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The Ethics of Uncontrolled Organ Donation: Uncontrolled Donation after Circulatory

Determination of Death is Ethically Problematic

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In a typical Uncontrolled Donation After Circulatory Determination of Death (DCDD) case, a patient is brought to the Emergency Department suffering a cardiac arrest, and all resuscitation techniques are initiated in order to save the individual's life. When resuscitation fails, death is declared using the circulatory criterion and the Organ Procurement Organization (OPO) is notified. Donor status is then confirmed via a registry, and a 2-5 minute no-touch interval elapses to be sure that the patient will not auto resuscitate (AR). After these criteria are met organs are procured as rapidly as possible. In some cases extra corporeal membrane oxygenation (ECMO) is used to restart circulation in order to protect organs from ischaemic injury and enhance post transplant viability.

See Also: [The Ethics of Uncontrolled Organ Donation: Uncontrolled Organ Donation is Ethically Neutral](#)

Once circulation stops the shortest time period from a declaration of death to procurement is required to avoid damage to the organs. The primary question is: can we rely on the circulatory criterion alone to determine death when the need for speed is paramount, and still maintain the integrity of the dead donor rule (DDR)?

I argue that Uncontrolled DCDD donors may not be dead - yet. First, AR hasn't been sufficiently studied in this patient population to conclude that it won't occur during the 2-5 minute no-touch interval. Second, cessation of circulation prognosticates death, but it is not sufficient to diagnose death without a neurologic exam in this context. Third, and most troubling, is the use of ECMO in these donors, which restarts circulation thereby nullifying the criterion of death it relied on to determine death in the first place.

AR occurs when circulation spontaneously returns after a period of circulatory arrest. Removing organs during the time in which AR is possible would mean circulation had not been irreversibly lost and the patient may have been dying, but was not dead. Removal of organs during this time would be a clear violation of the DDR and akin to murder. AR is a poorly understood phenomenon that is more likely to occur after resuscitation has been initiated, making this a particular concern for Uncontrolled DCDD. It has been hypothesised that AR may occur as a delayed response to the medications given during Advanced Cardiac Life Support protocols.

The literature on AR is sparse and consists primarily of case reports. A 2010 study indicates that the variability of AR, which has occurred up to 33 minutes after cessation of CPR, means that prospective studies are needed before any specific time interval can be endorsed (Hornby et al. 2010). Given the lack of data, the no-touch period of 2-5 minutes following cessation of CPR would likely be insufficient to rule out this phenomenon, which means that the patient may be dying but is not yet dead.

Another serious objection to Uncontrolled DCDD is that it relies solely on the circulatory criterion to determine death without regard for neurologic status. Heart and lung function are relevant only in that their prolonged absence will lead to a dead brain. Only total brain failure is both necessary and sufficient to determine death. Cessation of circulation is sufficient (but not necessary) for death to be declared. This demonstrates that it is brain function, not circulation itself that distinguishes life from death, since continued circulation does not obviate a determination of death but continued neurologic function clearly does.

Further, one might wonder why clinicians would ever bother to start resuscitation on a patient if the absence of circulation makes one instantly dead. There is a continuum on which one can be dying versus dead. DCDD claims to be able to locate an exact moment of death, a disingenuous claim at best and potentially lethal at worst.

Proponents of DCDD will point out that according to the Uniform Determination of Death Act (UDDA) (National Conference of Commissioners on Uniform State Laws 1980) death can be declared using either circulatory or neurologic criteria. However, the UDDA was established over 30 years ago when bifurcating death for the purposes of expediting organ transplants was not considered. Nonetheless, supporters of Uncontrolled DCDD who appeal to this argument will have to either conclude that a person is irreversibly dead 2-5 minutes after circulation has ceased (despite the overwhelming data on resuscitation that shows otherwise), or accept that death can be declared even if the brain may still be functional.

Finally, and most pernicious, is the use of ECMO in these patients. In order to avoid cardiac or brain perfusion, a balloon catheter to occlude the thoracic aorta is used (Magliocca et al. 2005). This practice indicates that the transplant team clearly understands that circulation has not been irreversibly lost and that brain perfusion and subsequent reanimation is possible, again reinforcing the problem that such patients are dying but not dead. If circulation is restored, the patient, by definition, has not irreversibly lost circulatory function and could only legitimately be pronounced dead using neurological criteria. The only time circulation can continue and death can be declared is when the patient is determined dead on neurologic criteria.

In conclusion, Uncontrolled DCDD is ethically and medically specious for three reasons:

1. The prospect of AR has not been sufficiently studied to determine that it will not occur in this population of patients, which means dying patients may be mistaken for dead patients;
2. It relies solely on the circulatory criterion, independent of brain status to declare death;
3. By restarting circulation but preventing brain perfusion, it contravenes the criterion used to determine death and clearly acknowledges that brain function may not have been irreversibly lost.

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