Preserving the Organ Donation Option

Devastating Brain Injury or Catastrophic Brain Injury Guidelines

The initiation of the Devastating Brain Injury (aka Catastrophic Brain Injury) Guidelines is recommended when there is a neurological injury where there is an immediate threat to life from a neurologic cause. Early initiation of these guidelines will:

- allow the critical care teams to provide optimal critical care and honor the Do Not Resuscitate (DNR) decision, while also preserving organs for the potential of transplant.
- assist in the anticipation and treatment of the pathophysiology of devastating brain injury.
- prevent 'step down' in clinical management, and preserve the family's donation decision opportunity if their loved one is a potential donor, or allow for the patient's own wishes to be honored if they were a registered donor.

Do Not Resuscitate (DNR) and Preserving Organs for Transplant

There is a balancing act between honoring the DNR decision and preserving organs of a potential donor for transplant. It needs to be clear what the DNR decision means. DNR and actually withdrawing life-sustaining treatments (or setting limits on treatment) are each completely different situations. To preserve the organs for transplant and to accurately assess brain death, clinical management is needed to:

- Maintain blood pressure as close to normal as possible
- Normalize electrolytes and body temperature
- Manage oxygenation and organ perfusion
- Balance intake and output

Suggested Guidelines

FLDRN collaborated with local intensivists and developed the following suggested guidelines to ensure optimal care for the patient admitted with a devastating brain injury and preserve the option of donation.

Maintain SBP >100 (MAP > 65)

1. Consider invasive hemodynamic monitoring (Arterial line, CVP)
2. Adequate hydration: Ensure adequate hydration to maintain euvolemia
3. Vasopressor support: Utilize pressors if needed to keep MAP > 65

Maintain Urine Output 0.5-3 ml/kg/hour (consider DI if UOP >4cc/kg/hour x 2 hours)

1. Treat Diabetes Insipidus with DDAVP or Vasopressin drip and consider 1:1 urine replacement
2. If UO falls below 0.5 - 1ml/kg/hr, assess fluid status (may need re-hydration or BP support)

Maintain Adequate Ventilation

1. Target pH 7.35 – 7.45
2. Target pO2 > 100 and pCO2 35-45
3. Goal for PaO2/FIO2 ratio is > 300
4. Suction and turn every 2 hours if not contraindicated by patient's condition
5. Bronchodilator (Albuterol) to prevent bronchospasm every 4 hours

Other Considerations

1. Maintain patient on ICU Electrolyte Replacement Protocol, if available
2. Maintain Sodium <150 (upper limit of patients on 3% saline is 160)
3. Monitor glucose (keep BG 80-150) and treat with ICU Insulin drip protocol if needed
4. Monitor and treat Hgb/Hct/coagulation factors (especially if GSW or other penetrating head injury)
   - Hgb > 7.0 g/dL
   - PT < 18.0 and Platelets >50
5. Maintain temperature 36.5 - 37.5° C if not receiving targeted temperature management