

SUPPOSITORIES

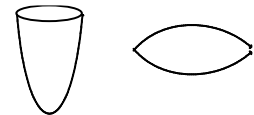
DEFINITION

Definition:

- Suppositories are specially shaped solid dosage form of medicament for insertion into body cavities other than mouth.
- They may be inserted into rectum, vagina or the urethra.
- These products are so formulated that after insertion, they will either melt or dissolve in the cavity fluids to release the medicament.

TYPES OF SUPPOSITORIES

1. Rectal suppositories: These are meant for introduction into the rectum for local and systemic effect.



2. Pessaries: These are meant for introduction into vagina for local action. These are larger than rectal suppositories (3 – 6 gm).



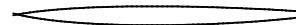
Pear

Cone

Rod

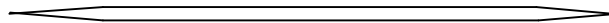
3. Urethral bougies: These are meant for introduction into urethra.

Weight: 2 – 4 gm Length: 2 – 5 inches.



4. Nasal bougies: These are meant for introduction into nasal cavities.

Weight: 1gm Length: 9 – 10 cm



Advantages of rectal suppositories:

- Mechanical action:* The rectal suppositories are extensively used as a mechanical aid to bowel evacuation which produce its action by either irritating the mucous membrane of the rectum (e.g. glycerol and bisacodyl) or by lubricating action or by mechanical lubrication.
- Local action:* The rectal suppositories may be used for soothing, antiseptic, local anaesthetic action or for astringent effect. Therefore, they may contain
 - soothing* e.g. zinc oxide
 - local anaesthetic-* e.g. cinchocaine, benzocaine
 - astringents* e.g. bismuth subgallate, hamamelis extract and tannic acid
 - antiinflammatory* e.g. hydrocortisone and its acetate.
- To provide systemic action:* Suppositories are convenient mode of administration of drugs which irritate the gastrointestinal tract, cause vomiting, are destroyed by the hepatic circulation, or are destroyed in the stomach by pH changes, enzymes etc.

Partial bypass: The lower portion of the rectum affords a large absorption surface area from which the soluble substances can absorb and reach the systemic circulation.

e.g. *aminophylline* used in asthmatic and chronic bronchitis.
morphine a powerful analgesic
ergotamine tartarate used to treat migraine
indomethacin and phenyl butazone analgesic and anti-inflammatory actions.

Systemic treatment by the rectal route is of particular value for

- treating patients who are unconscious, mentally disturbed or unable to tolerate oral medication because of vomiting or pathological conditions of the alimentary tract.
- administering drugs, such as aminophylline, that cause gastric irritation, and
- treating infants.

PROPERTIES OF IDEAL SUPPOSITORY BASE

1. It should melt at rectal temperature (36°) or dissolve or disperse in body fluid. For eutectic mixtures and in tropical climate the melting range of the base should be higher.
2. Release medicaments easily.
3. Shape should remain intact while handling.
4. Non-toxic and non-irritant to sensitive and inflamed mucous membrane.
5. It should be stable on storage i.e. it does not change color, odor, or drug release pattern.
6. Compatible with broad variety of drug and adjuvants.
7. It should shrink so that it comes out easily from the mould without the use of any lubricants.

For fatty bases the following additional specifications are required:

8. "Acid value" is below 0.2

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9. "Saponification value" ranges from 200 to 245
10. "Iodine value" is less than 7
11. The interval point and solidification point is small.