COMPLETE PRESCRIBING INFORMATION

MICRO-K EXTENCAPS®

(Potassium Chloride Extencaps-Release Capsules)

600 mg (8 mEq K^+)

Potassium Supplement

PALADIN LABS INC.

MONTREAL, CANADA

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TABLE OF CONTENTS

NAME OF DRUG

MICRO-K EXTENCAPS

Potassium Chloride 600 mg (8 mEq K^+) in an extended-release capsule.

THERAPEUTIC CLASSIFICATION

Potassium Supplement

ACTION

Potassium ions participate in a number of physiological processes including the maintenance of intracellular tonicity; the transmission of nerve impulses; the contraction of cardiac, skeletal and smooth muscle; and the maintenance of normal renal function. Depletion may occur whenever the rate of potassium loss through renal excretion and/or loss from the gastrointestinal tract exceeds the rate of potassium intake.

Micro-K Extencaps are hard gelatin capsules containing small, microencapsulated, crystalline, dispersible particles of potassium chloride. Micro-K Extencaps contain 600 mg (8 mEq K^+) of potassium chloride. Each particle is microencapsulated with a polymeric coating which allows for controlled release of potassium and chloride ions. The dispersibility of the microcapsules and the controlled release of ions are intended to minimize the likelihood of high localized concentrations of potassium chloride and resultant mucosal ulceration within the gastrointestinal tract.

The polymeric coating forming the microcapsules functions as a water-permeable membrane. Fluids pass through the membrane and gradually dissolve the potassium chloride. In this manner, slow and sustained release of potassium chloride from the coated particles into the gastrointestinal tract occurs over a period of 4 to 8 hours.

INDICATIONS

Micro-K is indicated for the prevention of potassium depletion when the dietary intake of potassium is inadequate for this purpose. Micro-K is also indicated for the treatment of potassium depletion in patients with hypokalaemia and metabolic alkalosis, and in the treatment of chronic digitalis intoxication.

The prophylactic administration of potassium may be indicated in patients receiving digitalis and diuretics for the treatment of congestive heart failure and hepatic cirrhosis with ascites. Micro-K may be indicated in selected patients with hypertension on long-term diuretic therapy, hyperaldosteronism states with normal renal function, the nephrotic syndrome and certain diarrheal states.

CONTRAINDICATIONS

1. Potassium supplements are contraindicated in patients with hyperkalaemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalaemia may complicate any of the following conditions: acute and chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g. spironolactone, triamterene), or other drugs causing hyperkalaemia such as captopril and enalapril.

2. Patients with renal impairment with oliguria or azotemia.

3. Patients who may have an increased sensitivity to potassium administration, e.g., in congenital paramyotonia or adynamia episodica hereditaria.

4. All solid dosage forms of potassium supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation. Long-acting potassium chloride preparations have produced

esophageal ulceration in certain cardiac patients with esophageal compression due to an enlarged left atrium. Micro-K Extencaps are therefore contraindicated in such patients as well as in patients with dysphagia.

WARNINGS

In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalaemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalaemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment. Hypokalaemia has the potential to promote quinidine toxicity (see Contraindications).

Hypokalaemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g. spironolactone, triamterene) or other drugs causing hyperkalaemia such as captopril or enalapril, since the simultaneous administration of these

agents can produce severe hyperkalaemia. Hypokalaemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium acetate, potassium bicarbonate or potassium citrate (see Contraindications).

Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel, and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation. Micro-K is formulated from microencapsulated crystalline particles of potassium chloride. The sustained release of potassium chloride from the microcaps is intended to minimize the possibility of a high local concentration of potassium ion near the bowel wall. Micro-K should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention or gastrointestinal bleeding occurs (see Contraindications).

All oral potassium preparations should be prescribed with particular caution in patients with a history of peptic ulcer.

PRECAUTIONS

The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease or acidosis, requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram and the clinical status of the patient.

Potassium supplements should be used with caution in diseases associated with heart block, since increased serum potassium may increase the degree of block.

Since anticholinergic agents have the potential to slow gastrointestinal motility, caution should be exercised when prescribing solid oral potassium preparations to patients concurrently receiving anticholinergic agents (see Contraindications, Warnings).

Pregnancy: Because of gastrointestinal hypomotility associated with pregnancy, solid oral potassium supplements should be given to pregnant women only if clearly needed.

Children: Safety and effectiveness in children have not been established. Keep out of reach of children.

ADVERSE REACTIONS

The most common adverse reactions are nausea, vomiting, diarrhea and abdominal discomfort. These symptoms are due to irritation of the GI tract and can be reduced by increasing fluid intake when possible, by taking the dose with meals or by reducing the dose. One of the most severe adverse effects of potassium supplementation is hyperkalaemia. Skin rash has been reported rarely. Intestinal bleeding, ulceration, perforation and stenosis have been reported in patients treated with solid dosage forms of potassium salts, but there appears to be less likelihood of this occurring with Micro-K.

