

## Catastrophic Brain Injury Guidelines

Consider obtaining a critical care consult if not already involved in patient care

### Maintain SBP >90 (MAP>60)

1. Consider invasive hemodynamic monitoring
2. Adequate hydration: Ensure adequate hydration to maintain euvolemia
3. Vasopressor support: If hypotensive post adequate rehydration, utilize Levophed 0.03-0.3 mcg/kg/min, Dopamine 3-5 mcg/kg/min; (max dose 20 mcg/kg/min) as the first pressor of choice followed by Neosynephrine 50 mcg/min; (max dose mcg/min).

### Maintain Urine Output >0.5 ml/kg/hr <300 ml/hr (consider DI if >300 ml/hr X2 hours)

1. Treat Diabetes Insipidus with Vasopressin IV drip 0.5-2.5 units/hour, if UO still >300 ml/hr
2. If UO falls below 1 ml/kg/hr, assess fluid status – may need rehydration or BP support

### Maintain PO2 >100, CO2 35-45

1. Adequate ventilation: 5.0-8.0 cm/h<sub>2</sub>o PEEP; consider vent changes to maintain CO<sub>2</sub> 35-45
2. Aggressive respiratory hygiene if not contraindicated by patient's condition (suction and turn every 2 hours)
3. Respiratory treatments to prevent bronchospasm

### Maintain pH 7.35-7.45, Bicarb 22-26

1. Consider Vent Changes to maintain pH WNL
2. If pH <7.20 give 1 amp Bicarb. Recheck ABG in 1 hr and repeat if needed until pH >7.29
3. If continued acidosis consider evaluating alternative sources of acidosis with appropriate treatment

### Other orders to consider:

1. Monitor and treat electrolytes maintaining the following:
  - Sodium: 134-145 mmol/L
  - Potassium: 3.5-5.0 mmol/L
  - Magnesium: 1.8-2.4 meq/L
  - Phosphorus: 2.0-4.5 mg/dL
  - Ionized Calcium: 1.12-1.3 mmol/L
2. Monitor glucose and treat with insulin drip if needed (keep 80-150 mg/dl) rather than SQ
3. Monitor and treat Hgb, Hct, Coagulation Factors (especially if gun shot wound to the head, or other penetrating head injury)
  - Maintain Hgb >8.0 g/gL; and Hct >30%
  - If PT > 18.0; give 2 units FFP
  - If Fibrinogen 70-100; give 2 units FFP. If <70; give cryoprecipitate
  - If platelets <50; give 6 pack of platelets
  - \* remember to re-check labs after treatment
4. Maintain temp 36-37.5 Celsius with bair hugger/warming-cooling blanket