13th World Congress of Anaesthesiologists
Paris, April 18-23, 2004

"Not only is she really dead, she's really most sincerely dead."
(Munchkin Coroner in the Wizard of Oz, after examining the Wicked Witch of the East)

The Problem of "Near-Complete" Brain Death: How Current Brain Death Policy is Flawed

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Brain death is a modern clinical concept that is central to organ transplantation in that most transplanted organs come from patients who have been declared to be brain dead. In a typical clinical scenario, a patient receives a massive injury to his or her brain (for example, from a burst cerebral aneurysm) and ends up in an intensive care unit. If the patient is found to be brain dead, the patient's relatives are approached regarding possible organ donation. We are concerned with the problem of what should be done if the formal brain death criteria are met only imperfectly, such as where all the criteria for brain death are met save one ("incomplete brain death"). An example is the patient who meets all the criteria for brain death except still has an intact gag reflex. We make the case that, while the notion of brain death is well accepted in the Western world, there are a number of difficulties with the actual diagnosis of brain death as it is currently carried out clinically. It is concluded that the notion of brain death in widespread clinical use may be fundamentally flawed.

The current management of the patient with incomplete brain death who has no chance of survival is problematic. One approach is to continue to intervene medically, using all available resources, hoping against hope that some miraculous recovery might occur. This suffers from a number of drawbacks. First, in the real clinical world miraculous recoveries simply do not occur following massive structural brain damage involving the entire brain stem. Secondly, in a setting of limited resources this approach is very wasteful; these patients end up getting very expensive and complex care that serves them or their loved ones little or no benefit. A third drawback of this approach is that it merely prolongs the patient's death. In essence, medical interventions in this setting are futile with respect to patient recovery.

As a consequence, once the hopelessness of the situation is established in patients with incomplete brain death, in the actual clinical world such patients are usually withdrawn from life support, and cardiorespiratory arrest follows inevitably some time later. Tragically, in this setting the organs can almost never be used for transplantation, as they must usually be harvested prior to collapse of the circulation. Thus the organs "go to waste," even when the patient has signed an organ donor card and even when the family is enthusiastically in favor of organ donation.

Such problems arise since the patient has not met the formal criteria for brain death. Yet brain death criteria have varied over time and still vary between nations. Furthermore, the usual testing protocols used do not establish that the entire brain has died, as neuroendocrine function is not fully tested. (Many "brain dead" individuals still secrete arginine vasopressin (DDAVP)).

We conclude that since patients with incomplete brain death from massive injury cannot recover and will die, honoring their prior wishes to be organ donors becomes feasible only if a consciousness based criteria for declaring death is used. This would allow people in persistent vegetative states to be organ donors.

DOWNLOAD the full draft manuscript at http://braindeathcritique.homestead.com