



RENAL TRANSPLANT- OUR INSTITUTIONAL EXPERIENCE

Urology

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ABSTRACT

Introduction: The prevalence of chronic kidney disease (CKD) has been increasing globally and is associated with impaired quality of life, morbidity, mortality, and a significant burden on the health care system. Renal transplantation is considered the ideal treatment strategy for patients with end-stage renal disease (ESRD). **Methods:** This is a retrospective study of renal transplant cases operated at DR. PSIMS and RF from May 2022 to May 2024. 10 cases are included in the study. All patients were followed up for a period of 1 year. **Results:** Mean age was 37 years. 2 were deceased donors and 8 were live related donors. 8 cases underwent dialysis from central access. 3 out of 10 recipients needed readmission in view of pulmonary complications. Two patients developed pneumonia and one patient had post operative urinary tract infection. 3 cases developed acute rejection within first week of surgery. Mortality rate was 2 out of 10 cases. **Conclusion:** Our study demonstrated a successful renal transplant experience among a relatively healthy cohort and identifies potential gaps, particularly the high rate of central venous catheters, the frequent lack of clear aetiology of ESKD, the low rate of pre-emptive transplant, and deceased donors. Further studies are needed to evaluate and close these gaps.

KEYWORDS

renal transplantation, chronic kidney disease, end stage renal disease

Introduction:

The prevalence of chronic kidney disease (CKD) has been increasing globally and is associated with impaired quality of life, morbidity, mortality, and a significant burden on the health care system [1,2]. Renal transplantation is considered the ideal treatment strategy for patients with end-stage renal disease (ESRD) [4,5]. Patients with renal transplantation have a higher survival rate compared to patients with other solid organ transplantation, mainly due to advancements in the field of renal transplantation and the availability of effective immunosuppressive agents [6]. Survival rate currently is reported to be 90%, 73.9%, 59.8%, 46.2%, and 36.7% in one, five, 10, 15, and 20 years, respectively [7,8]. However, patients who undergo renal transplantation may develop serious complications such as side effects of immunosuppression, renal artery or vein stenosis/thrombosis, pseudoaneurysms, urinary obstruction or leak, peri-transplantation fluid collections, acute tubular necrosis, graft rejection, psychosis, and malignancy [6,9,10]. Malignancies in renal transplant recipients are approximately threefold higher compared with the general population [11]. Infection is the leading culprit of mortality during the first year post renal transplantation, with urinary tract infection (UTI) being the most reported infection. In the first two months following renal transplantation, cytomegalovirus (CMV) is considered the predominant infection, accounting for approximately 46.5% of all infections [12].

Material and methods:

This is a retrospective study of renal transplant cases operated at DR. PSIMS and RF from May 2022 to May 2024. 10 cases are included in the study. All patients were followed up for a period of 1 year.

Results:

Our study included 10 renal transplant cases. Youngest patient was 14 years of age and oldest was 45 years of age. Mean age was 37 years. 2 were deceased donors and 8 were live related donors. All patients had blood groups and HLA matching done. One case had mismatched blood rhesus types with donor being O negative and recipient being O positive. Out of 10, one patient had IgA nephropathy, one patient had anti-GBM disease, 3 patients had glomerulonephritis, 3 patients had diabetic nephropathy and 2 patients had idiopathic cause.

Only 2 patients had been undergoing dialysis from fistula site. Remaining 8 cases underwent dialysis from central access. Immunosuppression used for induction was ATG and methylprednisolone. Maintenance was done using tacrolimus.

One live donor underwent RIRS of the donor kidney for a 5 mm lower pole calculus 1 month before the planned transplant surgery.

Among the 8 live donors, 2 patients had transient elevation of serum creatinine on post operatively which decreased to normal limits subsequently. One donor needed insertion of intercostal drainage tube

(ICD) due to inadvertent injury to pleura during nephrectomy. It was kept for 48 hours postoperatively. Average duration of hospital stay for donors was 5 days. On regular follow up, all donors had normal values of serum creatinine with stable vitals.

Average duration of hospital stay for the recipient was 15 days. There was gradual drop in serum creatinine noted immediate post operatively with normal limits reached by post operative day 2. Average serum creatinine at the time of discharge was 1.1 mg/dl. 3 out of 10 recipients needed readmission in view of pulmonary complications.

Immediate reperfusion of transplanted kidney and urine output was noted in all the cases. There were no cases of hyperacute rejection. Also, no cases of delayed graft function were noted. However, 3 cases developed acute rejection within first week of surgery and had to be treated with repeated plasmapheresis and increased dosage of immunosuppression. In all 3 cases, histopathology of the biopsy taken from transplanted kidney showed acute tubular necrosis. One patient required non-invasive ventilator support for pulmonary oedema.

All cases showed urine output in the range of 15-20L/day in first 48 hours which gradually decreased to 2-3L/day by the time of discharge. No cases had any haemorrhagic complications. One patient had transient urine leak which was managed conservatively and settled by post operative day 10. Two patients developed pneumonia and one patient had post operative urinary tract infection managed with culture specific antibiotics. No patients had wound infection.

Mortality rate was 2 out of 10 cases. Cause of death was fungal pneumonia in one case of deceased donor transplantation and ventricular fibrillation in another case of live related donor transplantation.

Discussion:

This study demonstrated a successful experience in renal transplantation at our centre. Our cohort experienced a low rate of delayed graft function, rejection rate, and mortality. Surgical and medical complications were relatively lower than what has been reported in the literature [14-16] Central venous catheter, rather than arteriovenous fistula or graft, was the predominant haemodialysis access in these patients. The rate of deceased donor transplantation was only less. These observations signify the need to increase awareness about early referrals for pre-emptive renal transplantation particularly when donors are available, and to encourage organ deceased donations. 25 % of our cohort were labelled to have diabetic nephropathy, and 50% of those who underwent renal transplantation were diabetic. Diabetic nephropathy is the leading cause of ESKD worldwide [18].

The rate of delayed graft function, defined as dialysis requirement within the first post-transplantation week, was relatively low at

percentage, which is less than previous studies [19]. Most of the renal transplants in this cohort were through living donation, in which delayed graft function is rare as it usually takes place in an ideal planned manner and avoids any prolonged cold ischemia time during transplantation. It is reassuring that the rate of acute rejection in our cohort is similar to the international reports.

Our centre steroids protocol consists of 500 mg of intravenous methyl-prednisone given prior to the surgery followed by 250 mg of intravenous methyl-prednisone in each of the following two days, then the patient goes home on 25 mg of oral prednisone tapering down by 5 mg every week until reaching 5 mg. Most patients will continue 5 mg of oral prednisone throughout the post transplantation course.

Limitations include it is an observational study, conducted in a single centre, has relatively a small sample size.

CONCLUSIONS

This study demonstrated a successful renal transplant experience and identifies potential gaps, particularly low rate of pre-emptive transplant and deceased donors. Careful selection of the donors is essential. The study also showed that our outcomes are comparable to the international reports.

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