**DEATH: THE INEVITABLE HOUR OR A LIMIT OF MEDICAL SCIENCE? LEGAL & ETHICAL IMPLICATIONS OF CRYONICS IN THE BACKDROP OF *JS* v. *M AND FI***

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**Abstract**

The Article has as its backdrop the decision in *JS* v. *M and Fi ,* which allowed a petition of a 14 year old for cryogenic preservation. Cryonics is the deep freezing of a recently deceased for revival when cures for the ailment is known to the medical fraternity. This is a process which questions the very concept of ‘death’. The fundamental debate is whether death is a natural phenomenon which everyone, till now, acknowledges as the inevitable hour or is it a mere failure or limitation of medical science for the time being. Can death be suspended? The author attempts to explain the technique adopted in cryogenic preservation and also probes into the definition of death, precisely legal death. The legal and ethical repercussions of cryonics are explored into. The Article concludes with a note that the value of life can be expressed not in terms of the number of years lived but only in the quality of life lead.

**Introduction**

When ‘life’ begins has always been a debatable question because of the conflict whether life begins at conception or with ‘quickening’ or with birth only. Giving a precise definition to the term ‘life’ is not possible yet everyone craves to be alive and does whatever possible to prolong ‘life’. Though a controversy runs parallel to the above statement about the right to end life, the focus of the article is not pertaining to life but rather relating to death: when does death occur? Is death a natural phenomenon or perhaps the limit of medical science? Can death be postponed? The subject gained momentum recently because of the judgment delivered by Hon’ble Mr. Justice Peter Jackson in *JS* v. *M and* Fi (1) allowing the application of a 14 year old girl suffering from cancer for cryogenic preservation. Thus the judgment kept alive her hope to return to a functioning life once medical science wins over her ailment. The same has triggered the question as to the right to suspend death.

**Origins of Cryonic Preservation in Humans**

William Clark Russell, a popular American author cum explorer (1844-1911) was the first to visualize the idea of reviving a human being. In his novel ‘The Frozen Pirate’ in 1887 (2) he put forth the thought of reviving a person who was accidentally entombed in ice. In 1962, Robert C. W. Ettinger(3) spoke about the chance of physical immortality through suspending death(4) for resuscitating when cures are known to the world. In fact the possibility of making death a reversible process was explored. Thus came forth a visionary concept giving a second chance to live with renewed health and vitality known as ‘Cryonics.’ Etymologically the term is derived from the Greek word ‘*kryos*’ which means ‘cold’(5). Robert C. W. Ettinger, known as the ‘father of cryonics’, founded the Cryonic Institute in America(6).

The process involves the deep freezing of a recently deceased person to liquid nitrogen temperature, to keep his body intact for an indefinite period of time, immediately after legal death till medical science develops to revive such persons(7). This offers future doctors the best chances to bring him back to life.

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Cryogenics has been successfully done in case of human gametes and cryopreservation of humans is the extreme case and is the focus of a lot of debate not only about the underlying scientific theory but also about its ethical repercussions.

Also the cost involved for preserving the body in perpetuity is very high yet

the process has been done on few individuals since 1960. Dr. James Bedford, a 73 year old psychology professor was the first to be frozen at the Cryonics Society of California and his body was shifted to Alcor Life Extension Foundation in Arizona where he is still preserved(8).

**The Procedure**

Cryopreservation ideally begins within the first two minutes after the heart stops beating, before the brain dies(9), anyhow it should commence within 15 minutes of clinical death(10). This is to preserve brain viability and to prevent deterioration of tissues as a majority of body cells are still alive and also to control blood circulation. The patient is first placed in a bath full of ice mainly for lowering metabolism and arrangements are made to restore breathing and blood circulation artificially by a Heart-Lung Resuscitator(11). The patients are given medications to prevent brain damage, and anaesthetic to reduce oxygen consumption. Now a heart-lung machine takes the role of heart and lungs and blood is circulated by this machine. The temperature of the body is reduced to few degrees above freezing point of water and then blood is then drained from the body, and replaced with a preservation solution which supports life at low temperatures. Its concentration is increased slowly until the body is completely preserved. The solution prevents ice from forming within the body. This process is known as vitrification and helps in converting cells to crystalline free solid so that cells won’t burst(12). Throughout the process the body, brain, and vital organs are monitored to avoid damage. Finally, the patient is cooled to a temperature of -125° under fans circulating nitrogen gas as quickly as possible to prevent ice formation, and then the temperature decreases further until it reaches -196° over two weeks(13). Thus human bodies are preserved in liquid nitrogen which needs to be replenished on a regular basis. Similar experiments were conducted on animals right from 1950 to 2000s and up to 90% success was claimed (14). The current providers of cryonic suspension are Cryonics Institute and the Alcor Life Foundation both in USA. Statistics reveal about 300 cryogenically frozen individuals in the US, another 50 in Russia, and a few thousand prospective candidates all prepared to undergo the same (15).

