Don't Give Up

100 Post-Arrests
Post-Resuscitation Induced Hypothermia

Scott Weingart, MD RDMS
Director, Division of Emergency Critical Care
Department of Emergency Medicine
Mount Sinai School of Medicine
msa@emcrit.org
“Expertise comes when you have made all the mistakes possible in your field”
I. Induction
II. Maintenance
III. Rewarming
IV. Normothermia
The first 20 minutes

ABCs

Fingerstick

Neuro Exam
Lines/Tubes

What did them in?

STEMI

Don’t squander this time
Get a rectal temp

Screen for Hypothermia

Who do we cool?

10 Cool Everyone Going to an ICU
Any non-trauma, post-arrest patient, who doesn’t follow commands, being admitted to an ICU

The Argument

Induce as quickly as possible

Induce with ICED Saline
Place on Temp Monitoring
esophageal probe to avoid probe lag
<table>
<thead>
<tr>
<th>Device</th>
<th>Time Lag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intravascular Catheters</td>
<td>None</td>
</tr>
<tr>
<td>Esophageal Probe</td>
<td>5 minutes (3-10)</td>
</tr>
<tr>
<td>Rectal Probe</td>
<td>15 minutes (10-40)</td>
</tr>
<tr>
<td>Bladder Probe</td>
<td>20 minutes (10-60)</td>
</tr>
<tr>
<td>Other Sites</td>
<td>Who Cares!</td>
</tr>
</tbody>
</table>

**Treat shivering aggressively**

**Paralyze for Induction**

### Shivering Protocol After Induction

- **Bathe Shivering Assessment (BSAS)** [Emerg Care 2007;11(3)

  1. **None**: No shivering. Must not have shivering on EKG or palpation.  
  2. **Mild**: Localized to one area. Possibly palpable or EKG.  
  3. **Moderate**: Intermittent involvement of upper extremities (3-4 letters).  
  4. **Severe**: Generalized shivering or sustained shivering or shivering to the point of needing treatment.  

- **All patients receive**:  
  - Aetemephalum 600 mg GT Q 6 hours unless allergic

- **BSAS > 1**: Add Fentanyl Drip (Limit 2 mg/hr based on patient EKG & vital signs)

- **BSAS > 2**: Add Propofol Drip (Limit 3 mg/kg/min)

- **BSAS > 3**: Add Atracurium Drip (Limit 1 mg/kg/hr)

- **BSAS > 4**: Add Vecuronium Drip (Limit 0.5 mg/kg/hr)

- **BSAS > 5**: Add Pancuronium Drip (Limit 0.1 mg/kg/hr)

- **Pentobarbital**: Only for severe shivering

- **Pentobarbital**: Only for severe shivering
6
You need a machine. More expensive = less work
33°C (32°C)

Post-arrest patients need incredible nursing, but that is not the hypothermia’s fault

Don’t blame the hypothermia for the hemodynamic instability
Bradycardia

Dysrhythmia

Bleeding

Labs become tougher
Blood Gases
Mg
KCl
iCAL
Glucose

Mg
KCl
iCAL
Glucose

K
180

NEJM 2009;360:1283-1297
Resuscitation 80 (2009) 624–630
Blood Gas Torture

**pH**
Increases ICP
Increases CBF
Higher PaCO2

**Alpha**
Decreases ICP
Decreases CBF
Lower PaCO2
**Easiest Way**

- Don’t tell the lab anything
- \( \text{PaCO2} \ 45 \)
- \( \text{pH} \ 7.35 \)
- \( \text{PaO2} \ 80 \ (100-120) \)

**If you trust your Lab**

- Correct for Temp
- Verify on the results
- \( \text{PaCO2} \ 35 \)
- \( \text{pH} \ 7.45 \)
- \( \text{PaO2} \ 60 \ (80-100) \)

2

Rewarm slowly

0.1 - 0.33 °C per hour

**Actively**
Hypothermia really screws up prognostication, but…

To Review

All refs and slides at:
NYChypothermia.org
blog.emcrit.org

Contact me at:
me@emcrit.org