

## **UCSD BRAIN CODE GUIDELINE FOR NONTRAUMA PATIENTS**

For clinical signs of herniation (decreased mental status, sluggish pupil, dilated pupil, etc. due to increased ICP) or ICP>20 x 3 min

- 0 min**
- **WEBPAGE “BRAIN, CODE”**→ at HC pages code pharmacist, in-house HC neuro res, HC NCC attending. At JMC, pages code pharmacist, in-house NCC res, JMC NCC attending. Code pharmacist brings brain code box w/ 23.4% saline, mannitol, neosticks (boxes are in HC SICU/Main Pharmacy, JMC NCCU/Main Pharmacy).
  - **PAGE NEUROSURGERY. PAGE ANESTHESIOLOGY IF NOT ALREADY INTUBATED.**

- 0-5 min**
- **Surgical lesion? (mass, big stroke/ICH, hydro) Consider stat crani/EVD/adjust EVD.**
  - **ABC\***: intubate, SaO<sub>2</sub>>94, cardiac monitor, send stat CBC, BMP, coags
  - **Position**: HOB at 45°, neck straight. DO NOT LAY FLAT OR PLACE IJ LINE; if central line needed place femoral central line in reverse Trendelenburg.
  - **MILD hyperventilation** (RR 14-18), **place ETCO<sub>2</sub> monitor, target EtCO<sub>2</sub> 30/PaCO<sub>2</sub> 35**
  - **Osmotx: GIVE MANNITOL** (20%, 1g/kg IVP, periph IV by RN) **AND SALT (see below)**
    - **SALT: 23.4% saline** (30cc IVP, *central line only*, by MD/NP w/ direct/phone supervision by attending/fellow) over 3min **OR 3% saline** 250cc IV bolus (central line wide open or good PIV over 15 min)
  - **CPP rx: start NS 1L bolus and 100cc/h thereafter.** Keep CPP 60-110 or MAP>80 w/ **phenylephrine IVP** [100-200mcg (1-2 cc) of neostick at a time, by MD/NP ONLY]/drip or **levophed** drip. Only lower BP (nicardipine/labetalol) if bleed, impaired autoreg, or CPP>110
  - **Agitation/pain tx if indicated** (fentanyl 25-100mcg IVP, propofol 25-50mg IVP)
  - If **tumor/abscess**: dexamethasone 10mg IVP stat



**ICP/EXAM NOT NORMALIZED?**

- 5-10 min**
- **Repeat 23.4% IVP or 3% saline** 250cc IV bolus
  - **Stat Head CT** if etiology of herniation unknown. Consider decompressive crani.



**ICP/EXAM NOT NORMALIZED?**

- 10-15 min**
- **Propofol** 100mg IVP (may ↓BP), repeat x 1 in 2 minutes if no effect. If effective, start propofol drip & place SEDLINE; titrate to burst suppression. Consider decompressive crani.



**ICP/EXAM NOT NORMALIZED?**

- 15-20 min**
- **Moderate hypothermia (32-34°C) w/ Arctic Sun or Pentobarbital** 10mg/kg IV bolus over 30min. If effective, start pentobarb drip 3mg/kg/h x 3h then 1mg/kg/h & place SEDLINE; titrate to burst suppression. Consider decompressive crani.

- Post rx**
- Start 3% NS at 10-30cc/h, check Na q6h, goal Na 5-10 meq/L above initial sodium
  - Immediately change vent to target normocarbica (PaCO<sub>2</sub> 35-40), turn down FiO<sub>2</sub> immediately to 40% to target normooxia (PaO<sub>2</sub><150)
  - Ensure normothermia (<37.5C) if pt not made hypothermic already
  - MD must document code and administration of mannitol, 23.4%, or phenylephrine in a note