

# **CARBOSORB XS**

**Activated Charcoal 50g/250mL and Sorbitol 99.8g/250mL**

## **Qualitative and Quantitative Composition**

Carbosorb XS is a ready to use aqueous suspension containing activated charcoal 0.2g/mL, and sorbitol 0.4g/mL. Excipients include propylene glycol, glycerol, Water for Injections and citric acid.

## **Clinical Particulars**

### ***Therapeutic Indications***

For the treatment of poisoning and medicine overdose by oral ingestion.

### ***Dosage and Administration***

To be fully effective, Carbosorb XS should be administered as soon as possible after oral ingestion of the poison as activated charcoal can only adsorb that portion of the medicine not absorbed from the gastrointestinal tract. Administration of Carbosorb XS is more likely to produce benefit if administered within one hour of poison ingestion.

Carbosorb XS may be administered after the stomach contents have been emptied by emesis or gastric lavage.

Carbosorb XS may be administered orally or by nasal or orogastric tube (refer to dilution requirements below). Prior to administration, the container should be shaken vigorously for a minimum of 30 seconds.

Recommendations as to absolute dosage regimens are difficult to make due to individual patient variations in type of poisoning and patient weight and age.

### **Dilution prior to use with nasogastric and orogastric tubes:**

Due to the viscosity of Carbosorb XS, dilution with water prior to nasal or orogastric tube administration is required. The dilution ratio is dependent on a number of variables including the gauge and length of the tube to be used, the size of the syringe used, patient cooperation and individual operator technique. As a guide, a minimum of 0.25 parts water to 1 part Carbosorb XS is recommended for administration via tubes of between 10 and 14 French Gauge.

### **Adults and children 12 years and over:**

A single dose based on 1g activated charcoal (equivalent to 5mL Carbosorb XS suspension) per kg bodyweight (to a maximum dose of 50g) is recommended. Carbosorb XS is formulated to be a single dose unit for an average adult.

### **Repeat doses:**

Certain patients may require repeat doses of activated charcoal because of the pharmacokinetic properties of the ingested medicine or poison. Patients poisoned with sustained or slow release formulations, medicines that undergo enterohepatic recirculation and medicines subject to gastrointestinal dialysis fall into this category. Based on experimental and clinical studies, repeat dose activated charcoal should be considered in patients who have ingested a life threatening amount of carbamazepine, dapsone, phenobarbitone, quinine or theophylline. More than a single dose of Carbosorb XS is contraindicated during repeat dose activated charcoal

therapy. Repeat doses of activated charcoal should be accompanied with monitoring of fluid and electrolyte balance.

**Children (1 to 11 years):**

A single dose based on 1g activated charcoal (equivalent to 5mL Carbosorb XS suspension) per kg bodyweight (to a maximum of 50g). The presence of sorbitol may produce diarrhoea, disturbing fluid and electrolyte balance. Repeat doses of activated charcoal are not recommended in children and should be administered only when necessary, accompanied by monitoring of fluid and essential electrolytes.

Carbosorb XS is contraindicated in infants less than 1 year of age.

**Contraindications**

Carbosorb XS is contraindicated in poisoning with strong acids and alkalis and for those poisons for which its adsorptive capacity is too low (ferrous sulphate and other iron salts, cyanides, tolbutamide, and other sulphonylureas, malathion, dicophane, lithium, ethanol, methanol, ethylene glycol and hydrocarbons).

Carbosorb XS is contraindicated in patients who have an unprotected airway or a gastrointestinal tract that is not anatomically intact. It is also contraindicated in patients who have significant fluid or electrolyte abnormalities.

Carbosorb XS is contraindicated in infants less than 1 year of age due to the possibility of excessive catharsis.

Repeat doses of Carbosorb XS are contraindicated.

**Precautions**

Carbosorb XS should not be administered concomitantly with systemically active emetics such as ipecacuanha, since it adsorbs the active components making them unavailable systemically. Emetics may be given to induce vomiting prior to administration of Carbosorb XS. Induced emesis should not be used if the patient is drowsy, unconscious, fitting or if the patient is likely to become drowsy within 30 minutes of taking the emetic.

Aspiration of activated charcoal and gastric contents is a potentially serious complication. Patients who have an absent or impaired gag reflex, are comatose or drowsy, or have ingested large amounts of CNS depressant medicines or medicines that may cause seizures require airway protection, for example in the form of a cuffed endotracheal tube, to protect against aspiration. Vomiting of activated charcoal may contribute to the occurrence of aspiration. Care should be taken in patients who have been administered systemically active emetics and when patients are extubated. Consideration should be given to withholding Carbosorb XS for an adequate time interval prior to extubation.

In the event of an antidote to a specific poison being available this should be the first choice for treatment. Specific antidotes should not be used in conjunction with activated charcoal as they themselves may be adsorbed and inactivated by activated charcoal. Since activated charcoal adsorbs many medicines, any concurrent medication should be given parenterally.

Carbosorb XS should be used with extreme caution in patients with ileus, decreased or absent bowel sounds, or who have ingested a large amount of medicines that may impair peristalsis. The concomitant use of supportive agents that decrease gut

motility (e.g. atropine, morphine, verapamil) should be avoided if possible due to the increased risk of gastrointestinal obstruction with repeat doses of activated charcoal. Patients who are at risk of haemorrhage or gastrointestinal perforation due to recent surgery or pathology could be further compromised by administration of Carbosorb XS.

