

# Cardiac Arrest - Dialysis Patient Protocol

approved October 2004

revised October 2008



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## **Preamble**

Hyperkalemia may be the precipitating cause of cardiac arrest in dialysis patients. Treatments that rapidly reduce serum potassium may bring about a return of spontaneous circulation.

## **Requirements**

1. Fully licensed Technician-Paramedic
2. Certification in VF/pulseless VT protocol by the Medical Director.
3. Certification in intravenous cannulation protocol by the Medical Director.
4. Certification in endotracheal intubation and/or double lumen tube insertion by the Medical Director.
5. Certification in the dialysis patient cardiac arrest protocol by the Medical Director.

## **Indications**

1. Known dialysis patient in cardiac arrest.
2. Patient in cardiac arrest (no history available) with fistula observed.

## **Contraindications**

1. Evidence of severe trauma.
2. Evidence of hypothermia.
3. Patient under 16 years old.

## **Drug Doses**

All drugs in this protocol administered once

1. calcium gluconate (10%)  
10 ml (1 amp) administered IV
2. sodium bicarbonate (1 mEq/ml)  
50 mEq (50 ml or 1 amp) administered IV
3. 50% glucose (D50W)  
25 g (50 ml or 1 amp) administered IV
4. Insulin R  
10 units administered IV

## **Procedure**

1. Perform patient assessment, confirm cardiac arrest.
2. Assess that patient meets criteria for this protocol.
3. Ensure there are no contraindications to use of this protocol.
4. Initiate CPR, ventilate with 100% oxygen, monitor ECG.
5. If initial rhythm VF or pulseless VT, countershock per VF/Pulseless VT protocol.
6. If no change to countershock, or initial rhythm asystole or pulseless electrical activity, intubate/insert double lumen tube, establish IV NS TKO. (May use fistula if unable to establish IV.)
7. Administer calcium gluconate.
8. Administer sodium bicarbonate.
9. Administer 50% glucose.
10. Administer insulin.
11. Continue treatment of rhythm or condition in accordance with treatment protocols.
12. Initiate transport.

13. Repeat assessment for return of spontaneous circulation.

### **Documentation Requirements**

The following information must be documented on the patient care report form:

1. Patient's presenting signs and symptoms, including vital signs, level of consciousness and oxygen saturation.
2. History of dialysis, or fistula being observed on physical examination.
3. Indications for protocol use.
4. Dose, formulation, route, and time for each medication dose administered, and resulting clinical effects.
5. Repeat assessment, including vital signs, level of consciousness and oxygen saturation, as indicated.
6. Changes from baseline, if any, that occur during treatment or transport.
7. Signature and license number of EMS personnel performing any transfer of function skills.

### **Certification Requirements**

1. Attend in-depth classes and lectures on renal failure and its metabolic complications, with particular attention to hyperkalemia.
2. Demonstrate an understanding of the pharmacology, mechanism of action, and potential side effects of calcium gluconate, sodium bicarbonate, glucose and insulin.
3. Pass a written examination.
4. Certification is by the Medical Director.

### **Recertification Requirements**

1. Review class and recertification is done every 12 months.
2. A record will be kept to document all cases where this protocol is used.

### **Decertification**

1. Decertification is at the discretion of the Medical Director or the Provincial Medical Director, Emergency Medical Services, Manitoba Health & Healthy Living.

### **Quality Assurance Requirements**

1. Appropriate quality assurance policies must be in place. The Medical Director or designate must review all instances where this protocol is used. As a minimum, the following must be assessed:
  - i) appropriateness of implementation
  - ii) adherence to protocol
  - iii) any deviation from the protocol
  - iv) corrective measures taken, if indicated
2. Yearly statistics for protocol use compiled and forwarded to Emergency Medical Services, Manitoba Health & Healthy Living.