

Organ Donation & Transplantation from deceased donors in India – An Overview

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ABSTRACT

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Transplantation over the past few decades has gradually become the accepted treatment for a number of conditions where organs like the kidneys, heart, lungs and liver have irreversibly failed. For a patient with kidney failure an alternative such as dialysis is available till an organ becomes available, but for a patient with liver, heart or lung failure the only hope of living may be to have an immediate transplant. Are we doing enough to help these critically ill patients whose numbers are constantly on the increase? What is the current status of different transplants in India and what are we doing to help these patients?

In 2013, the national deceased donation rate was 0.26 per million population per year (313 donors) compared to 0.16 per million population in 2012.^{3,4}

Tamil Nadu leads the way in deceased organ donation. It had 131 deceased donors in 2013 and a total of 571 deceased donors from October 2008 till 31st December 2014. As a result 3138 organs and tissues have been transplanted in the state.

From 2000 to 2009, MOHAN Foundation, a registered not-for-profit organization, was responsible for initiating an organ sharing network (waiting list registry) in Tamil Nadu and Andhra Pradesh. Through this initiative 1033 organs and tissues were retrieved.

This web-based recipient waiting list registry has been adopted by Tamil Nadu (www.tnos.org) and Kerala (www.knos.org) and more recently by Rajasthan (www.rnos.org).

Keywords: Brain death, Organ donation, Registry

*See End Note for complete author details

INTRODUCTION

From the realms of mythology to the futuristic pages of sci-fi books, transplantation of organs from one human being to another has been written and debated about intensely. Transplantation over the past few decades has gradually become the accepted treatment for a number of conditions where organs like the kidneys, heart, lungs and liver have irreversibly failed. For a patient with kidney failure an alternative such as dialysis is available till an organ becomes available, but for a patient with liver, heart or lung failure the only hope of living may be to have an immediate transplant. Are we doing enough to help these critically ill patients whose numbers are constantly on the increase? What is the current status of different transplants in India and what are we doing to help these patients? Organ donation is a gracious act; it reaffirms our faith in humanity. For many years the organ donation process was marred in India due to the stigma attached to kidney donation. The law of the land prohibits any

commercial dealing in organs, but because the demand is so high, the law is difficult to implement and kidney scandals continue to haunt the country. The alternative is cadaver or deceased organ donation where organs have been donated and transplanted from patients who are brain dead.

Brain Death and Organ Donation

Brain death usually happens when there is internal brain hemorrhage and the expanding hematoma cuts off the blood supply to vital sections of the brain thus starving it of oxygen and glucose and leading to death. Bleeding can happen due to a spontaneous rupture of an aneurysmal artery within the brain or more commonly due to a severe head injury that occurs in a road traffic accident. The diagnosis of this condition is clinical and most doctors in intensive care units are familiar with the condition. A patient who is brain dead is in an irreversible state and is totally dependent on ventilators and has constant need for medications to keep the heart and circulation functioning. This condition was

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first recognized in an ICU in Paris and was called coma de passé.¹ Brain death is a very tragic situation since it mostly results from a road traffic accident involving a young person. One positive outcome can be organ donation. However, the emotional upheaval of death is very painful and accepting the notion of organ donation by the relatives can be very difficult.

Deceased organ donation in India

The Transplantation of Human Organs Act (THO Act) was passed in 1994. The purpose of this act was essentially threefold:

1. To regulate removal, storage and transplantation of human organs for therapeutic purposes
2. To stop commercial dealing in organs
3. Accepting Brain death as a definition of death

The recent amendment in the Act in 2011 has brought in the following provisions with the aim of enhancing deceased organ donations:²

1. Introduced the clause of ‘required request’ i.e. if there is brain death declared it will be compulsory to ask for organs
2. Enlarged the panel of doctors who can certify brain death and includes Anesthetists and Intensivists. Previously only neurology related specialists could certify brain death
3. Introduced the post of transplant coordinators in the hospitals that are licensed for transplantation surgery to improve donation activity and counsel families for organ donation

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Tamil Nadu leads the way in deceased organ donation.⁵ It had 131 deceased donors in 2013 and a total of 571 deceased donors from October 2008 till 31st December 2014. As a result 3138 organs and tissues have been transplanted in the state.

From 2000 to 2009, MOHAN Foundation, a registered not-for-profit organization, was responsible for initiating an organ sharing network (waiting list registry) in Tamil Nadu and Andhra Pradesh. Through this initiative 1033 organs and tissues were retrieved (Table1).

