

**Living Donor
Transplantation**

*Offering
It To
More
Patients*

**The Therapy
of Choice**

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We wish to build a “story”, though in a scientific paper and manner. It is a story to suggest what we might do to improve the quality of life and clinical outcomes of a huge number of our patients. It is a story of living kidney donation and why we must place enormous emphasis on it as the therapy of choice.

There is little doubt that kidney transplantation, broadly and statistically speaking, is the treatment of choice for renal replacement therapy (RRT). This is true for those patients who are considering options for RRT while in KDOQI stages III and IV (GFR 15-59ml/min) and for patients undergoing dialysis and considering other options.

Having said this, transplantation is not a therapy for everyone. There are clearly contraindications. Further, transplant programs have established age and co-morbidity requirements. Such factors as obesity, severe cardiovascular disease, advanced liver disease and non-adherence to prior therapies would be among the more common reasons for transplant not being a preferred therapy or even possible for some.

Let’s start the story: ESRD transplant statistics are difficult to compare, given the diversities of age, race, sex, cause of kidney failure and co-morbid conditions. However, it would be reasonable to *broadly* generalize in the following manner: Patient survival, very generally speaking, if choosing dialysis, is about 35% at 5 years. If undergoing cadaveric donation transplantation, it is about 80% at five years. And patient survival with living donation transplantation is 90% or greater at five years. Admittedly, there is little comparison in the demographics of the population. One must be highly cautious in interpreting this kind of data, but the differences are sufficiently vast between dialysis and transplantation that we must push to look at them a bit closer.

To take the story to the next level, what would the survival data show if we were to just apply the above reasoning and statistics to those patients that are eligible for transplantation, who have passed the evaluation, and who are on the “waiting list”. The New England Journal of Medicine (December, 1999) published the following (highly summarized by the authors) data:

**Table 1.
Outcomes of First Cadaveric Transplantation Compared to
Those Approved for Transplantation Yet Remaining on the Wait List**

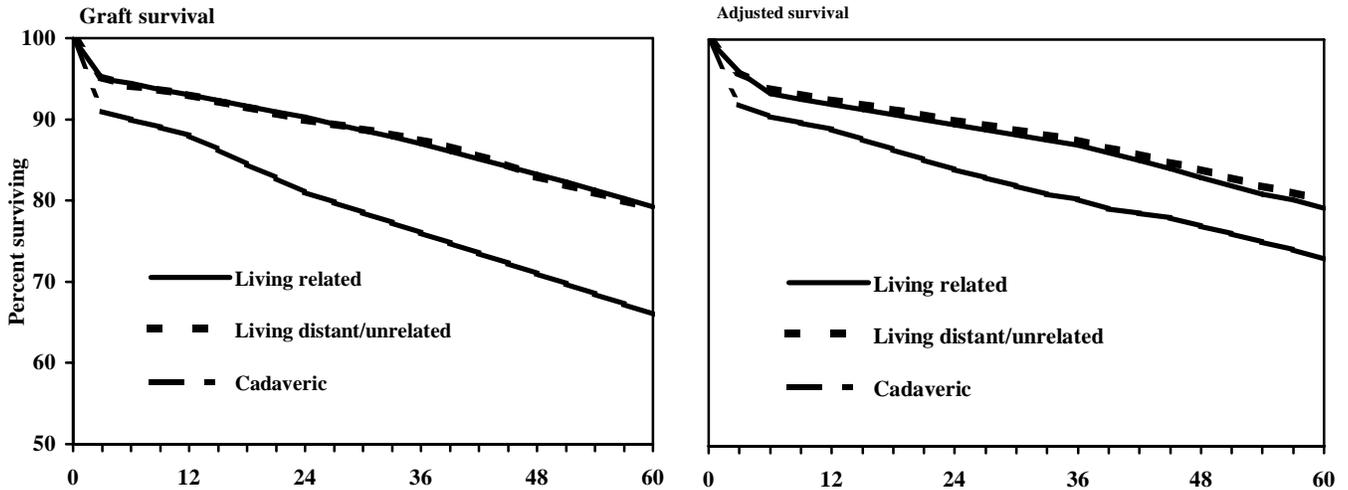
Population Studied	Projected Yrs. <u>Without</u> Transplantation	Projected Yrs. <u>With</u> Transplantation
Age 40 – 59	11	22
Age 60 –74	6	10
Age 40 – 59 Diabetes	12	19
Age 40 – 59 No Diabetes	8	22
Age 60 – 74 Diabetes	7	12
Age 60 – 74 No Diabetes	5	8

