
Therapeutic Hypothermia

Purpose:

To provide guidelines for nurses inducing mild therapeutic hypothermia to critically ill patients in an effort to improve neurologic function.

Policy:

1. The nurse shall note the physicians order for therapeutic hypothermia.
2. The nurse shall initiate the Therapeutic Hypothermia protocol within 5 minutes of the MD order.
3. Patients receiving Therapeutic Hypothermia shall be admitted to the ordering service's primary unit. If no bed available the attending physician shall be made aware.

Procedure:

RN

- A. Provide patient/family education and support
 1. Explain the purpose of hypothermia and the need for pharmacologic paralysis
 2. Encourage family to talk to the patient
 3. Provide emotional support and answer questions
 4. Offer pastoral care support to family
- B. Gather Equipment and Supplies for Cooling
 1. Fluid resuscitation shall be performed with Plasmalyte stored at 4⁰ C
 2. Central Venous and arterial access
 3. Hemodynamic monitoring device
 4. External cooling unit
 5. Temperature probe (if placing Foley, use temp probe catheter)
 6. Neuromuscular blockade available
 7. Sed Line monitor
- C. Preparation for cooling
 1. Verify prescriber's order
 2. Ensure arterial and central venous access is obtained BEFORE hospital cooling begins (Once cool access is more difficult to obtain)
 3. Obtain baseline labs per prescriber's orders
 - a. Particular attention to electrolytes and ABG
 4. Obtain baseline EKG
 5. Place indwelling temperature probe (Bladder – ideal; if Foley already in place use oral or rectal probe)
 6. Thorough skin assessment
 7. Remove heated humidity from ventilator circuit and place HME in line.
- D. Cooling
 1. Infuse hypothermic (4⁰ C) IV fluids as needed for resuscitation
 2. Up to 2 liters of Plasmalyte may be given per MD order (frequently begun in the ED)
 3. Administer adequate continuous sedation and analgesic
 - a. Sed Line monitor shall be used to assess sedation level
 - b. CPOT shall be used to assess pain level
 4. Administer medication to prevent shivering as needed for shivering (typically needed at initiation of cooling)
 5. Assess for shivering using the Bedside Shivering Assessment Scale (BSAS)
 6. Place blankets or wraps appropriate for the external cooling unit
 7. Use external cooling unit per manufactures policy

8. Cooling is maintained for 24 hours from time target temperature is reached unless further ordered by Intensivist.
- E. Monitoring
1. Goal is to maintain patient's core temperature between 32⁰ – 34⁰ C with a target temperature of 33⁰ C for 24 hours
 2. Monitor closely for arrhythmias (if temperature < 32⁰)
 3. Document temperature hourly
 4. Hemodynamic Assessment
 - a. Monitor and document appropriate hemodynamics as ordered and available (ScVO₂, SVV, C.O, C.I, SVI)
 5. Obtain laboratory values per MD orders
 - a. ABG's shall be temp corrected
 - b. All lab values and interventions shall be documented Electrolytes shall be drawn every 8 hours during cooling period
 1. Potassium shall be monitored Q 4 hours during hypothermic diuresis
 6. Obtain EKG if any rhythm changes from baseline
 7. Urine output is monitored and documented hourly
- F. Re – warming
1. Begin re – warming 24 hours after target temperature obtained unless ordered differently by attending physician
 2. Re – warm 0.5⁰ – 1⁰/hr unless ordered by Intensivist. Goal is warm slowly.
 3. Re – warming too rapidly can cause vasodilatation, hypotension, and rapid electrolyte shifts and further secondary neurological injury
 4. Potassium shifts to extra cellular compartments during re – warming
 - a. STOP all potassium containing fluids
 - b. Continue to correct hypokalemia as needed
 5. Monitor glucose levels closely
 6. Monitor electrolytes every 4 hours during re – warming period
 7. Obtain EKG if any rhythm changes from baseline

Bibliography

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