

## NORMOTHERMIA MAINTENANCE

### NURSING

☑ Insert indwelling urinary catheter; Reason for Urinary Catheter: Strict intake and output

☑ Normothermia Instructions:

- Monitor temperature continuously while on Arctic Sun with bladder or esophageal thermometer,
- NOTE-least desirable is rectal thermometers,
- No oral or axillary temperatures while on Arctic Sun
- Monitor water temperature on the Arctic Sun Q Hr
- Do a bedside shivering assessment scale (BSAS) Q Hr
- Apply ice bags to neck, axilla, and groins
- Discontinue ice bags when patient is placed on Arctic Sun cooling machine
- Arctic Sun cooling machine with gel pads to cover 40% of body surface area, set goal Temperature of 37°C
- Apply counter warming measures to prevent shivering when BSAS  $\geq$  1.
- Counter warming measures include:
  - Socks applied to hands and feet
  - Warming blanket (Bair Hugger) to provide surface warming and prevent shivering
- May interrupt Arctic Sun if needed for transport off unit for procedure such as CT scan or MRI
- Notify Intensivist if patient consistently has a fever as indicated by Arctic Sun water Temperature indicator.

#### Weaning Arctic Sun:

- When water temperature on Arctic Sun stable for 24 Hrs turn off Arctic Sun machine
- Continue to monitor patient temperature Q Hr for 24 Hrs. If temperature rises above 38°C (100.4°F), restart normothermia orders

#### ***Stage I cooling measures for Normothermia:***

- Give Tylenol Prn temperature > 38° C per MD orders.
- Ice packs to groin, axilla, and neck until temperature is < 38° C (100.4°F)

#### ***Stage II cooling measure for Normothermia:***

- Initiate if fever does not change 2 Hrs after implementation of stage I cooling and
- Temperature is not < 38° C (100.4°F).
- Initiate standard cooling blanket under patient
- Monitor for shivering (See Shivering scale below)
- Continue ice packs to groin, axilla, and neck

#### ***Stage III cooling measure for Normothermia:***

- Initiate 2 Hrs after implementation of stage II cooling and temperature is not < 38° C.
- Initiate Arctic Sun cooling machine.
- Apply the appropriate size Arctic Sun gel pads to the back, trunk and thighs
- Connect the patient pad lines to the fluid delivery line of the Arctic Sun
- Turn on the device.
- Set Arctic Sun only on Automatic mode, goal temperature is set at to 37° C (98.6°F)
- Connect the temperature probe to Arctic Sun
- Assess for presence of shivering Q 1 Hr.

**DO NOT WAIT UNTIL FULL BODY RIGORS HAS OCCURRED TO MANAGE SHIVERING**

**Medications: STEP 1:**

**Institute the following on all patients when cooling strategies are implemented:**

- Acetaminophen (Tylenol) 650 mg Po Q 6 Hrs. Hold if NOT on cooling measures.
- RN to contact pharmacy to enter NG or PR order if pt cannot take by mouth.

**Medications: STEP 2:**

- Meperidine (Demerol) 25 mg IV Push Q 1 Hr Prn 1<sup>st</sup> signs of shivering (BSAS > or = 1).  
Hold if SCr > 1.5.
- FentaNYL (Sublimaze) 25 mCg IV Push Q 1 Hr Prn 1<sup>st</sup> signs of shivering (BSAS > or = 1) if not able to give meperidine.
- BusPIRone (BuSpar) 30 mg Po Q 8 Hrs Prn shivering (BSAS > or = 1) not relieved with meperidine or fentanyl. RN to contact pharmacy to enter NG order if pt cannot take by mouth.

**Medications: STEP 3:**

Reminder – For FentaNYL IV infusion - Use “FentaNYL IV Infusion SS”

- Magnesium sulfate 40 Gm/1000 mL SWFI Bolus with 2 Gm over 60 min x 1 dose Prn Shivering (BSAS > or = 2) then start a continuous IV infusion at 1 Gm/Hr. Titrate up or down in 0.5 Gm/Hr increments Q 4 Hrs up to a max of 4 Gm/Hr to maintain serum magnesium between 3 – 4 mg/dL. For serum magnesium > 4 mg/dL, hold magnesium infusion and contact MD.

**Medications: STEP 4:**

Reminder – For Propofol IV drip order – Use “Sedation SS - Critical Care”

Reminder – Ensure sedation and analgesia are optimal prior to initiation of paralytic therapy.

- Vecuronium (Norcuron) (0.1 mg/Kg, Max =10 mg/dose)= \_\_\_\_\_mg IV Push **Q 2 Hrs** Prn shivering (BSAS > or = 3)
- Vecuronium (Norcuron) (0.1 mg/Kg, Max =10 mg/dose)=\_\_\_\_\_mg IV Push **x 1 dose** Prn shivering (BSAS > or = 3)
- Vecuronium (Norcuron) 1 mCg/Kg/min continuous IV infusion Prn shivering (BSAS > or = 3), start at 1 mCg/Kg/min and titrate up by 0.25 mCg/Kg/min or down by 50% after each train of four test to maintain train of four with neuromuscular stimulator goal 1 of 4. (max dose = 1.75 mCg/Kg/min)
- Lubricating Ophthalmic Ointment (Lacri-lube) to both eyes Q 4 Hrs ATC while on neuromuscular blocking agent. RN to contact Pharmacy to DC Lubricating Ophthalmic Ointment order when Vecuronium is discontinued.

Other medications: \_\_\_\_\_

**\*All labs/diagnostics will be drawn/done routine now unless otherwise specified**

**LABORATORY – Chemistry**

REMINDER: MUST BE ORDERED IF PATIENT IS ON MAGNESIUM INFUSION

- Magnesium (Mg)-Q 4 Hrs

**DIAGNOSTICS - Neurology**

- EEG

**REMINDERS:**

**Inclusion Criteria:**

- Patients with diagnosis of subarachnoid hemorrhage (SAH), intracranial hemorrhage (ICH) stroke, ischemic stroke, and traumatic brain injury.
- Post cardiac arrest patients may be maintained normothermic using the arctic sun according to the hypothermia order set.

**Exclusion Criteria:** Arctic Sun is **contraindicated** in patients with the following conditions:

- Certain hematological disorders that affect thrombosis (cryoglobulinemia, sickle cell disease, serum cold agglutinins)
- Peripheral vasospastic disorders (narrowing of the blood vessels leads to decreased blood flow)
- Extensive skin defect (Burns and skin grafts)
- Caution is advised with sepsis patients

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MEDITECH NAME: NORMOTHERMIA MAINTENANCE

MEDITECH MNEMONIC: MD.NORMT

NANCY CHRISTIANSEN/ANKER

ZYNX - None

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