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Trust and Reality of Clinical Death and Life Support until Brain Death

M.S. Siddiqui*
Professor, Department of Business Administration, Daffodil Int'l University, Dhaka (Bangladesh)C.E.O., Bangla Chemical, 15, New, Baily Rd, Dhaka 1000, Bangladesh

Abstract

The nation is going through a mistrust and suspicion for timing of death. A determination of death must be made in accordance with accepted medical standards. The question of dispute is the timing of brain or biological death. The diagnosis of brain death has important medical, ethical and legal implications. The three essential findings in brain death are coma, absence of brain stem reflexes, and apnoea. The brain/biological death occurs four to six minutes after clinical death. A person can be clinically dead but can still exist with the help of artificial life support. Different countries have different guidelines or laws for brain death. The brain death criteria in some countries are left to the discretion of the physician; in others the criteria have been substantially expanded. The Organ Transplant and Donation Act, 1999 of Bangladesh defined brain death (sect 5). The clinical death and it implication should be clarified in any law. Government may consider the situation of mistrust between patient and clinic about timing of death and make a rule to over some the crisis. This is a time to identify the criteria, complexities and indications for declaring a patient to be brain dead and resolve the concerns of the public.

Keywords: *Brain death, biological death, clinically death, timing of death and artificial life support*

****Author for Correspondence*** E-mail: mssiddiqui2035@gmail.com

INTRODUCTION

The nation is going through a mistrust and suspicion for timing of death and keeping the patient in intensive care unit (ICU) at private clinics. There are some categories of death: brain death or biological death and clinically death. Patients are kept under life support which is a very expensive service and continued until biological death. The question of dispute is the timing of brain or biological death. A human is "clinically dead" and it was only later when his life support was taken off that the attending doctor pronounced him legally "dead". Declaration of brain death follows a certain set of examinations. The clinical diagnosis of brain death allows organ donation or withdrawal of support system. This is the bi-product of the increasingly successful resuscitation and life-support techniques which are generally available.

Brain Death or Biological Death

The diagnosis of brain death has important medical, ethical and legal implications. The ethical and religious considerations have also been found to affect decisions regarding diagnosis of brain death. A determination of death must be made in accordance with accepted medical standards. The lack of awareness and misunderstanding on many issues regarding brain death must be resolved, like, persistent vegetative state (PVS) and differentiation between severe brain injury versus brain death.

A brain or biological dead person is dead, although his or her cardiopulmonary functioning may be artificially maintained for some time. According to *wikipedia.org*, clinical death is the medical term for cessation of blood circulation and breathing, the two necessary criteria to sustain life. This is what you call cardiopulmonary arrest, a period when a person's heartbeat and breathing stop but can still be revived if early medical attention is given. But the brain/biological death occurs four to six minutes after clinical death. These states of

irreversible cessation of cerebral and brain stem function; characterized by absence of electrical activity in the brain, blood flow to the brain, and brain function are determined by clinical assessment of responses.

Clinical Death

A Clinical Death occurs with (1) Stoppage of heart beat, pulse and breathing is called clinical death. (2) Most organs (eye, kidney) remain alive after clinical death and (3) These organs are used for transplantation. Clinical death is a condition of irrecoverable to life again. A biological Death is (1) The death caused by degeneration of tissues in brain and other part is called biological death (2) Most organs become dead after biological death. (3) These organs cannot be used for organ transplantation.

A person can be clinically dead but can still exist with the help of artificial life support. This is the best time to consider the option of organ donation. Technically, the patient is already dead, but the organs are still functioning [1]. Once the life support is taken off, the whole body will start to deteriorate and cease its functions permanently. Brain death, either of the whole brain or the brain stem, is used as a legal indicator of death in many jurisdictions [2].

Legal scenario of Brain death and Clinical Death across the World

The three essential findings in brain death are coma, absence of brainstem reflexes, and apnoea. An evaluation for brain death should be considered in patients who have suffered a massive, irreversible brain injury of identifiable cause. A patient determined to be brain dead is legally and clinically dead [1].

