

EARLY COMPLICATIONS FOLLOWING RENAL TRANSPLANTATIONS

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ABSTRACT

In this report, early complications (defined as those occurring within one month post-operatively) following renal transplantation were evaluated in 373 kidney transplantations in our department. The most common complications as well as their relative frequency and method of management are discussed.

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INTRODUCTION

Since kidney transplantation has been used as the main treatment method in chronic renal failure, various complications are encountered either in the early postoperative period or in the late period of the transplanted patient's life. Fortunately, quite a lot of these complications are treatable, but some of them still remain as severe problems such as infections, cardiovascular and malignant diseases.^{1,2,4,5} In this study, I will analyse our experience with early complications in 373 transplanted patients.

MATERIALS AND METHODS

From October 16, 1985 to March 31, 1989, 373 kidney transplantations were performed on 362 pa-

tients (11 were second transplants). Of 354 (94.9%) of these which were from living donors, 277 (78.2%) were males and 77 (21.7%) were females. 19 of them were from cadavers, 10 (52.6%) were females and 9 (47.3%) were males, (Fig.1). The age distribution of the patients was between 14-62 (average 30.8 years). 270 (76.2%) patients received ABO compatible living related kidneys, 15 (4.23%) patients received ABO incompatible living related donor kidneys, 69 (19.5%) patients received kidneys from living unrelated or second degree related donors, 21 (30.4%) were from spouses (Fig.2). The donor specific blood transfusions (DST) were administered to 293 (82.7%) patients (in 3 parts, 10 days interval, 150 ml each, without azathioprine before transplantations).

Physical examination, laboratory studies, upper gastrointestinal radiography, abdominal ultrasound and cystogram were done for every patient before the

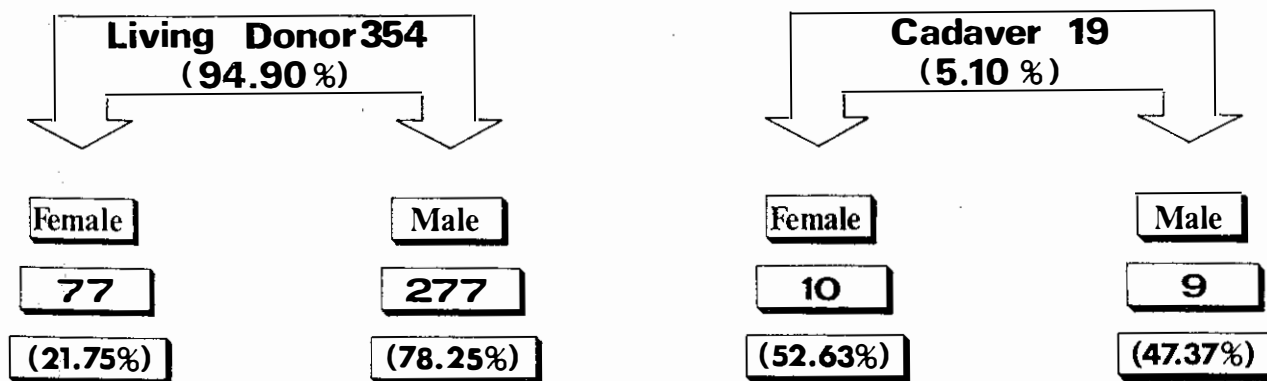


Fig.1. From October 16, 1985 to March 31, 1989, 373 kidney transplantations were performed to 362 patients [11 were second transplants]. The age distribution of the patients were between 14-62 (average 30.81 years).

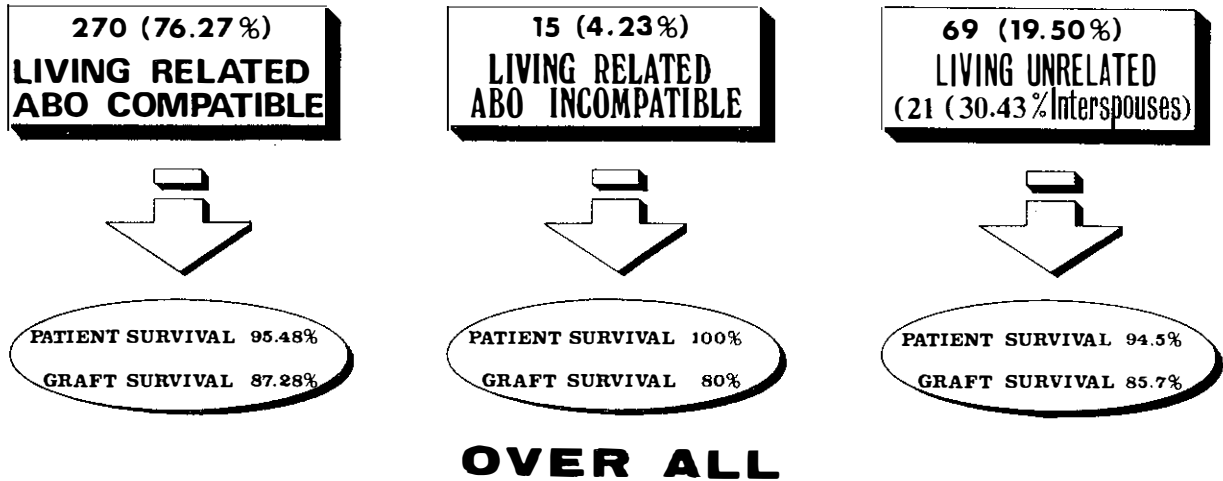


Fig.2. Living donor kidney transplantations

transplantation. The immunosuppressive therapy included low dose triple drugs (Cy-A 5 mg/kg/d average, azathioprine 2 mg/kg/d, prednisolone 1 mg/kg/d). Prednisolone dose was tapered to 20 mg/d just before the patient left the hospital and Cy-A dose could be adjusted by blood level measuring (td-x, Abbott).

