

# Living Donor Renal Transplantation Our Experience in SIMS/Services Hospital, Lahore

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Kidney transplantation is the treatment of choice for end stage renal disease (ESRD) patients. However organ shortage remains the central problem in kidney transplantation. To deal with the widening gap between supply and demand of organ for renal transplantation, efforts to expand the organ donor pool have received increased attention. To solve this problem, we have initiated a living related and unrelated living donor programme using emotionally related persons, friends and well motivated volunteers as organ donors. A total of 18 patients with live donor underwent kidney transplantation in Sims /Services Hospital over a period from March 2006 to December 2006. The aim of study is to highlight the problems and identification of factors limiting the number of transplantation and further prospects of renal transplantation in Pakistan. The cause of ESRD was HTN 7 (38.89%), Chronic Glomerulonephritis 4 (22.22%), Calculus Renal failure 4(22.22%), and Diabetic Nephropathy 3(16.67%). The donor age ranged between 20-55 years (mean 28.39). The recipient age ranged 17-56 years (mean 32.73). Relationship of donor to recipient was sister 1 (5.56%), 1<sup>st</sup> degree relatives 3 (16.7%), friends 4(22.22%), unrelated 10(55.56%). In our study graft survival was 88.89%, patient survival 94.45%, mortality 5.56%. Transplanted patient has to be better motivated to take medication regularly and get the investigations. It was observed that 1st degree relation are very limited source of donors in this part of the world and unrelated donors certainly encourage, transplantation.

**Key word:** Renal transplantation

Recent advances in laparoscopic live donor Nephrectomy has catapulted live donor to the fastest growing organs source for transplantation<sup>1</sup>. In addition there has been increasing use of living donors as an important method world wide to overcome shortage of organs. The published reports of one year graft survival in recipient in these kidneys range from 87-93%<sup>2</sup>. However, donor selection standards are often not stated. Physicians in under developed countries have used kidneys from total strangers who were paid for their donation; poor donor patient survival time (71-80%) at one year and graft survival time 63-82% at one year are reported<sup>3</sup>. This commercialism of human organ tissue and transplantation is unacceptable. Living donor should be considered only when medically and ethically appropriate. Any compromise of these minimum standards regarding living unrelated donors would hurt the spirit altruism of organ donation and would be detrimental to all aspects of renal transplantation.

## Patients and methods

18 patients with live donor kidney transplantation were carried out in SIMS/services hospital Lahore from March 2006 to December 2006. All donor and recipient had detailed medical history and thorough physical examination including fundoscopy. The selection criteria for the donor and the recipient was strictly followed, consisting of:

1. Only living donor was selected.
2. Consent of the voluntary donor was fully ascertained.

3. The donor who was apparently in good general health was further evaluated.
4. History and clinical examination both donor and recipient were carried.
5. The donor age ranged between 18-60 years and recipient between 15-55 years.
6. The blood groups of recipient and donor were compatible.

The potential living donors were primarily identified on the basis of the ABO blood group compatibility, optimum HLA typing and preliminary serological cross matching. The general health of living donor assessed and if it was acceptable renal function was quantified. Excretory urography was performed to assess kidney function. Donor was always left with better kidney.

Donor having history of hypertension, IHD, peptic ulcer, mental disturbance, diabetes mellitus, jaundice, chest problems and having positive virology (HbsAg, HCV, CMV, HIV) were not included in this study.

Recipient having liver cirrhosis, esophageal varices; cardiac decompensation, active lung disease and cerebral vascular disease were not accepted. The evaluation of recipients were carried out by performing urine examination, urine bacterial count and culture sensitivity. CBC, RFT, LFT, Serum electrolytes, virology, echocardiography, pelvic Doppler Ultrasonography, tissue typing and lymphocyte cross match.

