



Dialysis/ Renal Failure

History

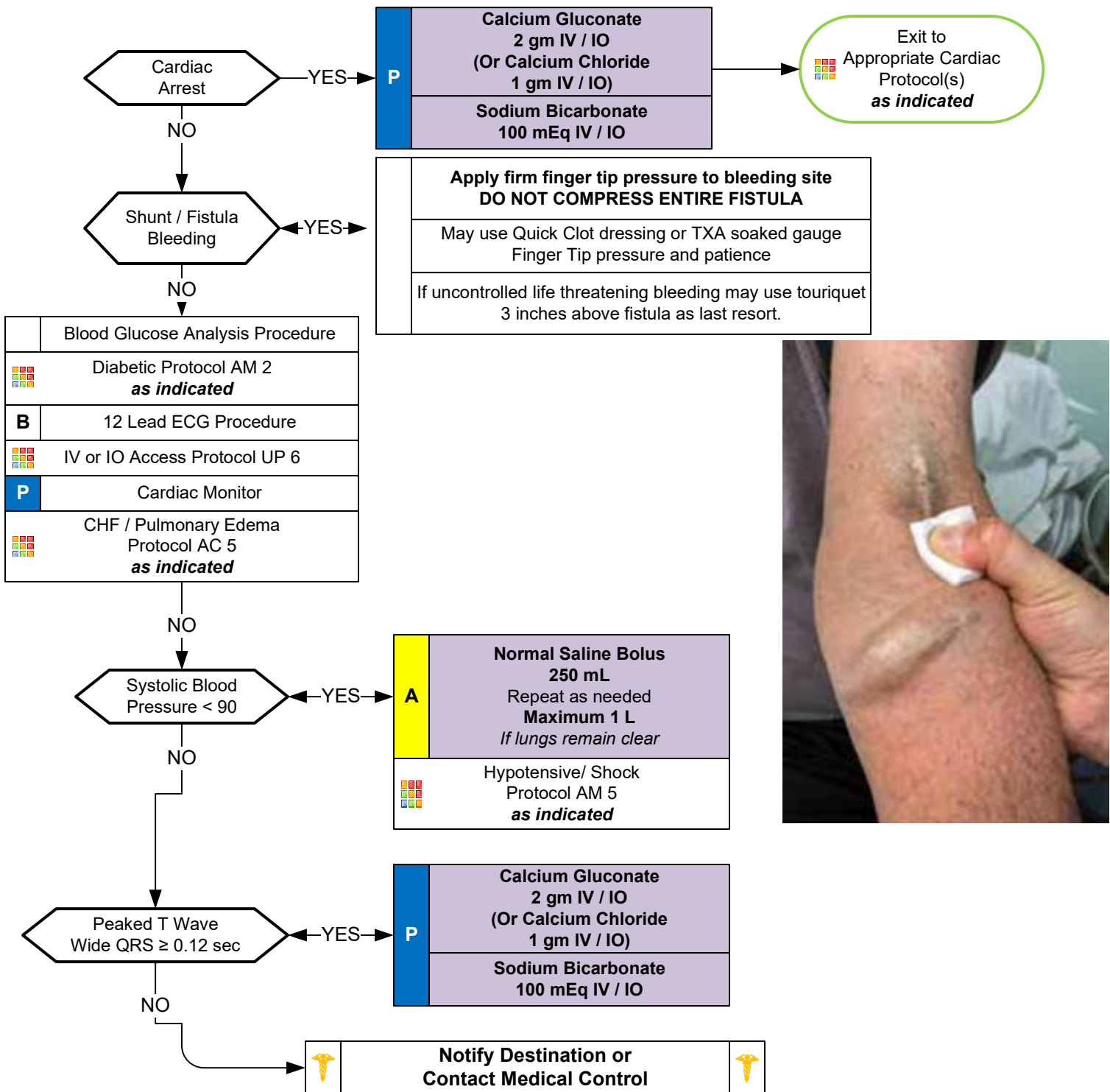
- Peritoneal or Hemodialysis
- Anemia
- Catheter access noted
- Shunt access noted
- Hyperkalemia

