DESCRIPTION

Potassium Chloride Extended-Release Capsules, USP, 8 mEq and 10 mEq are oral dosage forms of microencapsulated potassium chloride containing 600 and 750 mg, respectively, of potassium chloride, USP, equivalent to 8 and 10 mEq of potassium.

Dispersibility of potassium chloride (KCl) is accomplished by microencapsulation and a dispersing agent. The resultant flow characteristics of the KCl microcapsules and the controlled release of K+ ions by the microcapsular membrane are intended to avoid the possibility that excessive amounts of KCl can be localized at any point on the mucosa of the gastrointestinal tract.

Each crystal of KCl is microencapsulated by a process with an insoluble polymeric coating which functions as a semi-permeable membrane; it allows for the controlled release of potassium and chloride ions over an eight- to ten-hour period. Fluids pass through the membrane and gradually dissolve the potassium chloride within the micro-capsules. The resulting potassium chloride solution slowly diffuses outward through the membrane. Potassium chloride extended-release capsules are elecdity replensihers. The chemical name of the active ingredient is potassium chloride and the structural formula is KCl. Potassium chloride, occurs as a white, granular powder or as colorless crystals. It is odorless and has a saline taste. Its solutions are neutral to litmus. It is freely soluble in water and insoluble in alcohol.

The inactive ingredients are, ethylcellulose, gelatin, sodium lauryl sulfate, FD&C Blue #1, FD&C Red #40, titanium oxide, triacetin, shellac, iron oxide black, isopropyl alcohol, n-butyl alcohol, propylene glycol, ammonium hydroxide, FD&C Blue #2, FD&C Red #40, FD&C Yellow #1 and D&C Yellow #10.

CLINICAL PHARMACOLOGY

Potassium ion is the principal intracellular cation of most body tissues. Potassium ions participate in a number of essential 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.

The intracellular concentration of potassium is approximately 150 to 160 mEq per liter. The normal adult plasma concentration is 3.5 to 5 mEq per liter. An active ion transport system maintains this gradient across the plasma membrane.

Potassium is a normal dietary constituent and under steady-state conditions the amount of potassium absorbed from the gastrointestinal tract is equal to the amount excreted in the urine. The usual dietary intake of potassium is 50 to 100 mEq per day.

Potassium depletion will occur whenever the rate of potassium loss through renal excretion and/or loss from the gastrointestinal tract exceeds the rate of potassium intake. Such depletion usually develops slowly as a consequence of therapy with diuretics, primary or secondary hyperaldosteronism, diabetes, ketotic diabetics, or inadequate replacement of potassium in patients on prolonged parenteral nutrition.

Depletion can develop rapidly with severe diarrhea, especially if associated with vomiting. Potassium depletion due to these causes is usually accompanied by a concomitant loss of chloride and is manifested by hypokalemia and metabolic alkalosis. Potassium depletion may produce weakness, fatigue, disturbances of cardiac rhythm (primarily ectopic beats), prominent U-waves in the electrocardiogram, and in advanced cases, flaccid paralysis and/or an inability to concentrate urine.

If potassium depletion associated with metabolic alkalosis cannot be managed by correcting the fundamental cause of the deficiency, e.g., where the patient requires long-term diuretic thera-
mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium, while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. 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.

Information For Patients

Physicians should consider reminding the patient of the following: To take each dose with meals and with a full glass of water or other suitable liquid. To take each dose without crushing, chewing, or sucking the capsules. To take this medicine following the frequency and amount prescribed by the physician. This is especially important if the patient is also taking diuretics and/or digitalis preparations. To check with the physician if there is trouble swallowing capsules or if the capsules seem to stick in the throat.

To check with the patient at once if tarry stools or other evidence of gastrointestinal bleeding is noticed.

Laboratory Tests

Regular serum potassium determinations are recommended, especially in patients with renal insufficiency or diabetic nephropathy. When blood is drawn for analysis of plasma potassium it is important to recognize that artificial elevations can occur after improper venipuncture technique or as a result of in vitro hemolysis of the sample.

