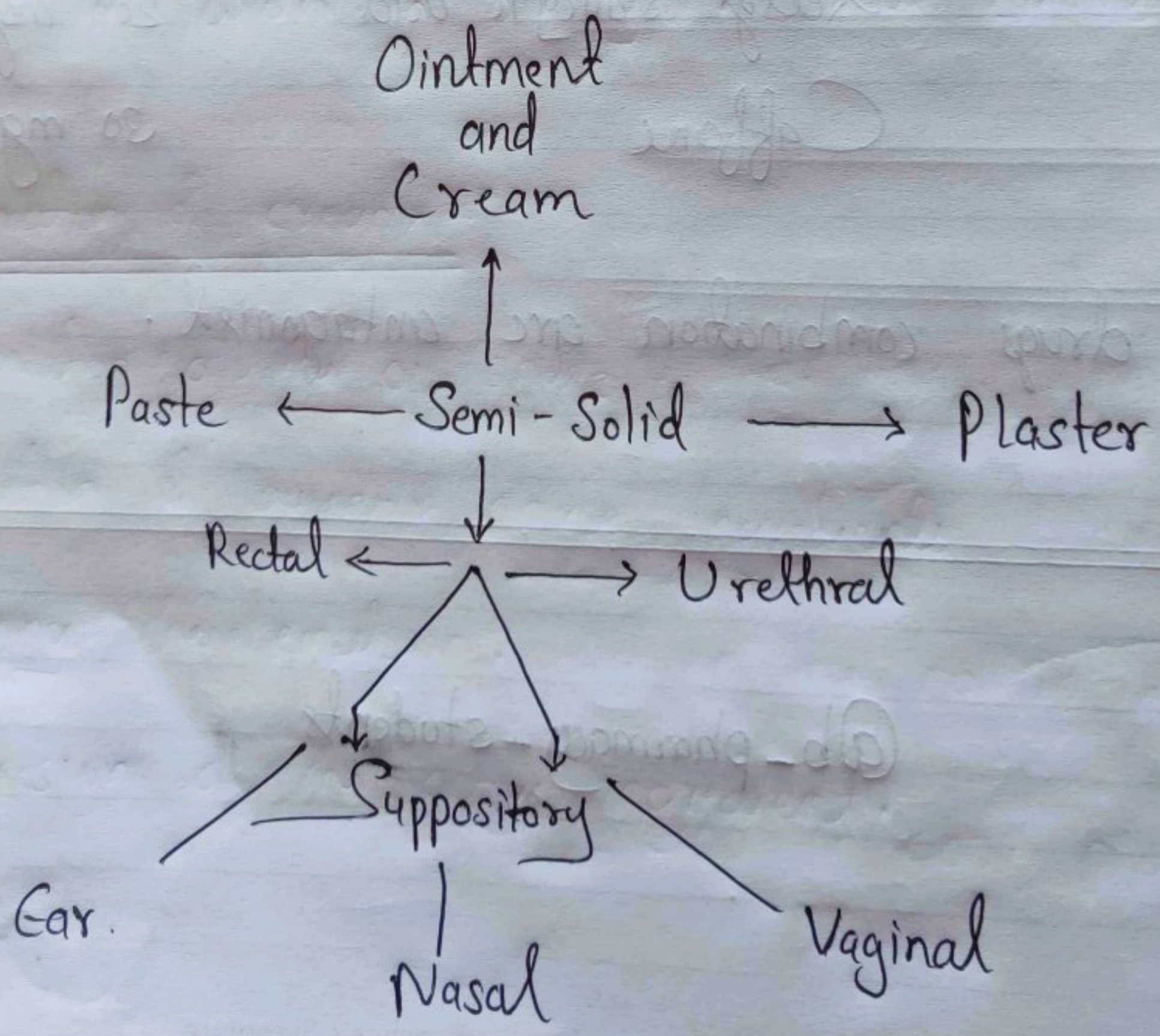


Unit - 5
Semi - Solid
Dosage form

Introduction - They are semi-solid in the nature. The semi-solid dosage forms occupy an intermediate position between liquid and solid dosage forms with respect to consistency.

These do not flow under the influence of gravity but are soft enough to deform and hence to spread under the influence of slight pressure.



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1. Ointments -

The ointments are semisolid preparations that are intended to be applied to the skin or certain mucous membranes for protective, therapeutic purposes where a degree of occlusion is desired.

Ointments are generally formulated to provide preparations that are immiscible, miscible or emulsifiable with skin secretion.

Function -

1. Medicinal function to treat the skin.
2. Protective function e.g. sun cream.
3. Lubricating function.

Preparation - (i). Melt the stearyl alcohol and white petroleum on a hot plate.

- (ii) Heat the mixture to 70°C .
- (iii) Dissolve other ingredients in water and heat the solution to 70°C .
- (iv) Add oleaginous phase slowly, stirring constantly.
- (v) Remove and heat and stir the mixture until it congeals.

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2. Creams -

Creams are soft semi-solid emulsion of either oil in water type (aqueous) or water in the oil (oily) cream containing medicaments for external use.

Types of creams -

① Aqueous creams - In aqueous creams, the emulsions are oil in water type. These creams are relatively non-greasy.

② Oily creams - In oily creams, the emulsions are water in oil type. These creams are greasy.

Preparation of creams -

- (a) Preparation of the oil phase
- (b) Hydration of aqueous phase ingredients.
- (c) Forming the emulsion.
- d) Dispersion of the active ingredient.

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③ Paste - Pastes are semi-solid preparations meant for external uses.

- They contain large amount of finely powdered solids such as zinc oxide, CaCO_3 etc.
- They do not melt at ordinary temperature thus form a protective coating over the areas to which they are applied.

Preparation of Pastes -

Pastes are usually prepared by combination of fusion and trituration methods.

Waxy bases are melted and finely powdered material are incorporated with constant trituration in warm mortar.

In case, the base is not too stiff, finely powdered materials must may be incorporated by simple trituration with part of the base.

The powders should be uniformly dispersed and should not confer any feeling of grittiness to preparation.

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(4). Gels - Gels are usually clear transparent semisolids containing the solubilized active substance.

In gels liquid phase is constrained with in three dimensional polymeric matrix in which a high degree of physical cross-linking has been introduced.

Gels are usually packed in the collapsible tube.

Pharmaceutical application of Gels -

1. For topical steroids
2. Used as protectives
3. Used for contraceptive purposes.
4. Used as antacids.
5. Used for local applications i.e. Throat and in mouth for ulcers.

Storage - ① Gels are packed in the collapsible tube

② Gels should be stored in cool place.

* Excipients Used in Semi-Solid dosage forms -

	Exipient category	Function in formulation	Examples
(1).	Structure forming exipients	Form gel like structure	etc. sorbiton, cetos-tery alcohol.
(2).	Antioxidants	Prevent oxidation	Ascorbic acid, Butyl hydroxyl toluene.
(3).	Preservatives	For preserving the formulation	Benayl alcohol, chlorocresol.
(4).	Gelling agents	Form gels	Carbomer 934, pemulin R.
(5).	Solubilizers	Enhance solu-bility	Lanolin, cholesterol
(6).	Emollients	Modify vehicle	Glycerine, mineral oil.

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