SYMPTOMS AND TREATMENT OF OVERDOSAGE

Overdosage from therapeutic doses of solid oral potassium salts in persons with normal excretory mechanism rarely occurs; however, if excretory mechanisms are impaired, potentially fatal hyperkalaemia may occur. Acute (accidental or intentional) overdosages of solid oral potassium salts have resulted in severe and/or fatal hyperkalaemia.

Symptoms

Overdosage with potassium is characterized chiefly by cardiovascular, neuromuscular and gastrointestinal disturbances.

Cardiovascular: ECG changes, hypotension and shock, bundle-branch block, ventricular arrhythmias, ventricular fibrillation leading possibly to cardiac arrest.

Neuromuscular: paresthesia, areflexia, convulsions, flaccid paralysis of striated muscle leading possibly to respiratory paralysis.

Gastrointestinal: nausea, vomiting, diarrhea and abdominal cramps.

It is important to recognize that hyperkalaemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes, which include increased amplitude and peaking of the T wave, and flattening or absence of P wave. As hyperkalaemia worsens, prolongation of

the P-R interval, widening of the QRS complex with S-T segment depression and arrhythmias may develop.

Widening of the QRS complex is one of the most ominous signs and indicates the need for aggressive treatment.

Treatment

The plasma concentration and electrocardiogram must be monitored in every case of potassium overdosage, as well as serum electrolytes, BUN, glucose and arterial blood gases.

Electrocardiographic signs of hyperkalaemia (tall peaked T waves, P-R prolongation, disappearance of P waves, QRS widening, heart block) are indications for immediate treatment.

In severe hyperkalaemia (plasma potassium exceeds 8 mEq/L or ECG abnormalities include absence of P wave, presence of widened QRS complex or ventricular arrhythmia):

Administer intravenously 300 to 500 mL/h of 10% dextrose solution containing 10-20 units of insulin per 1,000 mL.

Correct acidosis, if present, with intravenous sodium bicarbonate (44 to 132 mEq per litre of glucose solution).

Administer 10 to 30 mL of 10% calcium gluconate i.v. over 1 to 5 minutes under continuous ECG monitoring.

Administer cation exchange resin by high retention enema.

100 mL of warm aqueous solution of sorbitol containing 30 to 50 g of sodium polystyrene sulfonate should be kept in the sigmoid colon for several hours, if possible. The colon is then irrigated with a non-sodium containing solution to remove the resin. Repeated enemas can be administered, or the resin given repeatedly by mouth, to maintain a physiologic potassium concentration.

Haemodialysis or peritoneal dialysis may be of use, particularly in patients with renal failure.

In moderately severe hyperkalaemia (plasma potassium between 6.5 and 8 mEq/L or ECG peaking of T wave):

Administer intravenously 300 to 500 mL/h of 10% dextrose solution containing 10-20 units insulin per 1,000 mL.

Correct acidosis, if present, with intravenous sodium bicarbonate (44 to 132 mEq per litre of glucose solution).

Correct hyponatremia and hypovolemia, if present.

Once the patient's cardiac state has been stabilized, in the case of a recent acute ingestion of Micro-K, consideration should be given to the evacuation of the stomach.

When overdosage is the result of chronic therapeutic ingestion, Micro-K should be discontinued immediately as well as potassium containing foods and medications and also potassium-sparing diuretics.

DOSAGE AND ADMINISTRATION

The usual dietary intake of potassium by the average adult is 40 to 80 mEq per day. Potassium depletion sufficient to cause hypokalaemia usually requires the loss of 200 or more mEq of potassium from the total body store.

Dosage must be adjusted to the individual needs of each patient, but typically is approximately 20 mEq per day for the prevention of hypokalaemia and 40 to 100 mEq per day for the treatment of potassium depletion.

	For Prevention	**For Treatment**
Micro-K Extencaps (8 mEq K^+)	2 or 3 Extencaps/day (16-24 mEq K^+)	5 to 12 Extencaps/day (40-96 mEq K^+)

If more than 2 Extencaps are prescribed per day, the total daily dosage should be divided into two or more separate doses. These capsules should not be crushed or chewed, but administered whole and taken with water. Those patients having difficulty swallowing the capsules may be advised to sprinkle the contents onto a spoonful of soft food to facilitate ingestion.

AVAILABILITY

Each Micro-K Extencap^{R} contains 600 mg KCl (8 mEq K^{+}) in a hard gelatin capsule, opaque pale orange body and cap, monogrammed respectively with a Paladin shield and "Micro-K" in black ink. Available in bottles of 100 and 500.