Organ donation after cardiac death

General information

Key concepts

● candidates: ventilator-dependent patients (typically with brain or spinal cord injury) where the family has decided to withdraw support and the medical team expects the patient would progress to asystole less than 60 minutes after withdrawal

● consent from legal next of kin for organ donation, heparin, and femoral lines

● clearance from medical examiner when applicable (usually, cases of unnatural death)

● counsel the family that the procedure cannot be done in ≈ 20% of cases. They are to be notified immediately if this happens and end-of-life care continues

● the transplant team cannot participate in end-of-life care or declaration of death, and should not be in O.R. until after cardiac death is declared

Candidates for organ donation after cardiac death are typically ventilator-dependent patients with brain or spinal cord injuries who are so near death that further treatment is futile, but who do not meet brain death criteria. Organs typically recovered in this manner: kidneys, liver, pancreas, lungs, and, rarely, the heart [1)]

Ethical concerns related to DCD organ recovery have been raised [2)].

The Institute of Medicine has reviewed DCD twice (1997 and 2000) and determined DCD to be ethically sound and OPO's have been encouraged to pursue DCD donation [3)].

Consent

Prior to any discussion of donation, the family should have made their decision to withdraw support and allow the patient to progress to death. After the family has had this discussion with the treating physician, the OPO can discuss DCD with the legal next of kin. Consent must also be obtained for any donation-related procedures prior to death (which typically includes heparin infusion to prolong organ viability [4)] and the possibility of femoral catheters). The discussion should also include the process to return to ICU if the patient does not progress to asystole. Clearance from the medical examiner must be obtained in applicable cases (including deaths due to accident, homicide, suicide...).

Procedure

Life-sustaining measures are discontinued (typically consisting of extubation) usually in the operating room. Death is pronounced typically ≈ 2 to 5 minutes after cardiac activity becomes insufficient to

generate a pulse because limited data indicates that circulation will not spontaneously return (NB: EKG activity does not need to cease). After the declaration of death, cold perfusion of organs is performed and they are procured. To avoid potential conflicts of interest, no member of the transplant team can participate in end-of-life care or the declaration of death.

About 20% of the time, the progression to cardiac death does not occur in a timeframe that permits organ retrieval. In these cases, organ donation is canceled, the family must be immediately notified, and end-of-life care continues.

1)
Steinbrook R. Organ donation after cardiac death. N Engl J Med. 2007; 357:209–213
2)
DuBois JM, DeVita M. Donation after cardiac death in the United States: how to move forward. Crit Care Med. 2006; 34:3045–3047
3)
Committee on Non-Heart-Beating Transplantation II, Division of Health Care Services - Institute of Medicine. Non-Heart-Beating Organ Transplantation: Practice and Protocols. Washington, D.C.: National Academy Press; 2000
4)
Bernat JL, D'Alessandro A M, Port FK, et al. Report of a National Conference on Donation after cardiac death. Am J Transplant. 2006; 6:281–291