**Hypothermia Adult Subphase**

**Admit/Transfer/Discharge**

Contraindications:
- Relative: 1. Positive pregnancy test
- 2. Refractory shock with SBP<90 mmHg despite fluid management and vasopressors

Absolute:
- 3. Coagulopathy or uncontrolled bleeding; such as DIC, severe thrombocytopenia, vaso occlusive disease
- 4. DNR

Note: Alteplase/anticoagulants are not contraindications.

(Note)*

**Initiate Protocol**

Hypothermia Protocol, Initiate Hypothermia Protocol Rapidly Cool patient to 32-33 degrees Celsius X 24 hours for cardiac patients and 34.5 degrees Celsius x 72 hours for neurological patients unless otherwise specified by MD/NP/PA.

**Acceptable Methods of Cooling:**

2. Surface Cooling: Leave on automatic mode. Set target temp as ordered. NOTIFY MD if machine has been in place 3 days. NOTE: pads may remain in use for up to 5 days. NOTE: skin checks on area covered with the cooling pads.
3. Intravascular Cooling: Cool line/icy cath. After cool line catheter has been placed and confirmed. Select target temperature as ordered. Maintain temperature as ordered. Notify MD/NP when catheter has been operational for 4 days.

(Note)*

**Vital Signs/Monitoring**

**Vital Signs**

Basic Vital Signs, Q1HR, Record more often if warranted

Temperature, Q15MIN, continuous core temperature (foley temperature preferred, if unavailable then esophageal)

**Notify Provider Vital Signs**

SBP< 90 mmHg, HR< 60 bpm, MAP> 100 mmHg, MAP< 70 mmHg, UOP> 200 ml/kg/hr x 2 hours, UOP< 0.5 ml/kg/hr x 2 hours, ICP> 20 x 10 minutes

**Notify Provider Laboratory Results**

Hgb< 10g/dL or>2g/dL than prev, K+> 5.5 mEq/L, K+< 3.5 mEq/L

**Notify Provider**

Respiratory distress, new arrhythmias or shivering uncontrolled with medications.

**Patient Monitor**

Record RASS Score, BIS Score, BSAS Score hour during initiation phase. (BIS Score is excluded in the ED). Once RASS stable at -4, BIS between 40-60 and BSAS <1, may be recorded every 4 hours.

**Patient Monitor**

CVP Q1HR, record with vital signs

**Intake and Output-Strict**

Q1HR

**Neuro Checks**

Q1HR

**Circulation Check**

Perform Skin Assessment - During Initiation, Maintenance, and Rewarming phases, check skin areas where cooling pad is placed, Q4HR

**Specialty Bed**

Evaluate need for specialty bed

**ED - EKG - 12 Lead**

ONCE

Comments: FOR ED USE ONLY

**Notify Provider**

Add EKG Daily and Continuous EEG. Must be a paper order.

Comments: For Patients in ICU

**Cardiac Panel POC**

**Activity**

Bedrest, CI

**Continuous Infusions**
NS BOLUS IVF

1,000 mL, IV, Injection, Q1HR, Other (see comment)

Comments: Replace CC:CC

Medications

Vasoactive Agents (NOTE)*
If hemodynamically unstable, order STAT echocardiogram to determine ejection fraction at discretion of physician. (NOTE)*
Vasopressors or antihypertensive agents of choice will be at MD discretion to maintain a goal MAP of >65 or <100. (NOTE)*
Consider transfusion of PRBC to maintain Hgb >10 g/dL once CHF clears per physician's discretion. (NOTE)*

Sedation (NOTE)*
midazolam 1 mg/mL in NS 100 mL PREMIX IV Drip (mg/hr) (IVS)*
premix product INET parameters
IV, 1 mg/hr = Titration Increment, 30 min = Titration Interval, Routine

Comments: Start per sedation protocol for RASS score -5 or BIS 40-60. *Conc: 1 mg/mL; Total Volume = 100 mL*

midazolam INET premix 100 mg/100 mL
100 mg, 1 mg/hr
If unable to use midazolam (NOTE)*
propiol 10 mg/mL in 100mL PREMIX IV Drip (mcg/kg/min) (IVS)*
premix product INET parameters
IV Emulsion, 5 mcg/kg/min = Titration Increment, 5 min = Titration Interval, Routine, T;N

Comments: Start per sedation protocol for RASS score -5 or BIS 40-60. *Conc: 10 mg/mL; Total Volume = 100 mL* Change tubing and bottle every 12 hours. Must be intubated.