This is compelling information. It attempts to show comparative populations. All of the patients had been evaluated for transplantation and had been approved and their names were added to the wait list. During the study period some received a transplant, others didn’t. We have chosen to only show some of the demographic data analyzed in the article, yet all portray the same result. For similar groups of patients, transplantation provides around 40 – 100% longer patient survival. This is convincing. (Continued on page 8)

Let's then advance the story one more step. If we accept that transplantation offers better results to those patients who are eligible for it, what is the data that one form of transplantation is better than another? We now have to compare cadaveric transplantation (CD), Living (biologically) Related Transplantation (LRD) and Living (non-biologically) Unrelated Transplantation (LuRD). (LRD and LuRD may collectively be referred to as Living Donor Transplantation (LD)).

Above, we noted that patient survival is better with living donation vs. cadaveric donation. What does transplant graft (kidney) survival show? Figure 1. (below) provides one analysis attempting to respond to the comparisons of these therapies.

Figure 1.
USRDS 2002 ADR



This figure is taken from the USRDS 2002 Annual Data Report. It essentially shows that, whether case – mix adjusted or not, the overall graft survival is no better between LRDs and LuRDs (solid and dotted lines) and both are significantly better than CDs. Further, Figure 1. shows that the differences become greater over the years.

So the story, so far, is that patients have longer survival with transplantation, even those who are on the waiting list. There is little difference in the graft survival results of a LRD and LuRD transplant, and both are better than a CD transplant. (We are making very broad, sweeping conclusions. Clearly, when the data is further sub-divided, differences in LRD and LuRD will emerge.)

Patient and graft survival are certainly sufficient reasons to consider transplantation as the therapy of choice. And the data confirms that LD transplantation is better than CD transplantation. But there are other reasons to consider LD transplantation vs. CD transplantation - other than raw survival data. The waiting list is growing. Currently, over 53,000 patients, nationwide, await a kidney transplant as shown in Figure 2. Further, depending on the blood type, the average wait time is now in the 3-5 year range as noted in Figure 3. Depending on the transplant and organ procurement organization, the wait time could be significantly shorter, but these are overall wait times. (Continued on page 9)

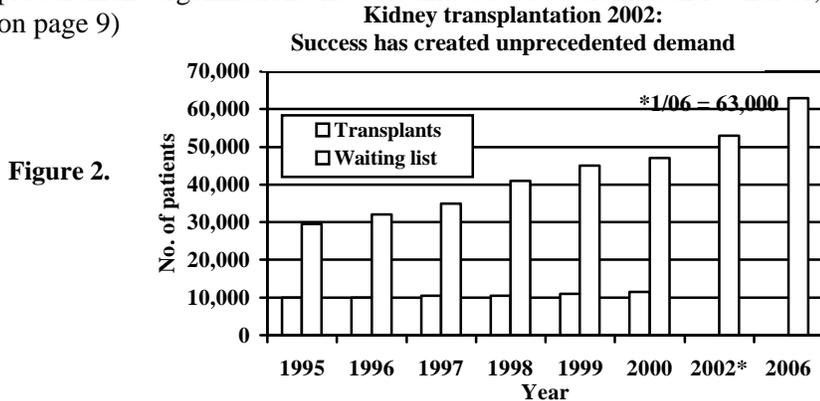
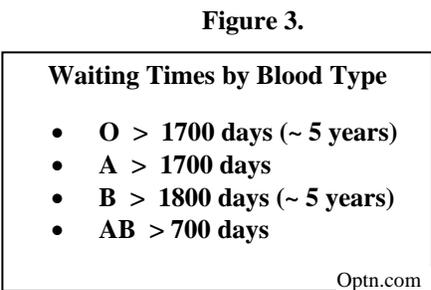
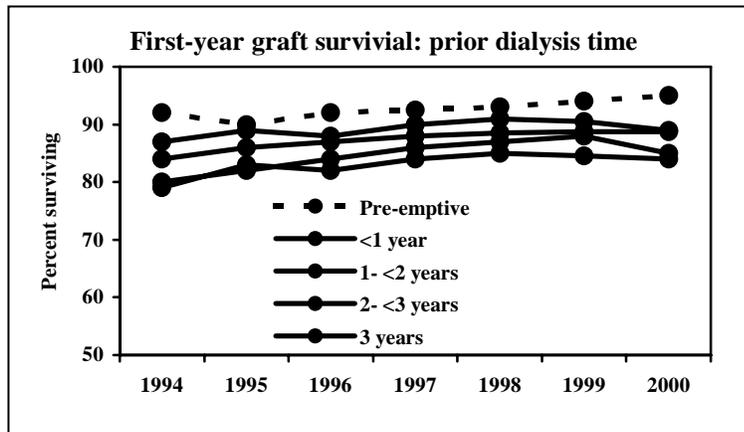