Activated charcoal preparations are known to adsorb minerals, vitamins, enzymes and amino acids from the gastrointestinal tract.

The cathartic effect of sorbitol may produce diarrhoea that may result in electrolyte disturbance or dehydration. The clinical condition of children and the elderly should therefore be monitored closely during treatment with Carbosorb XS.

Only a single dose of Carbosorb XS should be given during repeat dose activated charcoal therapy in adults, with consideration of the patient's condition and monitoring of fluid and electrolyte status.

#### ***Use in children:***

Carbosorb XS is contraindicated in infants less than 1 year of age due to the possibility of excessive catharsis. Although a single dose may be used in children from 1 to 11 years of age, careful monitoring of fluid and electrolyte balance is required.

#### ***Use in the elderly:***

Elderly patients may be susceptible to fluid and electrolyte disturbances resulting from excessive catharsis to sorbitol. Only a single dose of Carbosorb XS should be given during repeat dose activated charcoal therapy, depending on the patient's condition and with careful monitoring of fluid and electrolyte balance.

#### ***Pregnancy and Lactation***

There is little data on the use of Carbosorb XS during pregnancy. Activated charcoal is not absorbed from the gastrointestinal tract and is not expected to pose a risk to the foetus during pregnancy. However, the cathartic effect of sorbitol may cause diarrhoea resulting in electrolyte disturbance or dehydration.

Carbosorb XS should be used during pregnancy only when necessary. The potential risk to the foetus of both the poisoning and the treatment, need to be balanced against the risk of failing to detoxify the mother.

#### ***Use in lactation:***

There is little data on the use of Carbosorb XS during lactation. Activated charcoal and sorbitol are not absorbed from the gastrointestinal tract so there is no excretion into the breast milk. The cathartic effect of sorbitol may cause fluid and electrolyte disturbances or dehydration in the breastfeeding mother.

#### ***Effects on Ability to Drive and Use Machinery***

Not applicable.

#### **Adverse Effects**

Few serious adverse reactions or complications from the use of single doses of Carbosorb XS have been reported.

Faecal discolouration frequently occurs. Black stools may be utilised as a diagnostic sign of gastrointestinal transit.

Vomiting may occur. This could prove hazardous to a patient who has ingested a caustic or volatile substance (see Contraindications).

Cases of aspiration pneumonia have been reported with the use of activated charcoal slurry for poisoning. Fatalities have been reported due to complications of aspiration. There has been one report of bronchiolitis obliterans and a few reports of progressive respiratory failure resulting in death, due to aspiration of activated charcoal. Care should be taken to ensure adequate airway protection (see Contraindications and Precautions).

There have been several documented case reports of serious gastrointestinal adverse effects with the use of repeat dose activated charcoal. These include intestinal obstructions and charcoal bezoar formation. Fatalities have occurred. Care should be taken in patients with ileus or diminished or absent bowel sounds (see Contraindications and Precautions).

The presence of sorbitol in Carbosorb XS may produce diarrhoea, resulting in disturbance of fluid and electrolyte balance. There have been case reports of dehydration and electrolyte imbalance in adults. There have also been a few case reports of serious dehydration and electrolyte imbalance in infants and young children, resulting in permanent disability and fatality. These cases were attributed to excessive repeat doses of sorbitol cathartic (see Contraindications and Precautions for recommendations on use in children).

## **Interactions**

Carbosorb XS may adsorb other orally administered medicines and antidotes. Any concurrent medication required should be given parenterally.

## **Overdose**

Not applicable.

## **Pharmacological Properties**

Activated charcoal is an adsorbent used to remove medicines from the gastrointestinal tract as a treatment for poisoning. Its mechanism of action is by physical adsorption of medicines and toxic agents onto its surface. It is effective in the adsorption of many medicines including aspirin, barbiturates, tricyclic antidepressants, digoxin, amphetamines, morphine, cocaine, digitalis and the phenothiazines. The adsorptive capacity of activated charcoal is too low for treatment of poisoning with ferrous sulphate and other iron salts, cyanides, tolbutamide and other sulphonylureas, malathion, dicophane, lithium, ethanol, methanol, ethylene glycol and hydrocarbons.

Since sorbitol has a rapid cathartic action the combination of activated charcoal and sorbitol counteracts the constipation produced by charcoal alone, thereby hastening the elimination of the toxic medicine. The decreased transit time does not appear to diminish the activity of the charcoal.

## **Pharmacokinetic Properties**

Not applicable.

## **Pharmaceutical Particulars**

### ***List of Excipients***

Carbosorb XS contains the following excipients per 250ml:

Propylene glycol 48.7g

Glycerol 48.7g

Citric acid, anhydrous 0.43g

Water for injections 75.3g

Carbosorb XS is presented in bottles manufactured from low-density polyethylene.

### ***Shelf Life***

The expiry date (month/year) is stated on the package after EXP. Carbosorb XS is intended for single use only. Use only once and discard unused solution.

### **Storage**

Store below 25°C. Do not refrigerate.

### **Medicine Classification**

General Sale Medicine

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### **Date of Preparation**

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