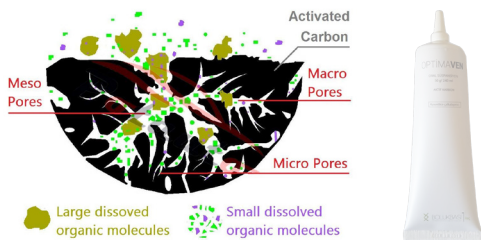


OPTIMAVEN

50g / 240mL Oral Suspension

Activated Charcoal with Sorbitol / Antidote



Activated charcoal is an antidote that is routinely used in poisoning and provides a large surface area for the adsorption of toxic substances. It is composed of small carbon granules in porous structure containing many binding sites.

EFFICIENCY CHANGING FACTORS

- Entry time of the toxic substance
- Coal / toxic substance ratio
- Toxic substance doz
- Stomach contents (pH, composition etc.)

DOSE RANGE

Adult : 50-100g
Child : 25-50g
Infant : 1g/kg

Activated charcoal is pharmacologically inert and is not absorbed systemically. It is well known that activated carbon adsorbs a wide range of chemicals, such as barbiturates, salicylates, phenothiazines, tricyclic antidepressants, sulfonamides, and specific nonionized organic materials.^{[1],[2]}

Activated charcoal adsorbs toxic substances within the gastrointestinal tract, forming an activated charcoal-toxin complex and thus preventing absorption of the toxin. Activated charcoal is most effective when administered early in treatment. The use of multiple doses of activated charcoal has been reported to increase the elimination of certain drugs by inhibiting enterohepatic and enteroenteric circulation (such as, Carbamazepine, Dapsone, Digoxin, Digitoxin, Nadolol, Fenobarbital, Phenylbutazone, Theophylline, Cyclosporin, Tricyclic antidepressant, Phenytoin, Pyroxicam, Aspirin, Dextropropoxyfene).^[1]

Sorbitol in OPTIMAVEN, the place of poisoning treatment

The adsorption of toxin to charcoal is reversible process, and with prolonged gastrointestinal transit time the process may shift toward desorption. Administration of the activated charcoal with sorbitol will reduce this transit time so that the activated charcoal-toxin complex is removed from the body faster. After an orally administered dose, sorbitol is slowly absorbed and metabolized to fructose; that which remains in the gut acts osmotically to draw free water into the lumen and cause diarrhea.^[2] This constipation, which is

observed when active carbon is given alone, is prevented by sorbitol.

Due to the black-fine gritty appearance and taste of active charcoal, it is difficult to hard for patient to intake. Formulations containing the largest amount of liquid flavour showed the lowest adsorption power. Sorbitol was not adsorbed onto activated charcoal so strongly as liquid flavour. It has been reported that sorbitol is as strong as liquid sweeteners, masks by condensing the gritty appearance and does not adsorb on the surface of the activated charcoal. Sorbitol has also been shown to enhance the antidotal activity of charcoal when the two are combined.^{[2],[3]}

Pharmacodynamic effects

It is complexed with the toxic substance present in the gastrointestinal tract and is excreted via the feces.

Pharmacokinetic drug interactions

Since activated charcoal adsorbs a wide range of medicinal products (emetic drugs, specific antidotes or other treatments), it can reduce the effects of other co-administered drugs orally.

Activated charcoal adsorbs ipeca syrup. Therefore, the effect of ipeca is not observed in the patient who is given activated charcoal.

N-acetyl cysteine, which is used as an antidote in paracetamol poisonings, also adsorbs with activated charcoal. Activated charcoal is required to adsorption of paracetamol. For this reason, one dose of activated charcoal and one dose of oral N-acetylcysteine are given respectively. If iv N-acetyl cysteine preparation is present, the problem is eliminated.^[4]

REFERENCES

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