

# Clinical Case Conference

2024 Pulmonary and Critical Care Symposium

## Panelists

Pat DiGiacomo MD, Anna Prishchepova MD, Kyle Holden DO

## Moderator

Collin Flanagan DO

# Case #1

A 44M with HTN, T2DM, Alcohol Dependence presents to the Emergency Department with Chief Complaint of lethargy, shortness of breath.

VS: HR 120, SpO<sub>2</sub> 92% on 6L NC, 110/80, RR 24, Temp 38.1C (100.5F)

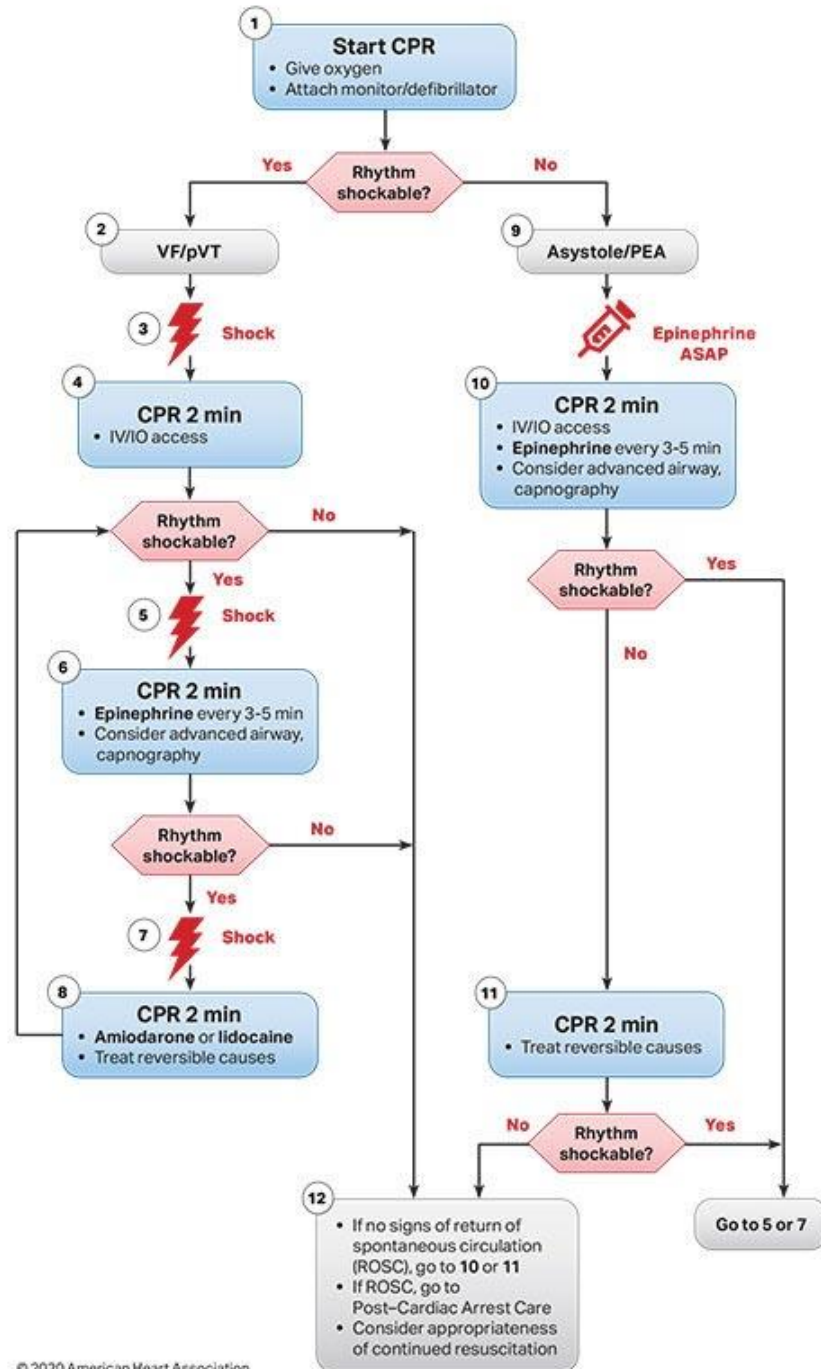
His BG was >600mg/dl, Anion Gap 28 consistent with DKA.

