

Brief Communication

Brain death and organ donation in India, where do we stand? *A personal experience*

Pralaya K. Nayak, MS, Mch, Ashok K. Mahapatra, MS, Mch.

Donate an organ and save a life, is probably the duty of everyone. The first successful heart transplant in India was carried out in the All India Institutes of Medical Sciences (AIIMS), New Delhi, India on 3rd August 1994.¹ Surprisingly, little efforts have been made in the past to procure organs from the brain dead and utilize these for transplant programs. The needy patients are deprived of organ transplants. Due to the non-availability of organs, the growing need for organ donation poses a great problem.

This study was carried out in the AIIMS, New Delhi, India over a one-year period from August 2002 to the end of July 2003. The ethical committee approved the study. Brain death implies complete, irreversible cessation of activity of the brain sparing the other vital organs to function. In patients admitted to the Department of Neurosurgery who subsequently became brain dead, the brain stem reflexes were recorded twice, 6 hours apart. We continued mechanical ventilation and life supporting medications. The criteria for brain death were taken into consideration by a fixed protocol, as prescribed by the Transplantation of Human Organs Act 1994.¹ The absence of brain stem reflexes like, papillary reflexes, no doll's eye movements, corneal reflexes, and cold caloric test, along with absent cough reflexes were repeatedly confirmed. No spontaneous respiration on apnea test (PCO₂ level 60 mm Hg), on disconnecting the ventilator for 6 minutes was carried out in each patient. None of our patients had systemic illness, and all were healthy prior to suffering brain death. Maximum efforts were made to convince and motivate the next of kin of the patients suitable for donation. Final counseling and further arrangements were organized by the Organ Retrieval and Banking Organization situated in the AIIMS. To proceed further, permission was obtained from the organ donation committee.

Until 2004, 21 patients from our department were mobilized for organ transplantation over 10 years since 1994. The patient profile includes 17 head injuries, 2 aneurysms, one intracranial hematoma and one GBM (Table 1). The age range was between 20-38 years. Surprisingly, no brain dead patients from other departments were mobilized for organ donation during the study period. We provided 8 patients over a period of one year during the study period. Eight heart transplants were carried out in the cardiac surgery department of AIIMS, and other organs were distributed according to the need of various departments of our Institute and other hospitals of Delhi.

The ethical issue concerned with organ donation is that Indian law does not recognize brain death. Death is defined in section 46 of the Indian penal code, the Registration of Birth and Death Act 1969, as death of a human being is permanent disappearance of all evidence of life at any time after live birth has taken place, which means death of the beating heart. In the past, various administrative bodies of government had made efforts to lay down some clauses in legislation to facilitate organ donation in India. Brain death is diagnosed if there is irreversible loss of consciousness, absence of brainstem reflexes and apnea. Care and diligence in the application of the criteria for brain death provide important safeguards for individual patients and the community in general.

The problems are usually faced because brain death has little impact on the mind of common people. This is the result of lack of education and awareness of brain death and organ donation.² In developing countries, like India, lack of financial compensation to the next kin is a great influencing factor in organ donation. Financial compensation has increased the rate of cadaveric donation in Taiwan and the Philippines, although the extent of the increase is not known.³ Financial transactions are not correct legally and ethically. Cremation of the intact dead body is a common practice in India due to religious practice. Similar deference was noted in other countries where such grounds are taken into consideration. In addition to awareness, religion may influence organ donation.² It is indeed very pain staking, while motivating the near and dear one of the patient dying in an unusual condition. The emotional contact with the grieving family, time, and dedicated effort is essential to explain what brain death is and what the ultimate outcome is. It is also important to highlight how organ donation from a dying person can change the life of another suffering person and their family.

Table 1 - Patients profile of organ transplant.

Diagnosis	Donor profile		Recipient profile	
	No. of patients	Organs	No. of transplants	
Head injury	17	Heart	18	
Subarachnoid hemorrhage	2	Kidney	40	
Intracerebral hemorrhage	1	Liver	7	
GBM	1	Pancreas	1	

GBM - glioblastoma multiforme

Health care providers can influence the willingness to donate, or motivate organ donor cards. Currently it is unclear how the educated people and health care professionals in the future are going to react to organ donation, and their attitude can be molded toward this issue.⁴ Mass media and social education is necessary to motivate more people to carry organ donation cards. The medium with greatest impact on the population is television. The second factor is the press and radio, the third is magazines and talks with friends/family, the fourth is hoardings and posters, and campaigns on organ donation, and the last factor is information given by health professionals.⁵

Higher medical education is associated with greater knowledge of, and a more positive attitude toward organ donation. Health care professionals with a higher education level are more likely to hold an organ donor card and also feel more comfortable in approaching relatives of potential organ donors as compared to medical doctors. Educating health care professionals on the organ donation process appears to be an important factor in maximizing the benefits from the limited organs.⁴ Although there are some legal and technical difficulties, there is ongoing public awareness as well as increased involvement and leadership by all health care professionals. It is critical to understand the need for successful organ donation. Cooperation between various medical disciplines and education programs are mandatory for hospital staffs.

In conclusion, we share our personal experience in dealing with organ donation. Much effort and

dedication are required to have any success in this field. Revision of some part of acts and ethics involved in organ donation, along with financial support to the next of kin will definitely help in increasing the organ donation rate in India and elsewhere.

Received 20th March 2008. Accepted 22nd July 2008.

Department of Neurosurgery, All India Institute of Medical Sciences, New Delhi, India. Address correspondence and reprint requests to: Dr. Pralaya K. Nayak, B-6/6, Chandrama apt., Kharvel Nagar, Bhubaneswar 751001, India. Tel. +986 1251219. E-mail: drmichaelpn@rediffmail.com

References

1. Shroff S, Navin S, Abraham G, Rajan PS, Suresh S, Rao S, et al. Cadaver organ donation and transplantation-an Indian perspective. *Transplant Proc* 2003; 35: 15-17.
2. Dutra MM, Bonfim TA, Pereira IS, Figueiredo IC, Dutra AM, Lopes AA. Knowledge about transplantation and attitudes toward organ donation: a survey among medical students in northeast Brazil. *Transplant Proc* 2004; 36: 818-820.
3. Sade RM, Kay N, Pitzer S, Drake P, Baliga P, Haines S. Increasing organ donation: a successful new concept. *Transplantation* 2002; 74: 1142-1146.
4. Schaeffner ES, Windisch W, Freidel K, Breitenfeldt K, Winkelmayr WC. Knowledge and attitude regarding organ donation among medical students and physicians. *Transplantation* 2004; 77: 1714-1718.
5. Conesa C, Ríos Zambudio A, Ramírez P, Canteras M, Rodríguez MM, Parrilla P. Influence of different sources of information on attitude toward organ donation: a factor analysis. *Transplant Proc* 2004; 36: 1245-1248.

Do you have any comments or questions? Agree or disagree with published articles?

The correspondence section within the journal is a forum to comment on any of the articles published in the journal. Correspondence will not be sent for peer review, and will only be edited for the use of appropriate language. All correspondence should be submitted and published within 6 months from the date of the original publication.

Please submit your correspondence through the journal website (www.neurosciencesjournal.org), and don't forget to clearly state the title of the original publication, and your contact details.