propiol INET premix 1,000 mg/100 mL
1,000 mg, 5 mcg/kg/min

Pain Management (NOTE)*
fentanyl IV
50 mcg, IV, Injection, ONCE
fentanyl 20 mcg/mL in NS 250 mL PREMIX IV Drip (mcg/kg/hr) (IVS)*
premix product INET parameters
0.5 mcg/kg/hr. IV, 0.25 mcg/kg/hr = Titration Increment, 30 min = Titration Interval, Routine

Comments: May increase by 0.25 mcg/kg/hour every 30 minutes for RASS score -5 or BIS 40-60 to a maximum of 4 mcg/kg/hour. *Conc: 20 mcg/mL; Total Volume = 250 mL*

fentanyl INET premix 5,000 mcg/250 mL
5,000 mcg, 0.5 mcg/kg/hr

Shivering control (Goal BSAS <1) (NOTE)*
busPIRone oral solid
30 mg, PO, Tab, Q8HR, x 3 dose(s)

Comments: administer PO/NG/PEG

Paralytic Agents (NOTE)*
vecuronium IV (mg/kg)
0.1 mg/kg, IV, Injection Powder, ONCE

Comments: 0.1 mg/kg now then 0.8 mcg/kg/min. May increase by 0.2 mcg/kg/min every 30 minutes for BAS <1 to a max of 4.9 mcg/kg/min. Patient must be sedated.

vecuronium 1 mg/mL in NS 100 mL IV Drip (mcg/kg/min) (IVS)*

NS IV Drip - INET parameters
0.8 mcg/kg/min, IV, 0.4 mcg/kg/min = Titration Increment, every 60 minutes = Titration Interval, Routine

Comments: Bolus: 0.1 mg/kg now then 0.8 mcg/kg/min. May increase by 0.2 mcg/kg/min every 30 minutes for BAS <1 to a max of 4.9 mcg/kg/min. *Conc: 1 mg/mL; Total Volume = 100 mL* Patient must be sedated.

vecuronium ADDITIVE - INET
100 mg, 0.8, mcg/kg/min
If unable to use vecuronium (renal dysfunction, etc) (NOTE)*
cisatracurium IV (mg/kg)
0.1 mg/kg, IV, Injection, ONCE

Comments: Bolus: 0.1 mg/kg now; then 1 mcg/kg/min. May increase by 3 mcg/kg/min every 60 minutes for BAS <1 to a max of 10 mcg/kg/min. *Conc: 2 mg/mL; Total Volume = 100 mL* Patient must be sedated.
cisatracurium 2 mg/mL in NS 100 mL IV Drip (mcg/kg/min). (IVS)*

NS IV Drip - INET parameters
1 mcg/kg/min, IV, 3 mcg/kg/min = Titration Increment, 60 min = Titration Interval, Routine

Comments: Bolus: 0.1 mg/kg now; then 1 mcg/kg/min. May increase by 3 mcg/kg/min
cisatracurium ADDITIVE - INET
200 mg, 1 mcg/kg/min
lacrilube ophthalmic ointment
 1 app, both eyes, Ointment, Q12HR
Rewarming Guidelines:(NOTE)*
1. Surface Cooling: Leave on automatic mode. Rewarm to 36.5 Degrees Celsius, at a rate of 0.25 degrees (Celsius) per hour for cardiac arrest patients and 0.12 degrees (Celsius) neurological patients. This will take at least 12-24 hours to achieve. Maintain temperature of 36.5 degrees (Celsius) for 24 hours. Turn off system and remove pad.
2. Discontinue neuromuscular blocking infusion after core temperature reaches 36 degrees Celsius.
3. Monitor patient for hypotension related to rewarming, secondary to vasodilation.
4. Monitor patient for hyperkalemia during rewarm. Hold all K+ containing fluids if K+ > 3.5 immediately before and during rewarming.(NOTE)*
Electrolyte Replacement Guidelines (for physician reference only, requires physician order)(NOTE)*
Potassium (for patients with renal insufficiency, decreased dosing may be required)(NOTE)*
NOTE: For Potassium > 3.5 mEq/L, no replacement necessary; especially during rewarming phase(NOTE)*
Potassium: 3 - 3.5 mEq/L(NOTE)*
  potassium chloride IV PREMIX minbag
    20 mEq | 100 mL, IV, Injection, Q2HR, x 2 dose(s)
    Comments: Infuse no faster than 10 mEq/hr
Potassium: 2.5 - 3 mEq/L(NOTE)*
  potassium chloride IV PREMIX minbag
    20 mEq | 100 mL, IV, Injection, Q2HR, x 3 dose(s)
    Comments: Infuse no faster than 10 mEq/hr
Potassium: < 2.5 mEq/L(NOTE)*
  potassium chloride IV PREMIX minbag
    20 mEq | 100 mL, IV, Injection, Q2HR, x 4 dose(s)
    Comments: Infuse no faster than 10 mEq/hr
Magnesium (for patients with renal insufficiency, decreased dosing may be required)(NOTE)*
NOTE: For Magnesium: > 2 mg/dL, no replacement necessary(NOTE)*
Magnesium: 1.5 - 2 mg/dL(NOTE)*
magnesium sulfate IV
  2 gm, IV, Injection, ONCE
  Comments: 2 grams = 16 mEq.
Magnesium: < 1.5 mg/dL(NOTE)*
magnesium sulfate IV
  4 gm, IV, Injection, ONCE
  Comments: 4 grams = 32 mEq.

