

Unit - 4

35

Topic - A

Suppositories

1. Definition - Suppositories are medicated solid dosage form of various shapes and sizes meant for insertion into the rectum, vagina, urethra or other body cavities other than the mouth where they melt, dissolve or disperse and exert local or sometimes a systemic effect.

Advantages of suppositories -

- a. Easy means of administration for children.
- b. They can be used for administration of drugs to unconscious patients.

Disadvantages of suppositories -

- a. Formulation and manufacturing is difficult.
- b. They cause an unpleasant sensation on insertion into body cavities.

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Types of suppositories -

According to the site of application, suppositories can be subdivided into the following types -

1. Urethral - Suppositories or Bougies -

Urethral bougies are suitably shaped solid preparations meant for insertion into urethra.

2. Ear cones -

These consist of solid unit dosage forms meant for introduction into ears for their local action.

3. Vaginal suppositories -

Vaginal suppositories are solid preparations suitably shaped for administration into vagina.

4. Rectal suppositories -

These consists of solid unit dosage forms containing one or more active ingredient meant to be insertion into the rectum.

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5. Nasal suppositories -

These consist of solid unit dosage forms meant for introduction into nasal cavity.

★ Preparation of Suppositories -

The suppositories are prepared by any of the following methods -

- 1. Rolling method
- 2. Hot process or fusion method
- 3. Cold compression method.

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② Hot process method ⇒ This method is commonly used in the preparation of suppositories for dispensing purposes.

The suppository base is melted, the medication is incorporated in it and filled in the lubricated mould.

On cooling, suppositories are formed which are removed from suppository mould.

Expt. No. _____

Process -

- a. Thoroughly clean and lubricate the mould and invert it on ice to drain and cool.
- b. Heat the dish over water bath, to this add weighed amount of base.
- c. Remove the dish when $\frac{2}{3}$ of the base melts.
- d. Place the weighed quantity of medicament on a warm tile. Over it pour about half the melted base.
- e. Pour the melted mass into cavities of mould kept over ice.
- f. When the mass sets, remove the excess of mass with a sharp knife or blade.
- g. Keep the mould in a cool place or over ice for 10-15 minutes.
- h. Open the mould and remove the suppositories.
- i) The suppositories are ready.

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★ Uses of Suppositories -

- ① Suppositories are used to produce local action at the site of application.
- ② It is particularly useful when the drug cannot be administered orally or the drug is likely to get destroyed in stomach, due to acidity of the gastric juices.
- ③ It also provides neutral pH which is very helpful to maintain the stability of many drugs.
- ④ In order to get the maximum therapeutic effect, the drug used in suppositories must be in fine state of subdivision and uniformly distributed.

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Topic - BPharmaceutical Incompatibilities

Definition - Incompatibilities may be defined as a result of mixing 2 or more substances which are antagonistic to each other, thus leads to production of effects that are not good for the safety, efficacy and appearance of the pharmaceutical preparation.

Types of Incompatibilities -A. Physical incompatibilities -

In this, mixing of 2 or more substances leads to a physical change and formation of an undesirable product.

Physical incompatibilities is usually a result of drug insolubility, immiscibility, precipitation and complexation of the solid material.

This generally causes non-uniform, unsightly and unpalatable mixers from which it often difficult to measure dose accurately.

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Examples of Physical incompatibilities -

Ⓐ Immiscibility -

Oils and water are immiscible with each other. They can be made miscible with water by emulsification.

Example -

Rx	Castor oil	-	15 ml
	Water	-	60 ml

Make an emulsion.

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B. Chemical incompatibilities -

- Chemical incompatibility is usually result of the chemical interactions, taking place among the ingredients of a prescription.
- Such interactions may take place immediately upon compounding when these are termed as immediate incompatibilities and are evident as precipitation or colour change.

It is of two types -

1. Adjusted - In adjusted incompatibilities the chemical interaction can be prevented by addition or substitution of one of reacting ingredients of a prescription with another of equal therapeutic value.

for example - Caffeine citrate can be substituted with caffeine in sodium salicylate and caffeine citrate mixture.

2. Tolerated - In tolerated incompatibilities, the chemical interaction can be minimized by changing order of mixing or mixing the solution in dilute forms but no alteration is made in formulation.

C. Therapeutic incompatibility - Therapeutic incompatibility usually results when the effect of one or more drugs administered to a patient is different from that intended with respect to the nature and intensity.

Therapeutic incompatibility is generally result of incorrect dose or dosage form, use of contraindicated drugs or interaction between two or more administered drugs.

Example - ① In-correct dose -

Phenobarbital 0.2 g

Make capsules.

In this case, dose prescribed for phenobarbital is higher than the therapeutic dose.

② In-correct dosage form -

Since many medicaments can be administered in different dosage forms, there are chances of dispensing in-correct dosage form of a particular drug.

③ Use of contraindicated drugs -

Some persons may be allergic to certain drugs and such drugs may prove harmful if administered to those persons.

Example -

Rx	Sulphadiazine	-	250 mg
	Sulphamerazine	-	250 mg
	Ammonium chloride	-	500

Expt. No. _____

Ammonium chloride is urinary acidifier. It would cause deposition of sulphonamide in crystal form in the kidney.

(4) Drug interaction -

Example -

Rx

Acetophenetidin

150 mg

Acetyl salicylic acid

200 mg

Caffeine

30 mg.

These drugs combination are antagonist.

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