

any of his organs being used for therapeutic purposes after death. The competent authority under this Act is not clearly defined. The authority seems to have been vested in the autopsy surgeon who is in lawful possession of the dead body for postmortem examination (16).

The All India Institute of Medical Sciences, New Delhi, has framed guidelines to carry out the retrieval of organs in medicolegal cases without violating any of the procedures prescribed under the law. The advantage of these guidelines is that the procedure does not hamper the functioning of the investigating officer, the autopsy surgeon or the courts of law (16). However, these guidelines are formed for organ retrieval in brain-stem death cases. Similar, uniform guidelines are needed for an NHBD programme. The presence of such guidelines will help retrieve organs from medicolegal cases after observing legal procedures and without violating existing laws.

Conclusion

In conclusion, it can be stated that non-heart-beating donors can to some extent help meet the increasing demand for organs for transplantation purposes. In order to implement such a programme in India, a comprehensive discussion should be had to address the ethical, medical and legal issues involved therein and arrive at a clear policy. An NHBD programme should be implemented on a need basis and not on a demand and supply basis; in the medical field, especially when organs are being retrieved, the programme should be implemented for the benefit of the patient according to need and priority.

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Are we ready for non-heart-beating organ donation in India?

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With the success of organ transplantation as an effective modality of treating end stage disease of various organs, increasing numbers of organ transplants are being performed all over the world. However, this procedure requires a "donor" pool of either "living" or "cadaveric" donors. Since this pool is limited, the gap between "demand" and supply is widening. In the context of organ donation "cadaveric" donation has largely meant "brain dead" or "heart beating" donors. In the last four decades, the concept of "brain death" – a state in which the brain is irreversibly damaged but the heart is beating – has been legalised and accepted in many countries of the world. However, in spite of the legal sanction as well as sustained campaigning, the number of such donors is limited.

In an effort to increase the donor pool, other strategies are now being implemented. The first area involved improving the consent rate for brain dead donors. This includes "donor cards" which citizens sign and keep during their lifetimes; "required request" where it is mandatory for a doctor to ask the relatives of a brain dead patient about organ donation, and, in some countries, "presumed consent" which grants authority to doctors to remove organs from brain dead individuals whenever usable organs are available, in the absence of objection from the deceased in his or her lifetime, or the family members. The ethical and social dimensions of presumed consent have recently been discussed in the pages of this journal (1, 2).

In this issue Bardale (3) discusses the relevance of a different type of cadaveric donor, the “non heart beating donor” (NHBD), otherwise called “donation after cardiac death” (DCD). As opposed to the brain dead donor, whose brain is irreversibly damaged but whose heart is beating and hence circulation is intact, these are donors whose heart has ceased to beat and hence circulation has ceased. It is obvious therefore that in this group of donors the organs need to be removed instantly for the organs to be viable for the purpose of transplantation.

It is interesting to note that historically some of the earliest attempts at solid organ transplantation were made from such donors. The first human kidney, liver and heart transplants, in 1958, 1963 and 1967, respectively, were performed using organs from non heart beating donors as at that time the declaration of death required heartbeat cessation. However, since techniques to keep the organs viable were not developed at that time, the results of these early transplants were poor, largely due to ischaemic damage to the organs. With legislation recognising brain death being adopted in many countries, the focus then shifted to using organs from brain dead or heart beating cadavers wherein the procedure to remove organs became a controlled one with much higher rates of success.

In the mid 1990s there was a resurgence of interest in using organs from NHBDs. Institutions in the US reported the use of these donors for kidney and liver transplants with good results (4). Soon this form of organ procurement gained increasing acceptance and in 1995 the Maastricht classification of NHBDs was put forward (5).

Over the last decade this form of organ donation has slowly gained wider acceptance. However, with its wider application, it has brought up a large number of complex ethical dilemmas. Bardale covers the various ethical and legal issues thrown up in this field. Although many of them are briefly mentioned, it would be obvious to the reader that these are sensitive and complicated areas dealing essentially with the end of life. Therefore the implementation of such programmes in a scenario such as India's will need on one hand social and cultural acceptance and on the other substantive regulatory mechanisms. Also it needs the presence of trained medical teams who can conduct almost instantaneous removal of organs in a planned manner.

When the Human Organs Transplant Act was passed by the Indian Parliament in 1994, it had a dual purpose. Besides banning the trade in organs, it legalised brain death, making the removal of organs from brain dead cadavers permissible after consent from the family. The last 15 years after the passage of the law have seen some sporadic activity in cadaveric donation. What has been heartening, however, is the response of potential donor families. In the hospital in Mumbai where I work, the consent rate is around 40 to 50%. This is on par with developed countries. The recent experiences of armed forces medical institutions and institutions in Chennai are similar. It seems that if an institution makes an effort to promote organ donation, and if ICU personnel make an effort to identify brain dead donors, the consent rate amongst the Indian population is good.

There is no reason to believe that families who consent to organ donation after brain death will not do so after cardiac arrest. In fact it is easier to understand and accept the concept of cardiac death. As a surgeon involved in cadaveric organ donation and liver transplantation, and hence regularly seeing patients dying on the waiting list, it is indeed tempting to consider starting an NHBD programme. The scientific and legal base for it has been prepared in the rest of the world.

However, as Bardale points out, this field is a quagmire of complex moral, social, ethical and legal issues. The critical question therefore is: are we ready for it in India?

Two issues flagged in the discussion on presumed consent bear repetition; do we have the ability to monitor the implementation of such a system in a completely unregulated market of healthcare? And, whilst trying to achieve an increase in organ availability, are we also looking at making transplantation more accessible and equitable?

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