The developments in the field of science and technology have, indeed, proved beneficial to human kind especially the breakthroughs in the field of medicine. But very often, they come in conflict with fundamental religious values, ethics and concepts like dignity, autonomy and privacy. In such circumstances, the validity of it should be tested on the touchstone of existing law, ethics and morals. The preservation of cells, tissues and gametes by freezing has gained acceptance while application of the same in human dead bodies is speculative. The legality and ethical aspect of this technique under discussion also needs to be studied and settled because a positive signal will lead to drastic changes to concept and definitions of death. At this juncture it is pertinent to understand what death is.

**Meaning of Death**

Death has been regarded as an inevitable hour or phenomena or the only certainty in human life. Death was considered as something beyond the control of human will but very essential for social construction (16). The religious texts also acknowledge death as the end of one’s life in this world or as parting of the soul from the body. The famous example of syllogistic reasoning also admits the mortality of man(17). Death is understood as the event by which the capacity to employ ‘vital processes’ is lost or the condition of having lost it (18). As far as the legal definition of death is concerned, the Uniform Determination of Death Act, 1981 approved by both American Medical Association and American Bar Association defines death as either the irreversible cessation of all circulatory and respiratory functions or of all functions of the entire brain (19). Or in other words, it refers to brain death. Brain death is a state of prolonged irreversible cessation of all brain activity, including lower brain stem function with the complete absence of voluntary movements, responses to stimuli, brain stem reflexes, and spontaneous respirations(20). Brain death implies that life support is futile and is the principal prerequisite for the donation of organs for transplantation(21). A patient determined to be brain dead is legally and clinically dead (22).Apart from legal death, four more kinds of death are well appreciated which includes clinical death, biological death, cellular death and religious death (23). Clinical death occurs when heart stops beating (24). Brain deathis defined as "irreversible unconsciousness with complete loss of brain function ," including the brain stem, although the heartbeat may continue (25). So ‘death’ can be concluded as an irreversible phenomenon by which all bodily functions come to a halt.

**Suspending Death: Ethical & Legal Implications**

Cryopreservation is ideally done immediately after heart stops but before brain dies and anyhow it should commence within 15 minutes of clinical death. Cryonic institutes claim that process begins after a person is *legally* declared as dead or in other terms after brain death but they also state that it is most ideally done before brain ceases it’s functioning. There itself ambiguity is there. So if cryopreservation commences just after clinical death before brain death happens, some sort of justification for the process can be sought. These institutes view death only as a limitation of present day medicines or medical technology but have to accept the label of ‘death’. To overcome this, they place a clause in their contracts that cryonics patients “donate their bodies as anatomical gifts for research”(26). In such a case if at all the patient revives again, then can he claim status as a legal person because he no longer has ownership over his body which is already donated (27). Leaving that apart, the question whether death can be avoided as such through the aid of cryofreezing is contentious. In this context, it is relevant to note philosopher Kierkegaard’s opinion on death:

“But for me, my dying is not at all a something in general;

May be for others my dying is a something in general”(28)

Death is often read of as a news matter but when it comes to one’s own case, the same is not taken very lightly. It doesn’t matter whether you are old or diseased, everyone clings on to the pains and pleasures of this world that death is something to be avoided if at all there is any possibility.

Suspended death refers to the condition of a biologically dead body which has been frozen and stored at a very low temperature, so that degeneration is seized. The body is dead and cannot be revived by presently available techniques of medicine, yet at the same cannot be considered as “very dead”(29). This offers a chance for survival once the medical science finds out a cure for the ailment. Can this chance be availed as of right? Can death, a natural event, be triumphed over by a ‘chance’ for survival?

