

SAN JOAQUIN COUNTY
EMERGENCY MEDICAL SERVICES AGENCY

TITLE: MONITORING AN INFUSION WITH POTASSIUM CHLORIDE EMS Policy No. **5952**

PURPOSE: The purpose of this policy is to provide a mechanism for paramedics to be permitted to monitor infusions of Potassium Chloride (KCL) during interfacility transfers.

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.220

POLICY:

- I. All ALS Ambulance providers approved by the San Joaquin County EMS Agency Medical Director will be permitted to provide the service of monitoring potassium chloride infusions during interfacility transports from approved hospital(s) within their service area.
- II. Only those paramedics who have successfully completed training program(s) approved by the San Joaquin County EMS Agency Medical Director on potassium chloride infusions will be permitted to monitor them during interfacility transports.
- III. Patients that are candidates for paramedic transport will have preexisting KCL infusions in peripheral lines. Prehospital care providers are not allowed to start or add KCL to the I.V. solution.
- IV. Infusions containing KCL
In accordance with the provisions of this policy, a paramedic may transport a patient who has a preexisting I.V. solution containing KCL only when following these parameters:
 - A. Signed transfer orders from the transferring physician must be obtained prior to transport. Infusions containing KCL may be monitored only.
 - B. Patient is placed on cardiac and pulse oximetry monitors and monitored continuously during transport.
 - C. KCL infusion concentration will not exceed 20 mEq/liter administered at a mechanically controlled rate not to exceed 10 mEq/hour.
 - D. If fluid bolus or I.V. medications are needed, the KCL infusion shall be discontinued and a new I.V. solution without KCL and administration device shall be used as replacement. **DO NOT BOLUS FLUIDS CONTAINING KCL.**
 - E. Vital signs will be monitored and documented no less than every 10

Effective: **JANUARY 1, 2007**

Page 1 of 3

Revised:

Supersedes:

Approved: Signature on file
Medical Director

Signature on file
EMS Administrator

minutes during patient transport.

- F. Monitor patient for adverse affects during transport including:
1. Cardiovascular: dysrhythmias, cardiac arrest
 2. Respiratory: depression/arrest
 3. Gastrointestinal: nausea/vomiting, diarrhea, abdominal pain
 4. Neurological: paresthesia of extremities, muscular paralysis, confusion
 5. I.V. infiltration: monitor I.V. site as infiltration may cause necrosis. If patient complains of burning or irritation at the insertion site, the I.V. should be checked for patency and the infusion rate slowed or discontinued.

V. General Information on Potassium Chloride

- A. Potassium is an essential macromineral in human nutrition with a wide range of biochemical and physiological roles. Among other things, it is important in the transmission of nerve impulses, the contraction of cardiac, skeletal and smooth muscle, the production of energy, the synthesis of nucleic acids, the maintenance of intracellular tonicity and the maintenance of normal blood pressure.
- B. Indications for the use of Potassium Chloride
1. The treatment of potassium depletion in patients with hypokalemia when oral replacement is not feasible.
 2. Treatment of digitalis intoxication.
- C. Contraindications:
1. Renal impairment with oliguria or azotemia
 2. Untreated Addison's disease
 3. Hyperadrenalism associated with adrenogenital syndrome
 4. Extensive tissue breakdown as in severe burns
 5. Adynamia episodica hereditaria
 6. Hyperkalemia of any etiology
- D. Precautions:
1. Pregnancy Category C
 2. Chronic renal disease
 3. Adrenal insufficiency
 4. Any other condition which impairs potassium excretion
 5. Potassium should be used with caution in diseases associated with

Effective: **JANUARY 1, 2007**

Page 2 of 3

Revised:

Supersedes:

Approved: Signature on file
Medical Director

Signature on file
EMS Administrator

heart block

- E. Adverse Effects:
1. Fever
 2. Venous Thrombosis, Infection at injection site
 3. Extravasation, Phlebitis, Pain at Injection Site
 4. Hypervolemia
 5. Hyperkalemia
 6. Abdominal Pain
 7. Nausea/Vomiting;
 8. Paresthesias of the extremities
 9. ECG Abnormalities, Heart Block
 10. Mental Confusion
 11. Hypotension
- F. Interactions:
1. Cardiac arrest can occur with high potassium conditions, such as chronic renal failure, burns, acidosis, dehydration, and potassium sparing diuretic usage.
 2. Drug interactions causing elevation of potassium can occur with ACE inhibitors (used to treat high blood pressure) and certain diuretics (aldactone and triamterene).
- G. Standard Dosages for Potassium Chloride Infusions:
1. For serum potassium level > 2.5mEq/L
 - a. Continuous IV Infusion: 10mEq/hour in a concentration up to 40mEq/L. Max dose of 200mEq/day.
 2. For serum potassium level < 2.0 with electrocardiographic changes and/or muscle paralysis, potassium chloride may be administered at a rate up to 40mEq/hour. (This rate is not approved for EMS personnel).
- H. Special Considerations:
1. **MUST BE DILUTED BEFORE ADMINISTRATION.**
 2. Administer at a rate not to exceed 10mEq/hour.
 3. Monitor electrolyte, fluid, and acid-base balances.

Effective: **JANUARY 1, 2007**

Page 3 of 3

Revised:

Supersedes:

Approved: Signature on file
Medical Director

Signature on file
EMS Administrator