Signs and Symptoms

- Hypotension
- Bleeding
- Fever
- Electrolyte imbalance
- Nausea and / or vomiting
- Altered Mental Status
- Seizure
- Arrhythmia

Differential

- Congestive heart failure
- Pericarditis
- Diabetic emergency
- Sepsis
- Cardiac tamponade

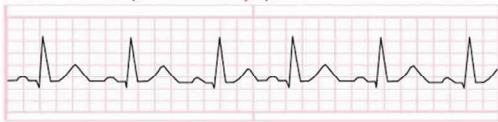




Dialysis/ Renal Failure

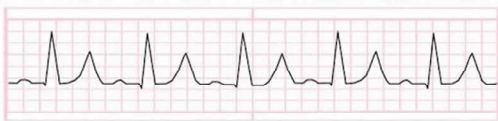
Serum potassium levels

A. normal (3.5 - 5.5 mEq/L)



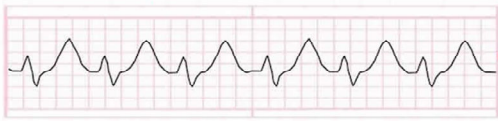
- Normal intervals and complexes

B. about (7.0 mEq/L)



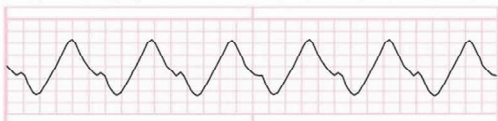
- Peaked T waves (usually the earliest sign of hyperkalaemia)
- P wave widens and flattens, PR segment lengthens, P waves disappear

C. (8.0 - 9.0 mEq/L)



- Prolonged QRS interval with bizarre morphology and development of sine wave
- Can cause any kind of conduction blocks

D. (>10 mEq/L)



- Sine wave (a pre-terminal rhythm). Wide, bizarre QRS. causes: Asystole, VF, PEA with bizarre wide complex rhythm

Emergent ER/ICU Dialysis Capable Hospitals (Ability for 24/7 emergent dialysis)

1. CEMC - 24/72. ECU - 24/7 – Novant 24/7

Other local hospitals have routine dialysis beds – OMH, Carteret

- Very limited availability
- No CVVH or Emergent

Scotts Hill – no dialysis resources

If suspected High K with EKG changes then transport to CEMC / ECU / Novant

Pearls

- **Recommended exam: Mental status. Neurological. Lungs. Heart. Skin.**
- **Preferably transport to a medical facility capable of providing dialysis treatment.**
- **Do not take Blood Pressure or start IV / IO in extremity which has a shunt/ fistula in place.**
- **Access of shunt indicated in the dead or near-dead patient only with no IV or IO access.**
- **If hemorrhage cannot be controlled with firm, uninterrupted direct pressure, application of tourniquet with uncontrolled dialysis fistula bleeding is indicated.**
- **Hemodialysis:**
Process which removes waste from the blood stream and occurs about three times each week.
Some patients do perform hemodialysis at home.
- **Peritoneal dialysis:**
If patient complains of fever, abdominal pain, and/ or back pain, bring the Peritoneal Dialysis fluid bag, which has drained from the abdomen, to the hospital.

Complications of Dialysis Treatment:

Hypotension:

Typically responds to small fluid bolus of 250 mL Normal Saline.

May result in angina, AMS, seizure or arrhythmia.

Filtration and decreased blood levels of some medications like some seizure medications:

Disequilibrium syndrome:

Shift of metabolic waste and electrolytes causing weakness, dizziness, nausea and/ or vomiting and seizures.

Equipment malfunction:

Air embolism.

Bleeding.

Electrolyte imbalance.

Fever.

- **Fever:**
Consider sepsis in a dialysis patient with any catheter extending outside the body.
- Always consider Hyperkalemia in all dialysis or renal failure patients.
- Sodium Bicarbonate and Calcium Chloride/ Gluconate should not be mixed. Ideally give in separate lines.
- Renal dialysis patients have numerous medical problems typically. Hypertension and cardiac disease are prevalent.