ABG – pH 7.1, PaCO<sub>2</sub> 26, PaO<sub>2</sub> 66, HCO 12

## Case #1 cont.

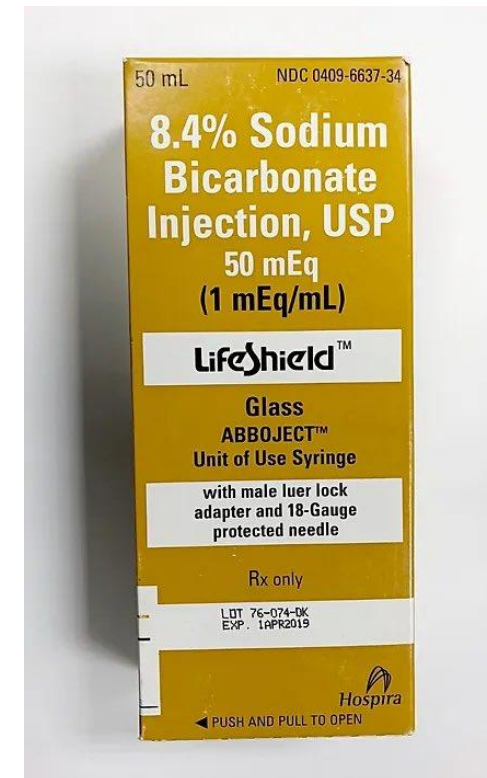
Due to excessive work of breathing, progressive encephalopathy the patient was intubated. He is brought to CT Scan for CT PE protocol. A code blue is called overhead for PEA in the CT Scan of the ED.

# Adult Cardiac Arrest Algorithm (VF/pVT/Asystole/PEA)



<b>CPR Quality</b>
<ul style="list-style-type: none"> <li>Push hard (at least 2 inches [5 cm]) and fast (100-120/min) and allow complete chest recoil.</li> <li>Minimize interruptions in compressions.</li> <li>Avoid excessive ventilation.</li> <li>Change compressor every 2 minutes, or sooner if fatigued.</li> <li>If no advanced airway, 30:2 compression-ventilation ratio.</li> <li>Quantitative waveform capnography               <ul style="list-style-type: none"> <li>If PETCO<sub>2</sub> is low or decreasing, reassess CPR quality.</li> </ul> </li> </ul>
<b>Shock Energy for Defibrillation</b>
<ul style="list-style-type: none"> <li><b>Biphasic:</b> Manufacturer recommendation (eg, initial dose of 120-200 J); if unknown, use maximum available. Second and subsequent doses should be equivalent, and higher doses may be considered.</li> <li><b>Monophasic:</b> 360 J</li> </ul>
<b>Drug Therapy</b>
<ul style="list-style-type: none"> <li><b>Epinephrine IV/IO dose:</b> 1 mg every 3-5 minutes</li> <li><b>Amiodarone IV/IO dose:</b> First dose: 300 mg bolus. Second dose: 150 mg.</li> <li><b>Lidocaine IV/IO dose:</b> First dose: 1-1.5 mg/kg. Second dose: 0.5-0.75 mg/kg.</li> </ul>
<b>Advanced Airway</b>
<ul style="list-style-type: none"> <li>Endotracheal intubation or supraglottic advanced airway</li> <li>Waveform capnography or capnometry to confirm and monitor ET tube placement</li> <li>Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions</li> </ul>
<b>Return of Spontaneous Circulation (ROSC)</b>
<ul style="list-style-type: none"> <li>Pulse and blood pressure</li> <li>Abrupt sustained increase in PETCO<sub>2</sub> (typically ≥40 mm Hg)</li> <li>Spontaneous arterial pressure waves with intra-arterial monitoring</li> </ul>
<b>Reversible Causes</b>
<ul style="list-style-type: none"> <li>Hypovolemia</li> <li>Hypoxia</li> <li>Hydrogen ion (acidosis)</li> <li>Hypo-/hyperkalemia</li> <li>Hypothermia</li> <li>Tension pneumothorax</li> <li>Tamponade, cardiac</li> <li>Toxins</li> <li>Thrombosis, pulmonary</li> <li>Thrombosis, coronary</li> </ul>

**DEMOTED**



# Question for Panelists

After initiation of CPR/ACLS, how do you prioritize IVP Bicarbonate and Calcium, if at all?

Use of Biomarkers of Infection?

## Case #1 cont.

ROSC is achieved after 10 minutes of ACLS. Review of the ventilator settings reveals RR12, Tv 500, 100% FiO<sub>2</sub>, PEEP 5. The intensivist increases the RR to 22.