Apart from the practical difficulties involved in terms of the massive cost of storage, the fact that no successful story has yet been reported and that if at all it is successful at some point of time in future, the person who overcame death may be placed in an entirely different situation where none of his dear and near ones are alive or the world may have so drastically changed that he cannot cope up with the new state of affairs(30), a lot of ethical and legal questions needs to be addressed before going forward with this procedure. If death is an hour decided by the Almighty, can humans bypass His will for reviving the person in future is the religious concern. By virtue of the fundamental right to life, every person is entitled to a quality life which is consistent with his personality and dignity. Merely being alive is not what matters. Changes in social and personal identity may lead to a life which is not worth living. Is it fair enough to place a person in an alien situation just to make him live again? He should be having the circumstances wherein he can survive and develop. In this sense, the concept is against the very right to life.

**Laws of nature**

The laws of nature can be considered as the statements of uniformities and regularities in the world or as the principles that govern the natural phenomena (31). Birth and death are the realities of life and till now death is regarded as unavoidable. But there is a counter to this view point that “few if any patients pronounced dead by today’s physicians are in fact truly dead by any scientifically rigorous criteria” (32) Just because present day medicines are not able to survive a dying patient, can we consider him as legally dead when there is a chance of future breakthroughs in medical science to win over his ailment? Can the laws of nature be disregarded? Is not regarding him as dead and withdrawing supporting systems and treatment tantamount to murder? But for the sake of a chance of survival can everyone claim cryogenic preservation as of right? These conflicting questions need to be addressed before we move forward to give a green signal to cryonic preservation. Considering the practical implications of rendering an assertive note to this technique of overriding death, the author thinks it inappropriate to give the same as of right. The technique is not yet successful and if at all it is successful, the same will lead to crucial issues like addressing the immortality of humans, the cost involved and more importantly the identity crisis (33) when the preserved human opens his eye to an entirely different world.

**Conclusion**

Doctors do have a duty to do everything possible to preserve the life of their patients but should that mean the doctor should go beyond the techniques that are known then and take the ‘chance’ of discovering a new cure sometime in future? What if no such cure arises? Should autonomy over ones’ body extend after death? Cryonics till now is an unsuccessful technology. Cryogenic preservation is not covered by Human Tissue Act, 2004. Before allowing practice of such unchecked technology, there essentially should be open discussions and deliberations analysing the ethical, moral, biological and legal repercussions. And some form of law or guidelines should be there governing the matter if this is to be permitted.

The value of life can be better understood when death stands as a reality. Immortality is useless as reveals the story (34) of Trojan prince Tithonus who was in love with the Goddess of dawn, Eos, who begged Zeus, the king of ancient Greek Gods, to grant him immortality. But she forgets to ask for eternal youth and eventually Tithonus becomes incapacitated and demented that he begs Eos for death! Apparently Eos turns him into a grasshopper who hopes desperately that death would come to him also. The story categorically indicates the futility of having an eternal worldly life. Being immortal is not the real virtue but to live a life worth remembering will make one immortal in the hearts of men. Before granting permission to cryogenic preservation the impact should have been better explored as this is not an issue addressing an individual but has application in general. The decision in *JS* v. *M and Fi* should not be a precedent even in situations which demand an urgent decision when the policy concern over the matter is vague and unsettled.

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Suspended death refers to the condition of a biologically dead body which has been frozen and stored at a very low temperature, so that degeneration is arrested and not progressive. The body cannot be revived by present methods, but the condition of most of the cells may not differ too greatly from that in life. See *Supra* n.3

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*Supra* n. 5 p.251

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*Ibid.*

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All men are mortal

Socrates is a man

Socrates is mortal

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See s.1, Uniform Determination of Death Act, 1981

*Aruna Ramchandra Shanbaug* v. *Union of India & Ors* (2011)4 SCC 454

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*Ibid.*

*Supra* n.3; A patient is ‘clinically dead’ upon the cessation of heartbeat and breathing. ‘Biological death’ has a different meaning; resuscitation is impossible by any known means currently. ‘Cellular death’ is the degeneration of bodily cells-as provided in Rebekah Cron , ‘Is Cryonics an Ethical Means of Life Extension?’ University of Exeter 2014, available at https://philpapers.org/archive/CROICA-2.pdf

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