Laboratory
Admission Labs(NOTE)*
Urine Pregnancy Qualitative
  Urine, Emergent collect, for 1 time(s)
  Comments: ONCE
Urine Pregnancy POC
  Blood, Emergent collect, ONCE
  Comments: For ED USE ONLY
ABG w/Meas Sat
  Blood, Emergent collect, for 1 time(s)
  Comments: Indicate patient cooled at 32 degrees
CBC with Diff
  Blood, Emergent collect, for 1 time(s)
PT/INR/APTT
  Blood, Emergent collect, for 1 time(s)
Magnesium Level
  Blood, Emergent collect, for 1 time(s)
Phosphorus Inorganic
  Blood, Emergent collect, for 1 time(s)
Comprehensive Metabolic Panel
  Blood, Emergent collect, for 1 time(s)
Amylase
  Blood, Emergent collect, for 1 time(s)
Lipase Level
  Blood, Emergent collect, for 1 time(s)
Lactic Acid
Blood, Emergent collect, for 1 time(s)

Lactic Acid POC
Blood, Emergent collect, ONCE
Comments: For ED USE ONLY

Troponin I Quant
Blood, Emergent collect, for 1 time(s)

Cardiac Panel POC
Blood, Emergent collect, ONCE
Comments: For ED USE ONLY

Scheduled Labs (NOTE)*

Basic Metabolic Panel
Blood, Timed Study collect, Q4HR INTERVAL
Comments: Until Patient Core temp 36.5 degrees Celsius and then discontinue

ABG w/Meas Sat
Blood, Timed Study collect, Q4HR INTERVAL
Comments: Until Patient Core temp 36.5 degrees Celsius and then discontinue

Magnesium Level
Blood, Timed Study collect, Q4HR INTERVAL
Comments: Until Patient Core temp 36.5 degrees Celsius and then discontinue

Phosphorus Inorganic
Blood, Timed Study collect, Q4HR INTERVAL

Ionized Ca
Blood, Timed Study collect, Q4HR INTERVAL
Comments: Until Patient Core temp 36.5 degrees Celsius and then discontinue

Lactic Acid
Blood, Timed Study collect, Q4HR INTERVAL
Comments: Until Patient Core temp 36.5 degrees Celsius and then discontinue

CBC with Diff
Blood, Timed Study collect, Q12HR INTERVAL
Comments: Until Patient Core temp 36.5 degrees Celsius and then discontinue

PT/INR/APTT
Blood, Timed Study collect, Q12HR INTERVAL
Comments: Until Patient Core temp 36.5 degrees Celsius and then discontinue

CPK
Blood, Timed Study collect, Q4HR INTERVAL 3 time(s)
Comments: Until Patient Core temp 36.5 degrees Celsius and then discontinue

Troponin I Quant
Blood, Timed Study collect, Q4HR INTERVAL 3 time(s)
Comments: If patient on prolonged hypothermia for > 48 hours, then punculture Q48 hours throughout the duration of the hypothermia.

Consults/Ancillary Services
Consult to Wound, Ostomy and Continence Nurse

Other
Subphase Activated

*Report Legend:
DEF - This order sentence is the default for the selected order
GOAL - This component is a goal
IND - This component is an indicator
INT - This component is an intervention
IVS - This component is an IV Set
NOTE - This component is a note
Rx - This component is a prescription
SUB - This component is a sub phase