DETERMINING BRAIN DEATH
Notify Tennessee Donor Services (TDS): 1-800-969-4438

Prerequisites (ALL must be checked)

- Coma, irreversible and cause known
- Neuroimaging explains coma
- CNS depressant drug effect absent (if indicated toxicology screen; if barbiturates given, serum level <10μg/mL)
- No evidence of residual paralytics (electrical stimulation if paralytics used)
- Absence of severe acid-base, electrolyte, endocrine abnormality
- pH is below 7.45
- Normothermia or mild hypothermia (core temperature >36°C)
- Systolic blood pressure ≥ 100mmHg
- No spontaneous respirations
- Absence of cervical spinal cord injury

Examination (ALL must be checked)

- Pupils non-reactive to bright light
- Corneal reflex absent
- Oculocephalic reflex absent (tested only if C-spine integrity ensured)
- Oculovestibular reflex absent
- No facial movement to noxious stimuli at supraorbital nerve, temporomandibular joint
- Gag reflex absent
- Cough reflex absent to tracheal suctioning

*Attending MUST BE PRESENT thru Apnea Testing

- Patient is hemodynamically stable
- Ventilator is adjusted to provide normocarbia (PaCO2 34-45mmHg)
- Patient pre-oxygenated with 100% FiO2 for >10 minutes to PaO2 > 200 mmHg
- Patient well oxygenated with a PEEP of 5cmH2O
- Provide oxygen via a suction catheter to the level of the carina at 6 L/min or attach T-piece with CPAP at 5cm mmHg
- Disconnect ventilator
- Spontaneous respirations absent
- Arterial blood gas drawn at 10 minutes
- Patient reconnected to ventilator

(Hemodynamic instability or Oxygen Desaturation)

Apnea Test Aborted

- Cerebral angiogram
- Nuclear Scintigraphy
- Cerebral Brain Flow Study

**Special considerations**

***If patient is under 18 years of age, two brain death tests must be performed. If brain death is determined by clinical exam (e.g. apnea test), testing must be 12 hours apart by two different ICU attending physicians. If radiographic study consistent with brain death, it must be accompanied by a clinical exam but does not require a second test.

***If unable to meet criteria for apnea test, nuclear medicine brain flow study is acceptable if clinical exam shows no neurologic function.

BRAIN DEATH

pCO2 ≥ 60mmHg, or 20 mmHg rise from normal baseline value
**TRAUMA TEAM DUTIES:**

1. Notify attending on call
2. Tennessee Donor Services (TDS): 1-800-969-4438 TDS is to be called on all deaths and all pending deaths
3. Complete Brain Death Note in eStar (attending must co-sign)
4. Medical Examiner Office: 615-743-1800 or 800-216-0107
5. Medical Examiner office is to be called on trauma service deaths
6. Complete Report of Death and Death Summary in eStar
7. Decedent Affairs: 615-835-1497 (pager)

**ANCILLARY TESTS:**

- Cerebral Angiogram: Formal arteriography gold-standard, CTA and/or MRA are not valid alternatives
- Nuclear Scintigraphy Cerebral Brain Flow Study: Tc99m Hexametazime Nuclear medicine scan
REFERENCES:


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