equall to 14L in 70 kg body.

Total Body water :- low molecular weight and hydrophobic drugs can absorb well and can enter into the cells, This is 60% in 70 kg body.

and is 42L of total body weight.

Question No-3: what are drug Elimination stages? Explain Briefly.

Answer No-03: Removal of drug from the body is called drug Elimination.

Routes:

(1) Renal: drugs are eliminated through kidney in the form of urine.

(2) Other Routes: Intestinal (fescal) lungs, milk.

Renal Route:

Drugs after metabolism are eliminated through kidney in the form of urine.

Stages

(1) Glomerular filtration: Bowman capsule has Glowmerulas and drug entreate through it with pressure some drugs pass thrugh it especially small size and hydrophobic.

(2) proximal Tubular Secretion: Some drugs are entreate directly thrugh proximal part of nephron.

(3) Distal Tubular Reabsorption:-

Some drugs and useful electrolytes are reabsorb from Tubular part of nephron. and put it back into the blood system.

part-B:- what does Total Body clearance mean?

Body clearance:- Getting clear the body from the drug is called clearance while removing drug from the body is called excreation.

Total clearance means sum of drug eliminate through various routes like renal, hepatic, drugs

The formula of total clearance is

$$Cl_{Total} = Cl_{hep} + Cl_{Renal} + Cl_{pul} + Cl_{oth}$$

$$Cl_{total} = K_e Vol$$

K = Constant

Vol = volum of distribution

End