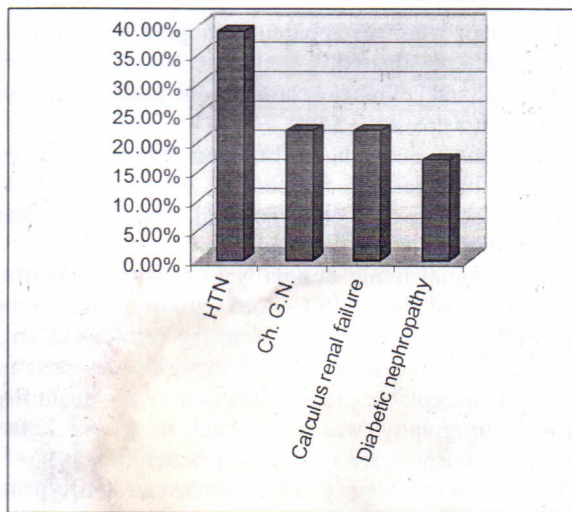
Recipients suffering from uremic pericarditis, IHD, malnutrition, chronic infection, tuberculosis and urological problems treated before transplantation. The renal to iliac vein anastomosis was performed first in an end to side

fashion with 5-0 permanent monofilament. In case of single artery end to end anastomosis was carried out with internal iliac artery. In case of double artery, the 2<sup>nd</sup> anastomosis was done as end to side to external iliac artery. An external vesical ureteroneocystostomy (Gregoir Lich technique) was the preferred method to reimplant the transplant ureter. All the recipient received a standard low dose triple-drug immunosuppression regimen of prednisolone, azathioprine, and cyclosporine. The dose of cyclosporine was monitored by C2 level regularly. Doppler studies of the transplant graft carried out in all recipients. All the Donors were regularly followed up to 3 months.

**Results**

A total of 18 patients with live donor kidney transplantation were followed up in SIMS/Services hospital Lahore, over a period from March, 2006 to December, 2006.

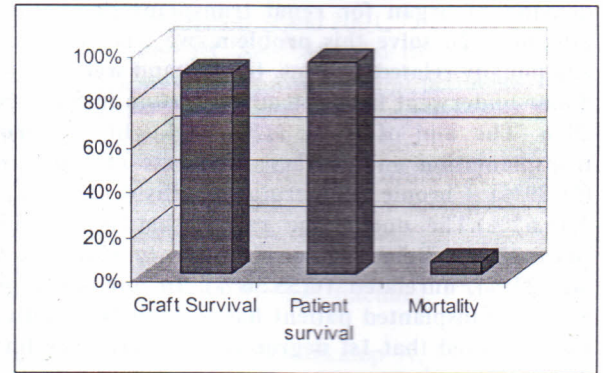
1. The causes of renal failure were HTN 7(38.89%), chronic Glomerulonephritis. 4(22.22%), calculus renal failure 4(22.22%) and diabetic nephropathy 3(16.67%).



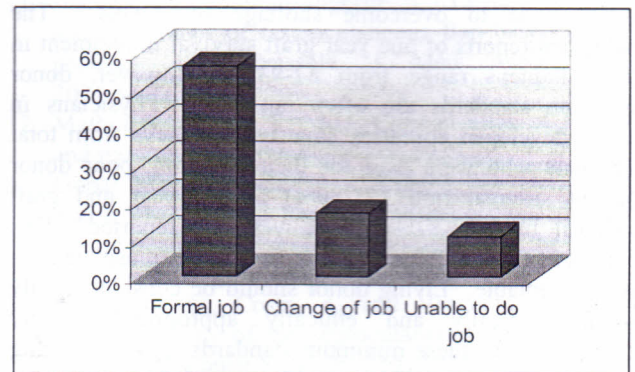
2. Donor recipient age ranged 20-55years (mean 28.39 years) and 17-56 years (mean 32.73 years) respectively.
1. The donor recipient male to female ratio was donor 17 male (94.44%) 1 female (5.56%). The recipient 16 male (86.88%) and 2 female (11.12%).
2. The donor and recipient relationship were sister 1 (5.56%), 1<sup>st</sup> degree relatives 3 (16.7%), friend 4 (22.22%), unrelated (56.56%)
3. Complications noticed in our study include ureterovesical leak 1(5.56%), immediate post operative day ureteric anastomosis was revised on the same day by placing DJ stent, ureteric stenosis 1 (5.56%) ureteroureterostomy done over a DJ stent with native ureter both patients recovered, lymphocele 1(5.56%) and wound infection 1(5.56%) recovered by

conservative treatment, chronic rejection 1(5.56%), she was put back on Haemodialysis. 1 patient (5.56%) (Diabetic) developed right side weakness immediate post operative day, on CT there was a infarct 1.2 cm in left thalamus, recovered conservative treatment by neurophysian.