This web-based recipient waiting list registry has been adopted by Tamil Nadu (www.tnos.org) and Kerala (www.knos.org) and more recently by Rajasthan (www.rnos.org).

Table 1. Organ and Tissues facilitated by INOS in Tamil Nadu (2000-2009)

Organs	INOS Figures (2000 - 2009)		Total
	Tamil Nadu	Andhra Pradesh	
	(2000- October 2008)	(2000-2009)	
Kidney	319	130	449
Liver	38	48	86
Heart	22	7	29
Pancreas	0	1	1
Heart Valves	0	16	16
Corneas	302	150	452
TOTAL	681	352	1033

One of the significant steps taken in Tamil Nadu was the involvement of all stakeholders – the government, the private sector and NGOs like MOHAN Foundation. In a unique voluntary initiative MOHAN Foundation’s trained transplant coordinators/counsellors were placed in the Rajiv Gandhi Government General Hospital, Chennai.⁶ Here they have facilitated the retrieval of 645 organs and tissues from 80 deceased donors and from donations after cardiac death as well (February 2010 to December 2014).

Table 2. Deceased Organ Donation in India in 2013

State	Tamil Nadu	Andhra Pradesh	Kerala	Maharashtra	Delhi	Gujarat	Karnataka	Puducherry	Total (National)
Donor	131	40	35	35	27	25	18	2	313
ODR (pmp)	1.8	0.47	1.05	0.31	1.61	0.41	0.29	1.6	0.26
Heart	16	2	6	0	-	0	1	0	25
Lung	20	2	0	0	-	0	0	0	22
Liver	118	34	23	23	23	20	16	0	257
Kidney	234	75	59	53	40	54	29	4	548
Total	388	113	88	76	63	74	46	4	852

In addition to Tamil Nadu, the other states that have been proactive in this programme are Andhra Pradesh, Kerala, Karnataka, Gujarat and Maharashtra and they already have many rules in place to promote the deceased donation programme. The govt. of Andhra Pradesh in 2010 promulgated an order G.O.MS. NO.184 and launched its organ sharing network called Jeevandan. In 2013, these states contributed in good measure to the programme (Table 2). The latest entrant Rajasthan had its first multi-organ donation in February 2015.

Deceased donation in Kerala

In August 2012, Kerala initiated the deceased organ donation with the launch of Mrithasanjeevani – Kerala Network for Organ Sharing.⁷ The programme has done

