Routes of drug administration (RoA) :-

Definition

Route of drug administration is defined as the mean by which drugs can be given into the body

Factors to be considered when choosing certain route:

1.Site of drug action

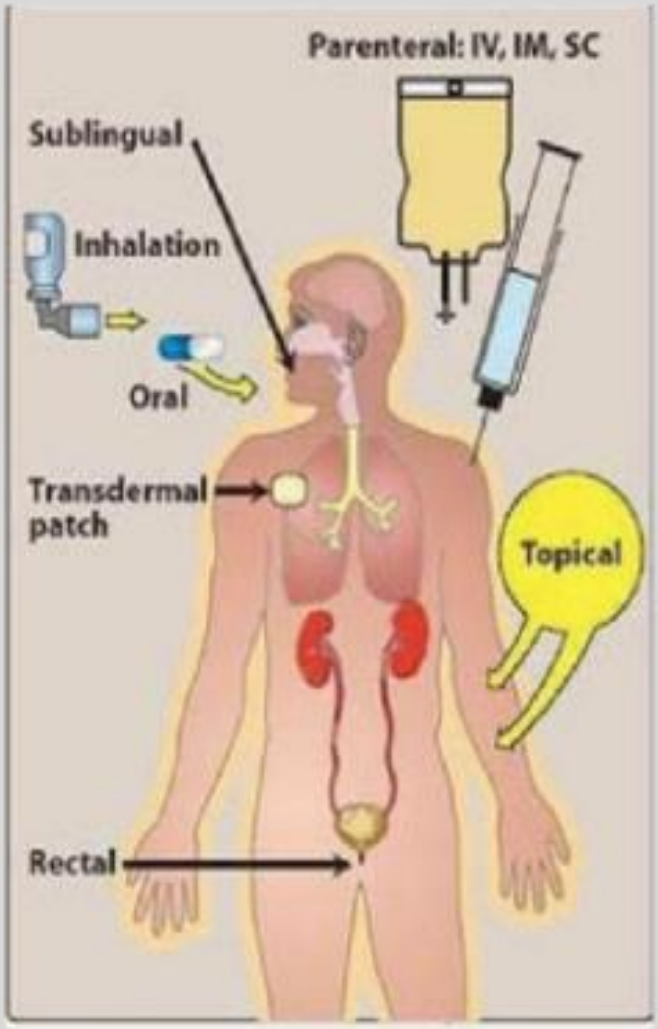
2.Drug nature

3.Onset of action

4.Duration of action

5.Patient status

6.Desires Of the patient



Classified as:-

- Enteral
  - Oral
  - Sublingual
  - Rectal
- Parenteral
  - Inhalation
  - Injections

Enteral(oral route)

most commonly used for drug administration

Advantage:

1- Most convenient to the patient.

2- Acceptable.

3- Painless.

4- Safe

Disadvantage:

1- Drug action is slow, thus not suitable for emergency

2- Irritant drugs cannot be administered

3- May not be useful in the presence of vomiting.

4- Cannot be used for unconscious patient

5- Digestive juices destroy some drugs (Penicillin G)

Sublingual:-

The highly lipid soluble and non-irritating drugs (e.g.: nitroglycerine) in the form of tablets or pellets is placed under the tongue (sublingual).

Advantage:

1- Rapid onset of action.

2- Easy to be used

3- The effect can be terminated by spitting out the tablet

Disadvantage:

1- Irritation of mucous membrane.

2- Short duration of action.

3- Inconvenient for frequent use.

Rectal:

Advantage:

1- Used with drugs that are irritating to the stomach.

2- Suitable in case of vomiting or unconsciousness.

3- When lacking cooperation (pediatrics)

Disadvantage:

1- May cause rectal inflammation.

2- Absorption is incomplete.

Parenteral (Inhalation):-

provide rapid delivery of drug across the large surface area of respiratory tract

Injections:-

1)Intravenous (IV) :- Drug introduces directly to systemic circulation.

2) Intramuscular (IM):- The soluble substances, mild irritants & suspensions can be injected by this route in

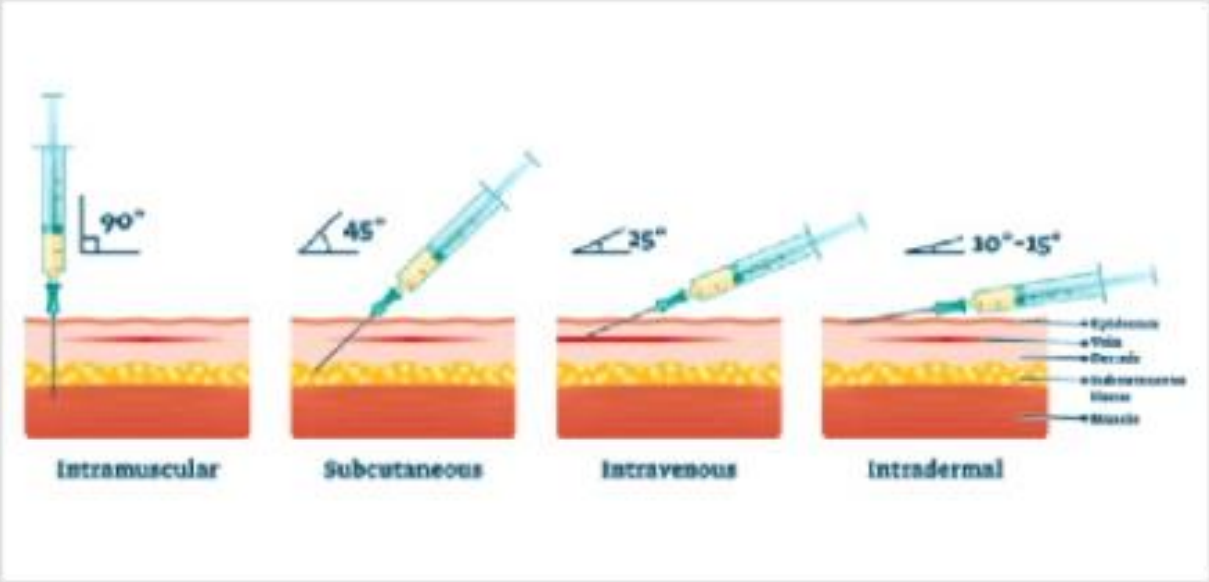
large skeletal muscles (deltoid, triceps, gluteus maximus, rectus femoris).

3) Subcutaneous :- Non-irritant substances can be injected by this route in the outer surface of arm or front

of thigh (e.g. insulin , heparin).

4) Intradermal :- Injection into the dermis, the more vascular layer of skin under the epidermis used for

vaccination e.g. BCG vaccine , or for drug sensitivity e.g penicillin injection.



Topical:-

When local effect of drug is desired (as ointments, creams, lotions) may be used for skin, eye, intranasal, minimize systemicabsorption, easy for patient, e.g. hydrocortisone cream