

EAST LIVERPOOL CITY HOSPITAL
PATIENT CARE POLICY & PROCEDURE

SUBJECT: Determination of Brain Death and Discontinuing Life Support

PURPOSE: To provide guidelines and criteria for establishing the clinical definition of brain death and the discontinuation of life support measures.

Uniform Determination of Death Act

"An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards. 1

PROCEDURE:

CRITERIA

I. Determination of a diagnosis or cause of coma:

A. Period of observation varies

1. Child 0-5 years of age

a) 72-98 hours

2. Child 5-12 years of age

a) 48 hours

3. 12 years to Adult

a) 24 hours

B. All causes of reversible coma must be ruled out, these include:

1. Presence of drugs

2. Metabolic abnormalities

3. Hypothermic states corrected or a decision made that the condition is irreversible. (Body temperature less than 32 Celsius)

II. Criteria for Diagnosis of Brain Death:

A. No respiratory movements occur when the patient is disconnected from the ventilator for long enough to insure that the arterial CO2 tension rises above the threshold for stimulation of respiration. The method for this determination is as follows:

The ventilator should be set to deliver 100% O₂ for at least 10 minutes before the apnea study. Prior to disconnection the patients PaCO₂ is greater than or equal to 36mm Hg and the pH is less than or equal to 7.44. After the ventilator is disconnected O₂ flow at 6L/min. is delivered via a + piece. Patient is then observed for respiratory movements. If spontaneous repetitive respiratory movements are observed or cardiovascular instability develops the patient shall be reconnected to the ventilator. The patient is considered apneic if there are no respiratory movements and the PaCO₂ is 60mm Hg or greater at the end of 3 minutes.

- B. Brain stem reflexes are absent, including pupillary, corneal, oculovestibular (doll's eyes or caloric), and respiratory.
 - C. Confirmation of clinical findings by EEG is desirable.
 - D. There is no spontaneous movement.
 - E. Systolic BP greater than or equal to 90 mm mercury (may be supported by pressors).
 - F. No response to the administration of 2 mg IV atropine (response is change in heart rate greater than 5 beats per minute).
- III. Exceptions to the above criteria of brain death:
Demonstration of intracerebral lesion by such diagnostic studies as CT scan, cerebral blood flow or MRI which is incompatible with life.
- IV. Pronouncement of Death:
- A. Brain death certification is equivalent to the pronouncement of death. The time documented for this certification is considered the time of patient death to be used for all legal matters including the Death Certification issued by the hospital.
 - B. The above criteria shall be documented on the chart of the patient by the attending physicians.
 - C. Agreement by two physicians that brain death has occurred should be documented on the progress notes.

- V. Discontinuation of Life Support:
 - A. A member of the Bioethics team will be consulted to complete a review of documentation prior to the discontinuation of life support.
 - B. Once agreement that brain death is documented, all life support mechanisms will be discontinued.
 - C. Signed family consent is not necessary for discontinuation. However, the patient's family must have full information concerning this certification process.

- REFERENCES:
- 1. Guidelines On the Termination of Life-Sustaining Treatment and The Care of the Dying, A Report by the Hastings Center. The Hastings Center, 1987.
 - 2. Ohio Revised Code, Section 2108.30 - 1982.
 - 3. President's Commission for the Study of Ethical Problems in Medicine & Bio-Medical & Behavioral Research, Deciding to Forego Life-Sustaining Treatment, Washington, D.C. 1983, U.S. Government Printing Office.
 - 4. AD Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death. A definition of Irreversible Coma, 205 JAMA 337-340 (1968)
 - 5. A report by the Task Force on Death and Dying of the Institute of Society, Ethics and the Life Sciences (The Hastings Center), Requirements for the Determination of Death: An Appraisal 221 JAMA 48-63 1972.

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