Drug Interactions

Potassium-sparing diuretics, angiotensin converting enzyme inhibitors (see WARNINGS).

Carcinogenesis, Mutagenesis, Impairment of Fertility

Carcinogenicity, mutagenicity and fertility studies in animals have not been performed. Potassium is a normal dietary constituent.

Pregnancy:

Teratogenic Effects: Category C

Animal reproduction studies have not been conducted with potassium chloride extended-release capsules. It is unlikely that potassium supplementation that does not lead to hyperkalemia would have an adverse effect on the fetus or would affect reproductive capacity.

Nursing Mothers

The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use

Safety and effectiveness in pediatric patients have not been established.

Geriatric Use

Clinical studies of potassium chloride extended-release capsules did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy.

This drug is known to be substantially excreted by the kidney, and the risk of toxic reactions to this drug may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and it may be useful to monitor renal function.

ADVERSE REACTIONS

One of the most severe adverse effects is hyperkalemia (see CONTRAINDICATIONS, WARNINGS, and OVERDOSAGE). Gastrointestinal bleeding and ulceration have been reported in patients treated with potassium chloride extended-release capsules, (see CONTRAINDICATIONS and WARNINGS). In addition to gastrointestinal bleeding and ulceration, perforation and obstruction have been reported in patients treated with solid KCl dosage forms, and may occur with potassium chloride extended-release capsules, USP, 8 mEq and 100 mEq. The most common adverse reactions to the oral potassium salts are nausea, vomiting, flatulence, abdominal discomfort, and diarrhea. These symptoms are due to disruption of the gastrointestinal tract and are best managed by taking the dose with meals, or reducing the amount taken at one time. Skin rash has been reported rarely with potassium preparations.

To report SUSPECTED ADVERSE REACTIONS, contact Par Pharmaceutical, Inc. at 1-800-838-9393 or FDA at 1-800-FDA-1088 or http://www.fda.gov/medwatch.

OVERDOSAGE

The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see CONTRAINDICATIONS AND WARNINGS). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration (6.5 to 8.0 mEq/L) and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of ST segment, and prolongation of the QT interval). Late manifestations include muscle paralysis and cardiovascular collapse from cardiac arrest (9 to 12 mEq/L).

Treatment measures for hyperkalemia include the following: (1) elimination of foods and medications containing potassium and of any agents with potassium-sparing properties; (2) intravenous administration of 300 to 500 mL/hr of 10% dextrose solution containing 10 to 20 units of crystalline insulin per 1,000 mL; (3) correction of acidosis, if present, with intravenous sodium bicarbonate; (4) use of exchange resins, hemodialysis, or peritoneal dialysis. In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity. The extended release feature means that absorption and toxic effects may be delayed for hours. Consider standard measures to remove any unabsorbed drug.

DOSAGE AND ADMINISTRATION

The usual dietary intake of potassium by the average adult is 50 to 100 mEq per day. Potassium depletion sufficient to cause hypokalemia 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. The dose for the prevention of hypokalemia is typically in the range of 20 mEq per day. Doses of 40 to 100 mEq per day or more are used for the treatment of potassium depletion. Dosage should be divided if more than 20 mEq per day is given such that no more than 20 mEq is given in a single dose. Because of the potential for gastric irritation (see WARNINGS), potassium chloride extended-release capsules, should be taken with meals and with a full glass of water or other liquid.

Patients who have difficulty swallowing capsules may sprinkle the contents of the capsule onto a spoonful of soft food. The soft food, such as applesauce or pudding, should be swallowed immediately without chewing and followed with a glass of cool water or juice to ensure complete swallowing of the microcapsules. The food used should not be hot and should be soft enough to be swallowed without chewing. Any microcapsule/food mixture should be used immediately and not stored for future use.

HOW SUPPLIED

Potassium Chloride Extended-Release Capsules, USP, 8 mEq (600 mg) in a hard gelatin capsule with white opaque cap imprinted with “par” and white opaque body imprinted with “C220” in black ink containing white to off white spherical shaped coated pellets. Bottles of 100 (NDC 10370-219-01) Bottles of 500 (NDC 10370-219-05)