Project: Ghana Emergency Medicine Collaborative

Document Title: Pulseless Electrical Activity

Author(s): Doug Vogel/Zach Sturges (University of Michigan), MD/MD, 2012

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Here here 2nd year.
Whoever has the least clothing on.

You may consult:
One PGY-2
Action Page

- Opening Statement
- ABCDE’s
- HPI
- Background
- Physical

- Results
- Critical Actions
- Review
The Case

- You walk into LDS Hospital at 7:00am
- PTS: empty
- Nurses: Chillin’
- Overnight doc: Outta here
- You kick back and get ready to play Bejeweled on your Palm
The Case

- BANG BANG BANG (Ambulance Door)
ABCs

**
History

- Brought to ER by bystander
- Found near Pioneer Park, unconscious
- No syringes or bottles noted

**
Background History
Physical
Physical

- VS: 36.4, 122, 0, Unobtainable BP
- Gen: Unresponsive
- HEENT: nl
- Neck: no JVD
- Pulm: CTAB
- CV: No heart tones

- Abd: nl
- M/S: nl
- Neuro: GCS 3
Physical

Skin:
  Mottled
Medical Alert tag: DM, Renal Failure
LUE: AV Fistula

**
Results

LABS
- CBC / Diff
- BMP
- LFTs
- Amylase/Lipase
- Coags
- Enzymes
- Type S or C
- U/A
- Pregnancy
- Tox Screens
- Miscellaneous

IMAGES
- Radiographs
- CT Scans
- MRI
- Ultrasound

Tracings
- EKG

**
LABS

- **I-Stat:**
  - pH 7.05, Na 134, K 8.6, Cl 102, CO2 14,
  - Glu 188, Cr 10.6, H-crit 38

- All others pending

Results **
Glucose  180

Results  **
Results

**

Source Unknown
Ultrasound

Results

Source Unknown
EKG BANK

- EKG Initial
- EKG #2
- EKG #3
- EKG #4
- EKG #5

- Rhythm Strip 1
- Rhythm Strip 2
- Rhythm Strip 3

**
EKG (Initial)
EKG #2
Rhythm Strip 1

EKG

Source Unknown
Critical Actions

- Initiate ACLS
  - Airway management
  - Chest Compressions
  - Epinephrine
- Recognize/Treat Hyperkalemia
- Consult Nephrology for hemodialysis
- ICU admit
Important Actions

- C-Collar
- Narcan/Thiamine/Glucose (or check glucose stat)
- Consider all causes of PEA
Hyperkalemia

Classification
(Note, clinical severity not necessarily level-dependent)

Mild
5.5 – 6.0

Moderate
6.1 – 7.0

Severe
7.0 +
Hyperkalemia

- Decreased or impaired excretion
  - Renal Failure, obstruction, SCA...
- Addition of K+ into extracellular space
  - K+ supplement, rhabdo, hemolysis
- Transmembrane shifts
  - Acidosis, Dig toxicity, Succinylcholine
- Factitious
Hyperkalemic EKG

1. Peaked T waves, shortened QT, ST depression
2. Widening QRS, increased PR, dec p-wave amplitude
3. P wave disappears, sine wave
4. V-fib / asystole
Hyperkalemia Treatment

- Calcium
  - Ca Chloride 5cc of 10% sol over 2 min
  - Ca Gluconate 10cc 10% sol over 2 min
- Dextrose 50 ml D50W
- Insulin 5-10 units reg IV
- Na Bicarb 50-100 mEq
- Albuterol 5mg neb
- Kayexelate 25-50 g po/pr
Hyperkalemia Treatment

- Hemodialysis
Question for the Interns

- Name a cause of hyperkalemia in which you would want to avoid using calcium?
Causes of PEA

- H
- H
- H
- H
- H
- T
- T
- T
- T
- T
Causes of PEA

- Hypovolemia
- Hypothermia
- Hypoxia
- Hydrogen anion
- Hypo/Hyper-K
- Tamponade
- Tension PTX
- Tablet
- Thrombosis (ACS)
- Thrombosis (PE)
PEA Treatment

- Ventilate / Chest Compressions
- Reverse underlying bad boy
- Epinephrine
  - 1 mg IV q 3-5 min
- Atropine
  - Use if HR < 60
  - 1 mg IV q 3-5 min (Max 0.4 mg/kg)