KeyPoints

Advantages and disadvantages of suspensions as dosage forms

Advantages

- Insoluble drugs may be more palatable.
- Insoluble drugs may be more stable.
- Suspended insoluble powders are easy to swallow.
- The suspension format enables easy administration of bulk insoluble powders.
- Absorption will be quicker than solid dosage forms.
- Lotions will leave a cooling layer of medicament on the skin.
- It is theoretically possible to formulate sustained-release preparations.

Disadvantages

- Preparation requires shaking before use.
- Accuracy of dose is likely to be less than with equivalent solution.
- Storage conditions can affect disperse system.
- Suspensions are bulky, difficult to transport and prone to container breakages.

Indiffusible suspensions

These are suspensions containing heavy powders which are insoluble in the vehicle and which on shaking do not disperse evenly throughout the vehicle long enough to allow an accurate dose to be poured.

In the preparation of indiffusible suspensions, the main difference when compared to diffusible suspensions is that the vehicle must be thickened to slow down the rate at which the powder settles. This is achieved by the addition of a suspending agent.

Choice of suspending agent

The amount of suspending agent used in any given formulation depends on the volume of vehicle being thickened. It does not vary with the amount of powder in the preparation. A suspending agent is intended to increase the viscosity of the vehicle and therefore slow down sedimentation rates. This outcome could also be achieved by decreasing the particle size of the powder in suspension.

The most common suspending agents used in extemporaneous dispensing are Tragacanth BP (internal or external suspensions), Compound Tragacanth Powder BP (containing: 15% Tragacanth BP, 20% Acacia BP, 20% Starch BP and 45% Sucrose BP) (internal suspensions) and Bentonite BP (external suspensions). Details on the appropriate quantities to use can be found below.

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- 0.2 g Tragacanth BP powder per 100 ml suspension
- 2 g Compound Tragacanth Powder BP per 100 ml suspension
- 2–3% Bentonite BP

General method

General method for the preparation of a suspension containing a diffusible solid

1. Check the solubility in the vehicle of all solids in the mixture.
2. Calculate the quantities of vehicle required to dissolve any soluble solids.