Should brain death be recognised as a clinical end point of care ?

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The concept of brain death

In ancient times, before the realisation of the importance of the action of the heart and circulation of blood, a person was deemed to have died when he stopped breathing. The reflecting surface of a mirror was held before the face of the sick person. Death was diagnosed when the mirror was not fogged by water vapour present in the breath. Later, irreversible cessation of respiration and of the action of the heart were established as the criteria for the diagnosis of death.

In the middle of this century, attention was turned to the brain, which required much more energy than other organs. If its needs were not met for four minutes or more, irreversible damage to it followed. After a variable interval, the other organs failed and the person died. In the interim, there was a dead brain in a dying body.

The term 'brain death' was introduced in 1965 during a report of renal transplantation from a heart-beating, seemingly brain-dead donor. Following the path-breaking paper by the ad hoc committee of the Harvard Medical School and international debate on it, the concept of 'brain death' gained general acceptance.

The development of the science of organ transplantation and the availability of drugs that prevented rejection of transplanted organs by the recipient's body made the concept of brain death attractive. Given that once the brain is dead, death of the rest of the person within hours or days is inevitable, should we not use organs from this person to save other lives? International debates were followed by acceptance of this proposition. This has enabled transplant units save innumerable lives that would otherwise have been lost.

The law in India

Unlike the United States of America, India follows the British lead and has chosen irreversible damage of the brain-stem as being diagnostic of death. The Transplantation of Human Organs Act, 1994 (Central Act 42 of 1994), lays down the definition of death thus: 'Deceased person' means a person in whom permanent disappearance of all evidence of life occurs, by reason of brain-stem death or in a cardio-pulmonary sense at any time after live birth has taken place. It goes on to state that 'brain-stem death' means the stage at which all functions of the brain stem have permanently and irreversibly ceased.

Once brain-stem death has been diagnosed by an authorised committee using specified criteria, the dead person's organs can be removed for transplantation provided legally valid consent for this is available.

Stopping treatment after brain death

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Traditionally, once there is permanent cessation of breathing and the action of the heart, all treatment is stopped. Under the Transplantation of Human Organs Act, 1994, it stands to reason that once brain death has been diagnosed, there is nothing to be gained by continuing any treatment. The only rational reason for continuing treatment after the diagnosis of brain death – use of the ventilator, drugs to prop up the blood pressure, antibiotics and intravenous fluids – is to provide time for the transplant teams to get their patients in and ready themselves for the operations to remove organs from the dead to the living.

However, as Mr Bumble observed in Dickens' *Oliver Twist*, at times 'the law is an ass, an idiot'.

Our present dilemma

Should we stop all care once the patient is brain dead?

As Lance Stell points out, to many laypersons (and to some medical professionals too, unfortunately), the term 'brain death' suggests that there is more than one kind of death ('brain death' and 'cardio-respiratory death'), or that there is more than one way to be dead (in a brain-sort-of-way and in a heart-sort-of-way), or that there are degrees of being dead ('brain-dead' and 'really dead' or 'dead-dead'), or that one might die more than once (first, when one's brain dies and again later when one's heart stops).

He narrates an experience that most of us have also encountered again and again. "Recently, I consulted on a case in which an ICU patient's attending physician, an experienced nephrologist, said the following to her patient's family: 'I am sorry to tell you that your daughter is *brain dead*. I will keep her on life-support for a while longer, I will even order her dialysed again, if you wish...at least until you decide what you want to do.' Not surprisingly, the patient's father asked, 'What are her chances of recovery, doctor?'

"Needless misunderstanding had complicated a tragedy. Since the patient had been diagnosed 'dead' by medically accepted neurological criteria, it was no longer appropriate to refer to the medical equipment attached to her as 'life support.' Nor should the attending physician have offered dialysis. After several hours, the confusion was resolved. All interventions were withdrawn. The patient was pronounced dead (when her heart stopped!)."

This dilemma prompted the organisers **of this conference** to put up the present topic for discussion. It stems from three deficiencies in the Transplantation of Human Organs Act:

Our legislators erroneously included the definition of brain death in an act intended to regulate organ transplantation.

Whilst defining brain death, they specified 'by reason of brain-stem death or in a cardio-pulmonary sense' thus leaving ambiguity in many minds.

It has not been specified that 'brain death' equals 'death'

for all purposes.

As noted above, it stands to reason that if I can remove heart, lungs, liver and kidneys from a brain dead person for transplantation into other living individuals, I should also stop all medical care if such a person is not a candidate for the donation of organs for any reason whatsoever.

I find hospital administrators unwilling to permit such a step. They continue to hold fast to the old 'cardio-pulmonary' criterion for the diagnosis of death when the brain dead person is not a candidate for donating organs.

This has several harmful consequences. The agony of relations is prolonged for days, weeks or even up to six months till the heart finally comes to a permanent halt and the oscilloscope shows a continuous flat line instead of the P-Q-R-S-T squiggles. In many instances, the family undergoes the severely traumatic experience of seeking opinion after opinion from several consultants in the hope that someone will tell them that further treatment is likely to prove fruitful. The family continues to pay huge sums of money for 'intensive care' of a dead person. A bed in the intensive care unit is locked up by a dead person. Finally, doctors and nurses carry out the charade of caring for a person who is dead and spend time on the corpse that could be spent more fruitfully on other salvageable patients.

Some ways out under the present law

Dr M K Mani, senior nephrologist at the Apollo Hospital in Chennai, has a clearly laid down policy. Once a person is deemed to be brain dead, the relatives are called in and the diagnosis and its implications are clearly explained to them. After confirming that they have understood what has been told, they are asked to decide on the further course of action – donation of organs or stoppage of all treatment. Should they opt for the latter, the legal next-of-kin are requested to put this decision down on the case paper and sign the document. All treatment is now discontinued and the body is handed over to them. If, however, the family chooses to continue care in the intensive care unit till breathing and the action of the heart come to a permanent halt, this is honoured.

A senior consultant in Pune informed delegates attending the annual conference of this Society in that city some time ago that he proceeds along the same lines as Dr Mani but takes the additional step of asking the relatives to switch off the ventilator and stop the intravenous fluids.

These are unsatisfactory measures in that they do not have the clear sanction of the law. Mr. Bumble's observation and the law enunciated by U S Air Force Captain Edward A Murphy Jr ('If anything can go wrong, it will.') may yet lead to the prosecution of a doctor by misguided relatives of a brain dead person. We have been assured by senior judges sitting on the bench and senior lawyers practising at the Supreme Court that should such a case be brought before a court, it will, almost certainly, be dismissed. Even so, the dread of seeing one's name in bold headlines - 'Doctor ABC accused of killing patient' - haunts many minds. Courts are heavily burdened and judgements often delayed by years. The appearance of the line - 'Doctor ABC found not guilty of murder' – as a footnote at the bottom of an obscure column years after the event will prove small compensation for the agony suffered by the doctor and his family.

The permanent solution to this sorry situation

We need a separate Act specifying the new definition of death.

This Act should provide details of neurological criteria for death to be used in making the diagnosis. The Act must state clearly that this definition supersedes the older definition of death 'in a cardio-pulmonary sense'.

Once diagnosis of death is made under the new definition, the patient is, for all intents and purposes, dead.

This Society is ideally placed in bringing about this much-needed change in our law.

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