Figure 2.



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Figure 4.



Usually the only way to do immediate transplants is with a LD. Figure 4 shows data from the USRDS 2002 Annual Report that demonstrates this graphically. The story is convincing that LD, as soon as possible, is the treatment of choice for renal replacement therapy.

Once more, however, the authors emphasize that transplantation is not for everyone and may actually cause more harm than good in certain patients with certain disease states.

There are many programs that assist in developing a more affirmative approach to increasing the number of living donors.

There must first be an understanding of the risks and inconvenience of being a donor. Figure 5 lists the predominant risks and benefits to the donor.

Risks/Benefits to The Donor are an Issue	
Risks	Benefits
<ul style="list-style-type: none"> • Mortality – 0.03% • Morbidity (major post-op complications 2%; minor 8%) • Long-term risk of living with one kidney • Out of work • Pressure to donate 	<p>Enhanced quality of life due to improved self-esteem and sense of well-being</p>

Essentially, the overall mortality is very low and the complications are also low. The complications are even lower now, using laparoscopic technique. The risk of living with one kidney requires the avoidance of certain drugs, such as specific antibiotics or NSAIDS and a slightly higher prevalence of hypertension. There is the problem of being out of work or disabled for a short period of time. With laparoscopic surgery, this is usually about 2 weeks. One risk is that patients should not receive any perverse pressure from family, friends and medical personnel to donate.

The caretakers must then seriously consider the following steps:

- **Have a conviction that transplantation is the best therapy for patients with CKD**
- Develop agreement on policy among nephrologists, hospitals, surgeons and dialysis centers
- Gain education and agreement by dialysis personnel, including staff, social workers and dietitians
- Actively approach donors **through the recipient.**

Once all of the team members have agreed to a program of transplantation being the best therapy for patients, then implementation is the next step:

- 1) Always discuss the possibility of transplantation, first, and then living donation with the recipient.
- 2) Nephrologist and dialysis provider should provided education and information to potential donors.
- 3) Be certain education material is available at the nephrology office, dialysis center and/or transplant program. (Education materials in the form of brochures, closed circuit TV and conferences are available from many sources including the transplant program to which you refer, numerous Internet websites and from the Dallas PreTransplant group).
- 4) A major component of every monthly care planning meeting should be moving patients toward transplantation, determining if a donor is available, increasing the survival and quality of life of the patient and their family. This will ultimately be more beneficial than phosphorous, albumin and Kt/V discussions).
- 5) During each encounter with the recipient, while discussing transplantation, the concept of living donation should be approached.

(Continued on page 10)

Using these techniques, the Dallas PreTransplant Group has been able to increase the percentage of living donor transplants to over 40% from a base of 22% in just over one year.

There are many other programs to increase transplantation, such as altruistic donation, paired transplants, antibody depletion protocols, etc. These other types of programs, however, are outside the realm of this paper.

*I find the great thing in this world is not so much
where we stand, as in what direction we are moving:
To reach the port of excellence, we must sail
sometimes with the wind and sometimes against it –
but we must sail, and not drift, nor lie at anchor.
Oliver Wendell Holmes 1858*

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