CT PE is negative. CTH also performed shows no acute abnormality. He is brought up to the ICU for management of DKA, and Post-cardiac arrest care.

# What can I help with?

Should I use antibiotics after a cardiac arrest?



Summarize text



Help me write



Code



Get advice



Make a plan

More

By messaging ChatGPT, you agree to our [Terms](#) and have read our [Privacy Policy](#).

Should I use antibiotics after a cardiac arrest?



Antibiotics are not typically used as a direct treatment for cardiac arrest itself. Cardiac arrest usually requires immediate interventions like CPR and defibrillation. However, if there are underlying infections or complications that could have contributed to the cardiac arrest or if the patient is at risk for infections (for example, after resuscitation), antibiotics might be prescribed as part of the overall management.

Always consult a healthcare professional for specific medical advice tailored to the individual situation.



# Question for Panelists...

Do you routinely use empiric antibiotic therapy in your post-cardiac arrest care?



# Targeted Temperature Management at 33°C versus 36°C after Cardiac Arrest

**Authors:** Niklas Nielsen, M.D., Ph.D., Jørn Wetterslev, M.D., Ph.D., Tobias Cronberg, M.D., Ph.D., David Erlinge, M.D., Ph.D., Yvan Gasche, M.D., Christian Hassager, M.D., D.M.Sci., Janneke Horn, M.D., Ph.D., [+26](#), for the TTM Trial Investigators\* [Author Info & Affiliations](#)

Published December 5, 2013 | N Engl J Med 2013;369:2197-2206 | DOI: 10.1056/NEJMoa1310519

VOL. 369 NO. 23 | Copyright © 2013

TTM 1 Trial

Outcome – No significant difference in mortality or neurologic impairment at 6 months

# Hypothermia versus Normothermia after Out-of-Hospital Cardiac Arrest

**Authors:** Josef Dankiewicz, M.D., Ph.D., Tobias Cronberg, M.D., Ph.D., Gisela Lilja, O.T., Ph.D., Janus C. Jakobsen, M.D., Ph.D., Helena Levin, M.Sc., Susann Ullén, Ph.D., Christian Rylander, M.D., Ph.D., [+57](#), for the TTM2 Trial Investigators\* [Author Info & Affiliations](#)

Published June 16, 2021 | N Engl J Med 2021;384:2283-2294 | DOI: 10.1056/NEJMoa2100591 | VOL. 384 NO. 24

Copyright © 2021

TTM 2 Trial

Outcome – No significant difference in mortality or neurologic impairment at 6 months

A large iceberg floats in a deep blue ocean under a sky with scattered white clouds. The visible tip of the iceberg is jagged and snow-capped, while the much larger, submerged portion is visible below the water line, illustrating the concept of hidden complexity or challenges.

# Is it still cool to cool?

- Method
- Temperature Goal?
- Timing of Initiation
- When do you stop TTM?
- Special Populations?

