Suxamethonium Chloride Injection BP 50mg/ml

For IV Use

Composition:
Each mL contains:
Suxamethonium Chloride BP ... 50 mg
Water for Injections BP ..... q.s.

Description
The chemical name for suxamethonium chloride is 2,2'-succinyldioxybis(ethyltrimethylammonium) dichloride dihydrate. It is a white or almost white crystalline powder. Suxamethonium chloride injection is a sterile solution of suxamethonium chloride suitable for intravenous injection. Each mL of solution contains 50 mg of suxamethonium chloride in Water for Injections BP. The pH of the solution is 3.0–5.0. The suxamethonium chloride injection presentation is intended for single use only. Any solution remaining in an opened container must be discarded.

Pharmacology
Suxamethonium is an ultra-short-acting neuromuscular blocking agent. Suxamethonium combines with cholinergic receptors at the motor endplate to produce depolarization. Neuromuscular transmission is inhibited as long as an adequate concentration of suxamethonium remains at the receptor site. Suxamethonium has no direct action on smooth muscle structures, including the uterus. Suxamethonium may cause a slow heart rate via vagal stimulation. When suxamethonium is administered over a prolonged period, the characteristics of the neuromuscular blockade may change from the characteristic depolarizing type to one resembling a non-depolarizing blockade.

Pharmacokinetics: Absorption
Suxamethonium has a rapid onset and a short duration of action. Following intravenous (IV) administration of a single therapeutic dose in healthy adults, complete muscle relaxation occurs within 0.5 to 1 minute, persists for approximately 2 to 3 minutes, and gradually dissipates within 10 minutes. Following intramuscular (IM) administration, onset of action occurs in approximately 2 to 3 minutes, with a duration ranging from 10 to 30 minutes. The duration of action is prolonged in patients with low plasma pseudocholinesterase concentrations. Distribution: Suxamethonium crosses the placenta, generally in small amounts. Elimination: Plasma pseudocholinesterases hydrolyze suxamethonium into succinylmonocholine (relatively inactive) and choline. Approximately 10% of the drug is excreted unchanged in the urine. Patients with renal insufficiency may occasionally experience prolonged apnea due to the accumulation of succinylmonocholine.

Indications
For the induction of skeletal muscle relaxation during anesthesia. Suitable for procedures requiring only brief relaxation, such as endotracheal intubation, endoscopic examinations, orthopedic manipulations, short surgical procedures, and electroconvulsive therapy.

Contraindications
Patients with a personal or family history of malignant hyperthermia, genetically determined pseudocholinesterase disorders, myopathies associated with elevated creatine phosphokinase (CPK) levels, Duchenne muscular dystrophy, known hypersensitivity to suxamethonium, severe hyperkalemia, acute narrow-angle glaucoma, and the presence of penetrating eye injuries (suxamethonium can cause a mild, transient increase in intraocular pressure). It is also contraindicated in patients following the acute phase of injury from major burns or multiple trauma, in cases of renal insufficiency with elevated plasma potassium concentrations, or in patients with extensive muscle degeneration—such as recent paraplegia and severe, prolonged sepsis—as these patients may develop severe hyperkalemia upon administration of suxamethonium, resulting in cardiac arrhythmia or arrest.

Precautions
Suxamethonium should only be administered under the strict supervision of an anesthesiologist experienced in its actions, characteristics, and risks, as well as in the management of artificial respiration. It should be used only when facilities for endotracheal intubation and adequate patient ventilation—including positive-pressure oxygen administration—are available. Be prepared to assist or control respiration. Suxamethonium has no effect on consciousness, pain threshold, or cerebral function; therefore, it must be used with adequate anesthesia.

Interactions with other drugs
Co-administration of inhalational anesthetics (cyclopropane, diethyl ether, halothane, and nitrous oxide) may increase the incidence of arrhythmias (especially bradycardia), apnea, and the occurrence of malignant hyperthermia in susceptible individuals. Inhalational anesthetics have little effect on the standard depolarizing neuromuscular block caused by suxamethonium, but they may enhance the Phase II (non-depolarizing) block that can result from repeated doses of the drug. Severe bradycardia and asystole have occurred when suxamethonium is used in anesthetic regimens involving propofol and opioids such as fentanyl. Drugs that may increase or prolong the effects of suxamethonium include lidocaine, procaine, oxytocin, oral contraceptives, certain non-penicillin antibiotics (streptomycin, neomycin, kanamycin, capreomycin, tobramycin, framycetin, amikacin, gentamicin, colistin, and polymyxin), tacrine, beta-adrenergic blockers, trimetaphan, phenelzine, aprotinin, quinidine, promazine, lithium carbonate, phenytoin, carbamazepine, magnesium salts, quinine, chloroquine, cimetidine, terbutaline sulfate, corticosteroids, and high doses of cytostatic agents such as cyclophosphamide, thiotepa, and azathioprine. Diazepam reduces the duration of neuromuscular blockade produced by suxamethonium.

Dosage and administration
Dosage is individualized, and administration must be determined following a careful patient assessment. The suxamethonium dose depends on body weight, the degree of muscle relaxation required, and the individual patient's response. Suxamethonium causes paralysis of the respiratory muscles; therefore, respiration must be controlled following administration. It must not be administered to a conscious patient. Suxamethonium should not be mixed with any other neuromuscular blocking agent, general anesthetic (such as short-acting barbiturates), or any other therapeutic agent in the same syringe. Suxamethonium chloride injection does not contain antimicrobial agents. It is for single use only, and any remaining solution must be discarded. An initial test dose of 0.1 mg/kg may be administered intravenously to determine the patient's response.
Adults: For short procedures, such as endotracheal intubation, the usual adult dose is 0.6 mg/kg (range: 0.3–1.1 mg/kg), administered intravenously over 10 to 30 seconds. Children: Newborns and premature infants may be relatively resistant to suxamethonium. The usual pediatric IV dose is 1 to 2 mg/kg. If necessary, additional doses may be administered based on the patient's response. A suggested IM dose for adults and children is up to 2.5 mg/kg, but the total dose should not exceed 150 mg.
Diluted suxamethonium solutions must be used within 24 hours of preparation. Discard unused solutions.

Overdose
The most serious effects of overdose are apnea and prolonged muscle paralysis. It is essential to maintain the airway and adequate ventilation until spontaneous breathing is fully restored. The use of neostigmine to reverse a non-depolarizing block is a clinical decision that depends on the individual patient, as well as the clinician's experience and judgment. If neostigmine is used, its administration must be accompanied by an appropriate dose of atropine.

Storage
Store between 2°C and 8°C. Do not freeze.

Keep medicines out of the reach of children.

Presentation: A pack of 10 x 2 mL ampoules.

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