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PHARMACEUTICS – I

UNIT 2

TOPIC :

- **Powders :** Definition, classification, advantages and disadvantages, Simple & compound powders– official preparations, dusting powders, effervescent, efflorescent and hygroscopic powders, eutectic mixtures. Geometric dilutions.

Powder

→ A powder is a homogeneous mixture of more or less finely divided particle or material in dry form. It is a solid dosage form of medicament which are meant for internal and external uses They are present in crystalline and amorphous form.

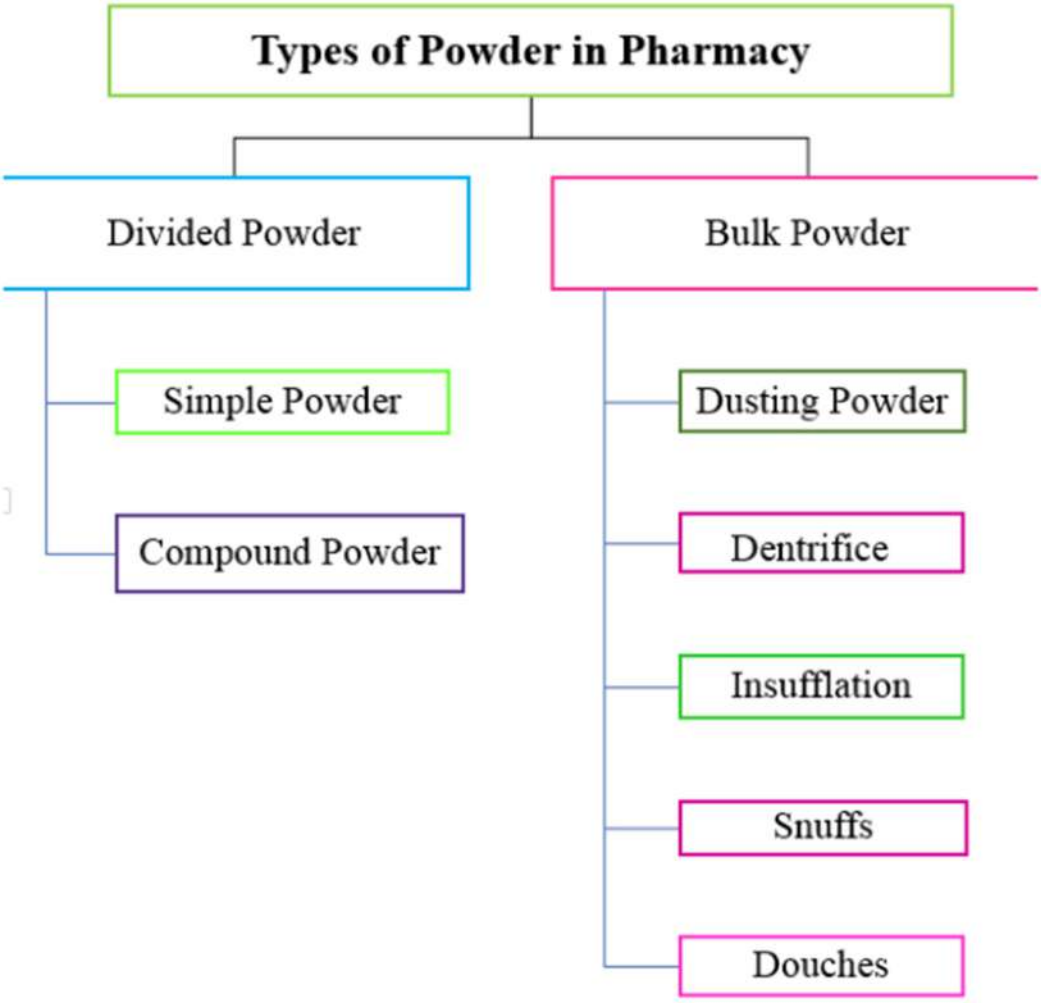
Advantages

- ✓ They are more stable
- ✓ Easy to handle
- ✓ It is used both internally and externally
- ✓ Chances of incompatibility are less
- ✓ They show rapid therapeutic effect.
- ✓ Ease in administration to all categories of patients.
- ✓ They are economical because they do not require special technique or machinery

Disadvantages

- ♦ Drugs having bitter nauseous and unpleasant taste cannot be dispensed in powdered form.
- ♦ It gives slow response than liquid dosage form
- ♦ Drugs which get affected by atmospheric conditions are not suitable for dispensing in powder form.
- ♦ Time Consuming Process.

Classification



Divided Powder

→ These are unit dose powders normally packed properly

Simple Powder :

- ♦ These are those type of powder which contain only one ingredient.
- ♦ Which are packed in a folded paper and dispensed in small plastic bags.
- ♦ The powder should not be less than 100 mg
    - Eg : Aspirin

Compound Powder :

- ♦ Contains two or more than two substances which are mixed together and then divided into individual doses.
    - Eg : Corace SP

Bulk Powder

→ These are those type of powder which are store or dispensed in bulk form I,e. powder are delivered in large quantity

→ They are mainly dispense in wide mouth container. It contain non-potent substance like Antacids, Laxatives, etc

Dusting Powder

- ♦ These are those powder which are meant for external application the skin for local action.
- ♦ They are applied in very fine state to avoid local irritation.
    - Eg : Salicylic acid

Properties of dusting powder

- Dusting powder should be homogeneous in nature.
- It should have non-irritable property.

- It should be Free flowing.
- Powder should have good spreadibility.
- Dusting powder should not be applied to broken skin.

Effervescent Powder

- They are specially prepared solid dosage form of medicament meant for internal use.
- They contain medicament (API) mixed with citric acid, tartaric acid and sodium bicarbonate.
- Saccharine may be added as sweetening agent Before administration the desired quantity is dissolved in water the acid and bicarbonate react together producing effervescence (releasing CO_2)
- This mixture should be taken while effervescing
- Eg : ENO. Aspirin, etc...

Dentifrices

- These are those substance which are meant for external use and applied with the help of tooth brush for cleaning the surface of teeth.
- They are available as tooth powder, tooth paste, liquid, and gels.
- Eg : Saccharine sodium, etc...

Efflorescent Powder

- When some substances are exposed to air they lose water to the atmosphere there by reducing in weight Solids that behave in this way are those with water of crystallization.
- The molecules of water of crystallization are partially or completely lost to the atmosphere, thereby making them to lose their crystalline forms

- Basically, These are those substance which loses water to form a lower hydrate or become anhydrous is termed as efflorescent.
- Present in form of crystals granules.
- Eg : Sodium Carbonate, etc...

Hygroscopic Powder

- These are those powder which absorb moisture from the atmosphere are called hygroscopic Powder.
- Eg : Ammonium Chloride

Eutectic Mixtures

→ A eutectic mixture is a combination of two or more components that melt or solidify at a single, fixed temperature which is lower than the melting point of any individual component in the mixture. This temperature is called the eutectic point.

→ Eg : Salt and Water ($NaCl + H_2O$)

Geometric Dilution

- Geometric dilution (also known as geometric mixing or geometric progression blending) is a method used in pharmacy and chemical mixing to evenly distribute small amounts of a potent substance (like a drug) throughout a larger quantity of diluent or base.
- It ensures uniform distribution of ingredients, especially when the drug quantity is very small compared to the excipient (carrier substance).
- Eg : 15 grams of lactose (diluent)