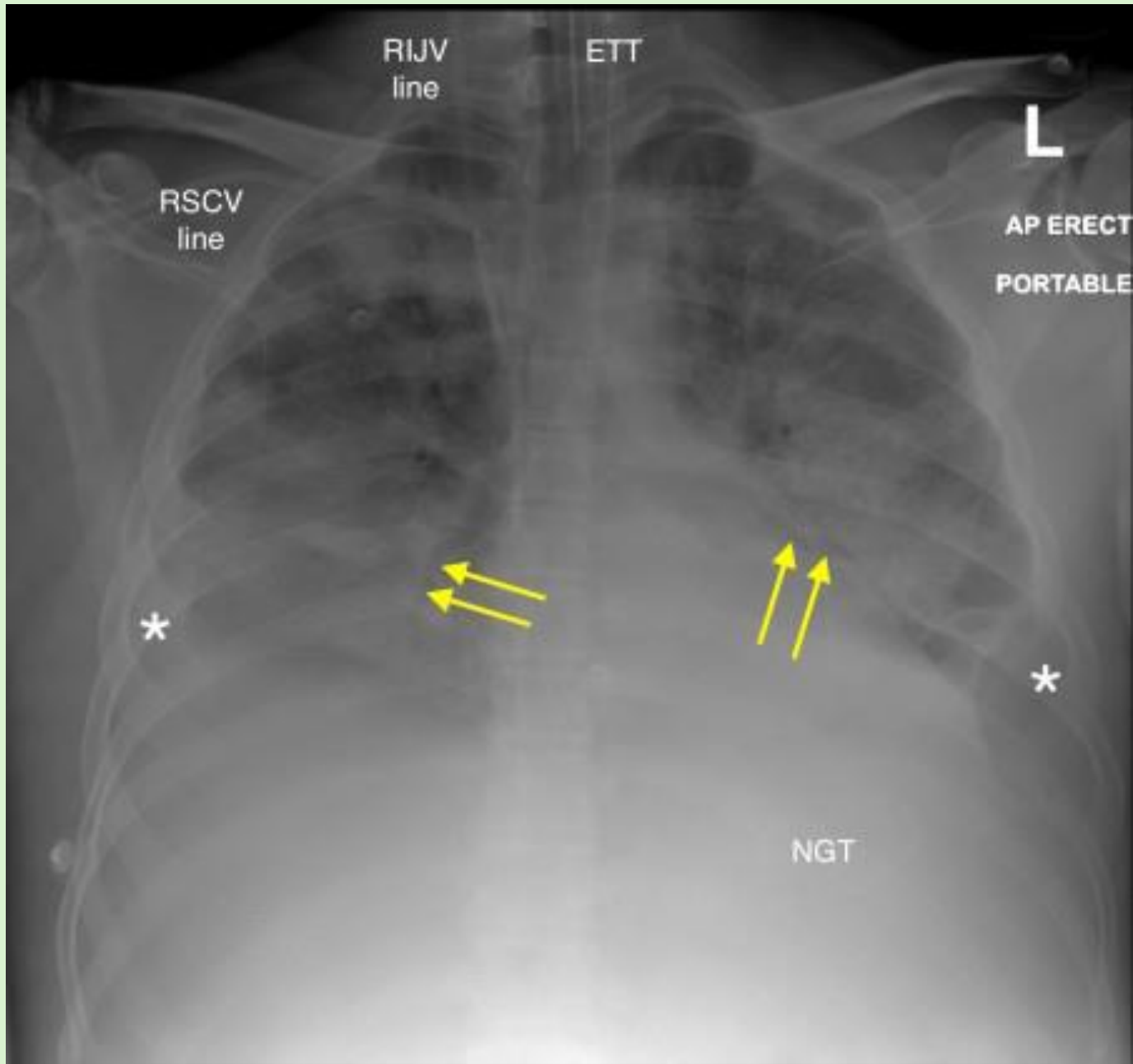
## Case # 2

70F with presents from Nursing Facility after being “found down” next to her bed. She is encephalopathic and hypoxic – requiring intubation in the Emergency Department.

The ICU is called by the ED for admission. On your exam in the ED she is persistently hypoxic and hypotensive, NE @ 0.3mcg/kg/min.

RR12, Tv 500, FiO2 100%, PEEP 10.

CXR reveals b/l opacifications without pneumothorax. ETT in position.



CT Scan was bypassed due to profound hypoxia and hypotension.

# For the Panelists...



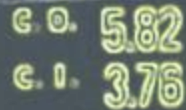
How do you manage this patients hypoperfusion in the setting of PNA with ARDS, Septic Shock...

How do you guide your volume resuscitation?

How do you escalate Vasopressors?

Initiation of Stress Dose Steroids?





# Case #2 Continued

A Central Line and arterial line are placed. The patients MAP is maintained above 65 on NE, VP, and Neo.

The RT hands you the ABG results...

## **ABG**

**pH 7.25**

**PaCO<sub>2</sub> 48**

**PaO<sub>2</sub> 60**

**HCO 20**

**Lactic Acid 4.5**

## **Vent Settings**

**RR 16**

**Tv 420**

**FiO<sub>2</sub> 100%**

**PEEP 13**

# Question for Panelist...

When do you begin prone positioning in ARDS...

Do you follow a turning protocol?

Do you commonly use neuromuscular blockers, for how long?

When oxygenation does improve, when do you discontinue prone positioning?



## Case #2 cont.

The patient begins to improve. Proning is no longer required, and her mentation has improved. She continues to have thickened secretions.

Her daughter asks if her mother will require a tracheostomy. Her nurse told her that tracheostomies typically occur after 2 weeks of mechanical ventilation.

# Question for Panelists...

How would you approach tracheostomy timing in this patient?

What general guidance, advice to you give to families about long term ventilator recovery?