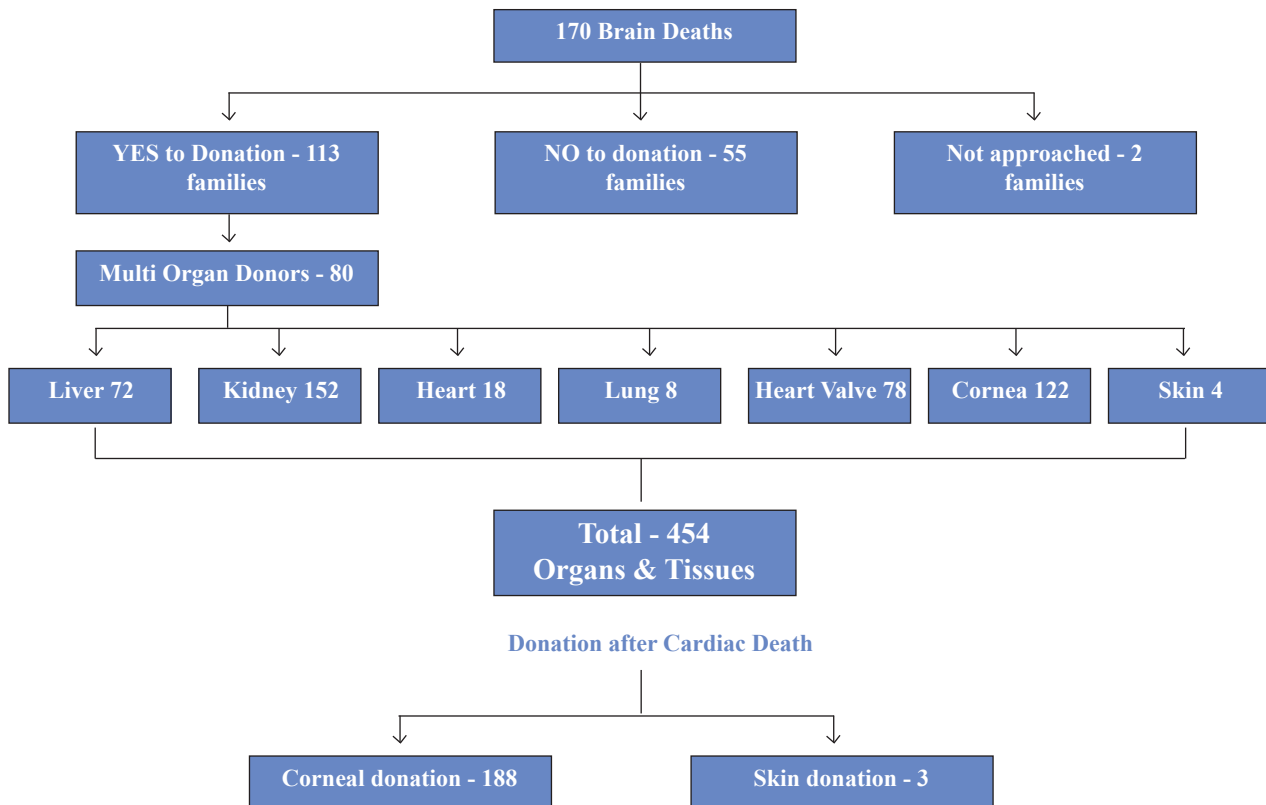


Figure 1. Deceased Organ Donation in Rajiv Gandhi Government General Hospital, Chennai February 2010 – December 2014

remarkably well in the space of just a few years (Table 3 – Source: www.knos.org).

Fr. Davis Chirammel, who launched the Kidney Federation of India in Thrissur and Industrialist and Chairman of V-Guard Group Kochhouseph Chittilappilly are two individuals who helped spread the message of organ donation in Kerala. Both donated their one kidney to lesser privileged chronic renal failure patients and set an example by their donation^{8,9} Fr. Davis Chirammel is called ‘Kidney Priest’ as he is responsible for half a million people pledging their organs.

These examples has helped engage people and created awareness at mass scale in the state. NGO’s like MOHAN Foundation in association with Mrithasanjeevani too have created awareness in Kerala on issues related to brain death and organ donation. MOHAN

Table 3. Deceased Organ Donation in Kerala				
Year	2012 (from August)	2013	2014	Total
Donors	9	36	58	103
Liver	4	23	44	71
Heart	0	6	6	12
Kidney	18	59	104	181
Total Organs & Tissues	22	88	155	265

Foundation as an NGO has been an important stakeholder in helping the Government of Kerala in conducting workshops for transplant and non-transplant related hospitals on issues such as identification, certification and maintenance of brain death. Besides that it has held workshop for intensive care staff, neurologists, transplant clinicians and transplant coordinators on various issues related to multi-organ procurement, handling of medico-legal cases and transplant coordination. The NGO also helps the Mrithasanjeevani office with providing manpower to run the registry, create reports such as annual report and help in organ allocation.¹⁰

Kerala in the last three years has made commendable progress. However a lot more needs to be done to help strengthen the programme and create a system in hospitals so that deceased organ donation becomes a norm rather than a rare occurrence in a hospital. Medical Organization like the Indian Medical Association, the Urology, Nephrology and Critical Care state chapters need to take the onus and become part of the programme.

Training of Transplant Coordinators

Transplant coordinators play a key role in the organ

donation and transplantation process and it is mandatory for hospitals to appoint such a person before they are registered as transplant centres. MOHAN Foundation has trained 734 transplant coordinators through its one week, one month and 6 months programme in the past five years. The shorter courses cater to the need of hospital staff that already has some experience in the programme and the longer courses are targeted at those who are new to the programme. A one-year e-learning programme is also being offered with contact classes for soft skills, simulations and role play. This is a cost effective method of ensuring a wider reach of the training.¹¹

CONCLUSION

The way forward for the deceased donation programme is creating an enabling environment in the hospitals with the support of medical professionals, hospital administrators and transplant coordinators. Transplant surgery is indeed cutting-edge surgery and the capability of successfully doing multi-organ transplant surgery will not only help with important research developments but also standardize our hospitals practices; besides improving the image of our health care overseas. Transplant surgery is the platform that can take our health care to a higher level of capability.

The success of the deceased organ donation programme reflects a society's triumph and its attitude towards fellow human beings.

END NOTE

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Conflict of Interest: None declared

Editorial Comments:

The pace of deceased donor organ donation or cadaver organ donation in India is very slow. The awareness activities conducted by MOHAN FOUNDATION have accelerated the developments in this vital area. Dr Sunil Shroff is the brain behind this organization. In addition he has mentored the framework and working of Mrithasanjeevani the organization in Kerala overseeing organ allocation among the recipients.

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