

# Deceased donor organ transplantation: A single center experience from Cape Town, South Africa

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## ABSTRACT

Deceased donor kidney transplantation have been in place for more than ten years at Groote Schuur Hospital in Cape Town, South Africa. This retrospective review between 1995 and 2005 reports the experience with 824 deceased donor referrals. Race breakdown showed that 321 donors were black, 154 white, 318 mixed race and 30 unrecorded. Consent remains a major problem in South Africa and we were unable to obtain consent in 43% of our patients. Only 20% of donors had natural causes of death – the majority died because of trauma/unnatural circumstances. For this reason the average age of our donors are 26 years. A and O blood group donors were the most prevalent with A blood group patients making up 38% and O blood group 39% of the donor population.

**Key words:** Deceased donor transplantation, kidney transplantation, transplantation in developing countries

## Introduction

Renal transplantation (RTx) is the best therapeutic modality for patient suffering from end stage renal disease (ESRD). In the public sector hospitals in South Africa, dialysis is limited and patients need to be selected carefully for these programs. Deceased donor organ transplantation (DDOT) accounts for approximately 60% of renal transplants at Groote Schuur Hospital, Cape Town, South Africa. It is our aim to increase deceased donation, despite socioeconomical difficulties.

## Materials and Methods

This was a retrospective review of deceased donation at Groote Schuur Hospital between January 1996 and December 2005. In this period we received between 60

and 113 referrals per year for brain-dead organ donors [Table 1]. We employ two transplant coordinators who work full time at the hospital. Referrals are from our own hospital, as well as from peripheral hospitals in our area. We also get referrals form hospitals in the Eastern and Northern Cape.

## Results

### Donor demographics

In this time period, 321 donors were black, 154 white, 318 mixed race and 30 unrecorded. The average age of donors were 26.15 years. This is the result of high trauma death rates in South Africa, which mostly involves younger people. Interestingly, only 39% of donors had O blood group and 38% A blood group. The rest were divided between 18% B blood group and 5% AB [Table 2].

### Organ utilization

Referral rates do not correlate to utilized donor rates. This is a result of numerous factors. Consent remains a major problem as a lot of our patients comes from uneducated backgrounds and has religious and social issues with organ donation. Finding the family might also proof difficult, as contact details are not always readily available [Table 3].

### Cause of death

South Africa has a high trauma rate and for this reason most of our donors come form the Trauma unit at Groote

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Access this article online	
Quick Response Code:	Website: www.indianjnephrol.org
	DOI: 10.4103/0971-4065.97108

**Table 1: Donor referrals between January 1996 and December 2005**

Year	Referrals
1996	113
1997	99
1998	85
1999	95
2000	99
2001	81
2002	66
2003	60
2004	59
2005	67

**Table 2: Donor demographics**

Race/sex	Mean age (year)	Number	Percentage
Black/female	24.83	43	5.2
Black/male	24.62	278	33.7
Mixed-race/ female	26.73	98	11.9
Mixed-race/male	25.11	220	26.7
White/female	30.52	55	6.7
White/male	29.11	99	12.0
Unknown	27.85	31	3.8

Schuur Hospital. Medical donors remain a small part of our total donors [Table 4].

## Discussion

Deceased organ donation in South Africa between 1996 and 2005 had room for improvement in many aspects. Consent rates needs to be improved and this is currently being addressed with Transplant coordinator workshops and education, co-funded by the South African Transplantation Society and the Organ Donor Foundation. Public education remains a major priority in South Africa. At Groote Schuur Hospital a Donation after Cardiac Death programme was started after the results of this study had been noted. Successful utilization of the donors who had a cardiac arrest after brain death certification would have resulted in an 11% increase in organ utilization rate. Infections in donors were mostly HIV, active Hepatitis B and bacterial infections. This had recently been addressed by starting a HIV positive donor to HIV positive recipient program.<sup>[1]</sup>

**Table 3: Reasons organs not utilized**

Reason	Number of patients	Percentage
No consent	222	43
Infection	176	35
Patient had cardiac arrest before procurement	57	11
No family available	28	6
Unknown patient	17	3
No recipient	9	2

**Table 4: Cause of death**

	Number of patients	Percentage
Gunshot wound	151	18.3
Motor vehicle accident (pedestrian)	143	17.4
Blunt or sharp assault (stab wound)	143	17.4
Motor vehicle accident (driver or passenger)	137	16.5
Cerebral bleed	115	14
Cerebrovascular accident	54	6.6
Other trauma causes	38	4.6
Unknown cause	13	1.6
Seizures	12	1.5
Cardiac arrest	6	0.7
Chemical overdose	6	0.7
Suicide hanging	6	0.7
Total	824	

## Conclusion

Deceased donation forms the cornerstone of renal transplantation in Cape Town. However, it is clear from these results that a lot of problems still need to be addressed. In a large tertiary hospital, receiving referrals for trauma, neurosurgery, and medicine, referral rates remain low. This is probably a result of poor education to medical doctors regarding organ donation. Public attitudes toward organ donation remain problematic and poor consent rates should be improved with better education and training to the public.

## Reference

- Muller E, Kahn D, Mendelson M. Renal transplantation HIV-positive donor and recipients. *N Eng J Med* 2010;362:2336-7.

**How to cite this article:** Muller EM, Barday Z, McCurdie F, Kahn D. Deceased donor organ transplantation: A single center experience from Cape Town, South Africa. *Indian J Nephrol* 2012;22:86-7.

**Source of Support:** Nil, **Conflict of Interest:** None declared.