Brain death is worldwide accepted fact but no global consensus in diagnostic criteria. In some other jurisdiction, brain-death and its declaration - brain death is defined by the following criteria: two certifications are required 6 hours apart from doctors and two of these must be doctors nominated by the appropriate authority of the government with one of the two being an expert in the field of neurology.

The Bangladesh law has a definition of brain death for transplant of different organ for donation as per desire of the person. The Organ Transplant and Donation Act, 1999 defined brain death (sect 5), three specialists of neuromedicine and critical medicine having position of no less than Professor, Associate or Assistant Professor but at least including one Professor can declare a person of brain dead.

Different countries have different guidelines or laws for brain death. These laws or guidelines typically specify exclusion of confounders, irreversible coma, absent motor response to pain stimulus and the absence of all brainstem reflexes. Some specific confirmatory laboratory tests were often mandatory in Europe and Asia. In addition, confirmatory laboratory tests were commonly used to shorten the recommended observation time. Confirmatory tests were not required in many developing countries.

The brain death criteria in some countries are left to the discretion of the physician; in others the criteria have been substantially expanded. The Legal standards on organ transplantation were present in 55 out of 80 countries (69%). Practice guidelines for brain death for adults were present in 70 out of 80 countries (88%). In Bangladesh and some other countries, more than one physician was required to declare brain death in half of the practice guidelines. Differences were also found at the time of observation and required expertise of examining physicians.

The American Academy of Neurology (AAN) has defined brain death with three cardinal signs, cessation of the functions of the brain including the brainstem, coma or unresponsiveness and apnea. The Uniform Determination of Death Act, USA mandates irreversible cessation of all functions of the entire brain and brainstem. The law requires physicians to honor these requests and to continue medical care despite evidence of loss of brain function [2].

In 2000 the Canadian Neurocritical Care Group published Guidelines for the Diagnosis of Brain Death that closely mirror the American Academy of Neurology guidelines. There is uniform agreement in Europe

regarding the criteria for the clinical evaluation of brain death, although there is considerable variation in the use of additional physiologic tests. Half of the countries in Europe require more than one physician to be involved in the clinical determination.

All African countries were without legal provisions for organ transplantation, and brain death criteria were difficult to obtain. The exceptions are Tunisia and South Africa which had developed guidelines, but a very small sample of East and West African countries did not reveal presence of any practice guidelines [3].

A guideline for brain death for the Middle East countries were approved by the Pan-Islamic Council on Jurisprudence in Jordan in 1986 and in Mecca in 1988 has given a guideline for brain death in the Middle East countries.

India has passed the Transplantation of Human Organs Act, 1993 following the British criteria of determination of brain death but involves a panel consisting of the doctor in charge of the patient, the doctor in charge of the hospital where the patient was treated, an independent specialist with unspecified specialty, and a neurologist or neurosurgeon. The burden of proof rests with the specialist in the neurosciences, with the other member confirming the diagnosis.

China has no legal criteria for the determination of brain death. Hong Kong, now under Chinese control, has well-defined criteria that, as expected, closely reflect the UK criteria.

The clinical death and its implications should be clarified by the proposed law and incorporated in The Blind Relief (Donation of Eye) Act, 1975. They regulate donation of eyes so that the authority can collect cornea from the body of donor.

The understanding and knowledge of common citizen of the clinical and biological or brain death will create congenial atmosphere of donation of organs for treatment of other fellow relatives, near and dears.

Conclusion

Government may consider the situation of mistrust between patient and clinic about timing of death and make a rule to overcome the crisis. This is a time to identify the criteria, complexities and indications for declaring a patient to be brain dead and resolve the concerns of the public. There may be a direction for the determination of clinical death and brain or biological death to analyse process of clinical decision making regarding continuation of life support after brain death diagnosis. An independent expert team of doctors may be given the responsibility.

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