4. Graft survival was 88.89%, patient survival 94.45%, and mortality 5.56%.



5. The successful transplantation restores almost normal and return to relatively productive lives. In our study (n=17), the formal job 10 (55.60%), change of job 3 (16.7%), and unable to do job 2 (11.12%).



**Discussion**

Renal transplantation is the procedure of choice and the most costeffective strategy for the management of patients with ESRD<sup>1,3</sup>. Successful transplantation restores almost normal life and return to relatively productive life. These patients have better quality of life and moreover it has reduced the number of young patients on dialysis<sup>8,12,13</sup>.

In our study, the results are comparable with other international studies. In our setup transplantation is limited because of non availability of donors. The rapidly increasing incidence of renal failure and inadequate supply of the donor kidneys especially from cadaveric, have created a gape between kidney supply and demand, which has resulted in very long waiting time to receive an organ resulting in increase of deaths during awaiting period. For

example between 1988 to 1995, the number of patients awaiting renal transplantation in USA grew from 11,909 to 17,635, due to the organ shortage. The median waiting time for cadaveric kidney increased from 400 to 842 days<sup>4,5</sup>. Efforts have been made to extend donor criteria in order to expand the donor pool<sup>6</sup>. One way to meet the growing demand for kidneys is by increasing living donor transplantation. This has been increasingly practiced in USA, where in year 2000, the number of living donor renal transplantation almost equal to cadaveric donors<sup>10,11</sup>.

The use of emotionally related donor is the most obvious, pioneer approach to expand the living donor pool. In accordance with these ideas of a volunteer donor for a specific recipient, the concept of living unrelated or emotionally related donor emerged<sup>4,6</sup>. Spouses or close friend who are willing to donate, underwent psychiatric and medical evaluation to determine their motivation and absence of coercion.

Previously, transplant centres discouraged these volunteers but the number of transplant centre that are willing to accept living unrelated donor has grown from 74 centers in 1992 to 176 centers in 1994 in USA<sup>5,7</sup>. Currently unrelated donor including emotionally related and friends as well as donor who want to donate their kidney on altruistic reasons have been increasing within the United State, Canada, Europe and other countries. The rate of complications in donor is extremely less and reported mortality rate after donor Nephrectomy is 1 in 500<sup>10</sup>. Another justification is that the success rate of living donor kidney transplantation is considerably higher than that of cadaveric<sup>8</sup>.

In the Subcontinent the living unrelated organ donation unfortunately has taken the course of business, leading to sale and purchase thus ending in mafia groups. It is recommended that there should be proper legislation to ban organ selling and purchasing. It is proposed that "Iranian Model" supported by the government for unrelated donor transplantation may be followed. Following are the consideration criteria of Iranian mode.

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- No coercion
  - Donor are true volunteers  
(Altruistic or emotionally related donor)
  - No commercialism
  - No middle man
  - No benefit to transplant team
  - No foreign recipient for the Iranian donor
  - No foreign donor for the Iranian recipient
  - Government supported reward
  - No waiting list
  - Rich and poor patients are equally transplanted
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There are few suggestion by which we can increase the number of donors.

- Public awareness about the organ donation.
- Related elderly donor more than 65 years with normal kidney can very well be accepted within excellent outcome.
- Extending the donor pool to second and the third degree relative.
- Only other encouraging donor pool is cadaveric.
- We propose to the Iranian model of kidney donation.

### Conclusion

While renal transplantation is available in Pakistan much work is still needed for effective narrowing the gape between supply (organ) and demand by proper legislation and awareness programmes.

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