The bladder was drained with a no. 16 Foley catheter for 3 days. Closed drainage system «haemovac» was used for the wounds for 1 to 2 days. In the postoperative period, renal functions were monitored clinically, FNAB, biochemically and T_c 99m OPTA dynamic renal scintigraphy. Urological complication was diagnosed through the combination of clinical features, deteriorated renal functions, renal scintigraphy, ultrasound and percutaneous intervention. Rejection episodes were treated by bolus methylprednisolone (MP) for 3 consecutive days. When the rejection episodes persist, the same dose could be repeated.

If the rejection episodes could not be reversed by bolus MP treatment, they were regarded as «Steroid Resistant Rejection» and the «OKT-3 and plasmapheresis combination therapy» was performed for 10 days (Table I).

RESULTS

The «early» complication which is analysed in this study was considered to be that which occurs within 30 days post-operatively. Main early complications were acute rejection which occurred in 47.2% of the patients (Table II). 94.31% were reversible (Table III) and only 5.68% were irreversible; namely, 10 grafts were lost. In 23% of the patients various complications other than rejection were observed (Table IV). Infectious complications were seen in 13.13%, lymphocele in 3.20%, urological in 2.68%, vascular in 2.68% and miscel-

Table I. The treatment methods of rejection episodes

	No of Patients	%
Bolus methylprednisolone only	130	73.86
Bolus methylprednisolone + Plasmapheresis	8	4.54
Bolus methylprednisolone + OKT-3 with plasmapheresis	38	21.59

Table II. Early complications in 373 consecutive kidney transplantations

	No of Patients	%
Acute rejection episodes	176	47.2
Complications other than rejections	86	23

Table III. The reversal rate of acute rejection

	No of Patients	%
Acute Rejection	176	47.2
Reversible	166	94.31
Irreversible	10	5.68

laneous complications (duodenal ulcer perforation, 2; cecum perforation 1; acute pancreatitis, 1; incisional hernia, 1) occurred in 1.34% of cases. 10 (2.68%) patients presented vascular complications (Table V). Three of them were severe; one was renal artery rupture (unfortunately the patient died); the second one was renal artery thrombosis (graft nephrectomy was done); and the third one was renal vein rupture which occurred on the third day post-operatively and he was treated successfully. In our 354 living kidney

Complications of Renal Transplantation

Table IV. Early post-operative complications other than rejections among 373 consecutive kidney transplantations

	No of Patients	%
Infectious Complications	49	13.13
Lymphocele	12	3.20
Urological	10	2.68
Vascular	10	2.68
Miscellaneous (D. ulcer perf. 2, cecum perf. 1, acute pancreatitis 1, incisional hernia 1)	5	1.34
TOTAL	86	23.00

Table V. Early post-operative vascular complication

	No of Patients	%
Wound hemorrhage	7	1.07
Deep vein thrombosis	3	0.80
Renal artery rupture	1	0.26
Renal artery thrombosis	1	0.26
Renal vein rupture	1	0.26
Total	10	2.69

Table VI. Post-operative early urological complications

	No of Patients	%
Urinary leak from ureterovesical anastomosis	6	1.61
Distal ureteral necrosis	3	0.80
Uretral stenosis due to cord pressure	1	0.26
Total	10	2.69

Table VII. Infectious complications in early post-operative period in 373 consecutive kidney recipients

	No of Patients	%
Wound infection	10 (deep 2, superficial 8)	2.68
Pulmonary infections	10 (Bacterial 4, viral 5, fungal 1)	2.68
Urinary infection	14 (mostly <i>E. coli</i>)	3.75
Septicaemia	6 (3 viral, 3 bacterial)	1.60
Gastrointestinal tract infection	5 (4 fungal, 1 bacterial)	1.34
Skin infections	4 (herpes simplex 3, herpes zoster 1)	1.07
Total	49	13.15

transplantations, 10(2.68%) urological complications were encountered (Table VI).

Leakswere encountered in six patients. Open drainage was performed in three, ureteroneocystostomy in two and ureteroureterostomy in the other (segmentary necrosis was the main pathology in this patient).

Three distal ureteral necroses were found; one was due to spermatic cord pressure, the other two were probably due to vascular deterioration of the distal ureter (Table VI). The extravescical new-ureteroneocystostomy was performed on all these patients. Now, they are doing well with normal kidney functions.

Consequently, two patients lost their grafts due to chronic rejection and they returned to dialysis. The remaining eight patients are doing well with stable and normal kidney functions.

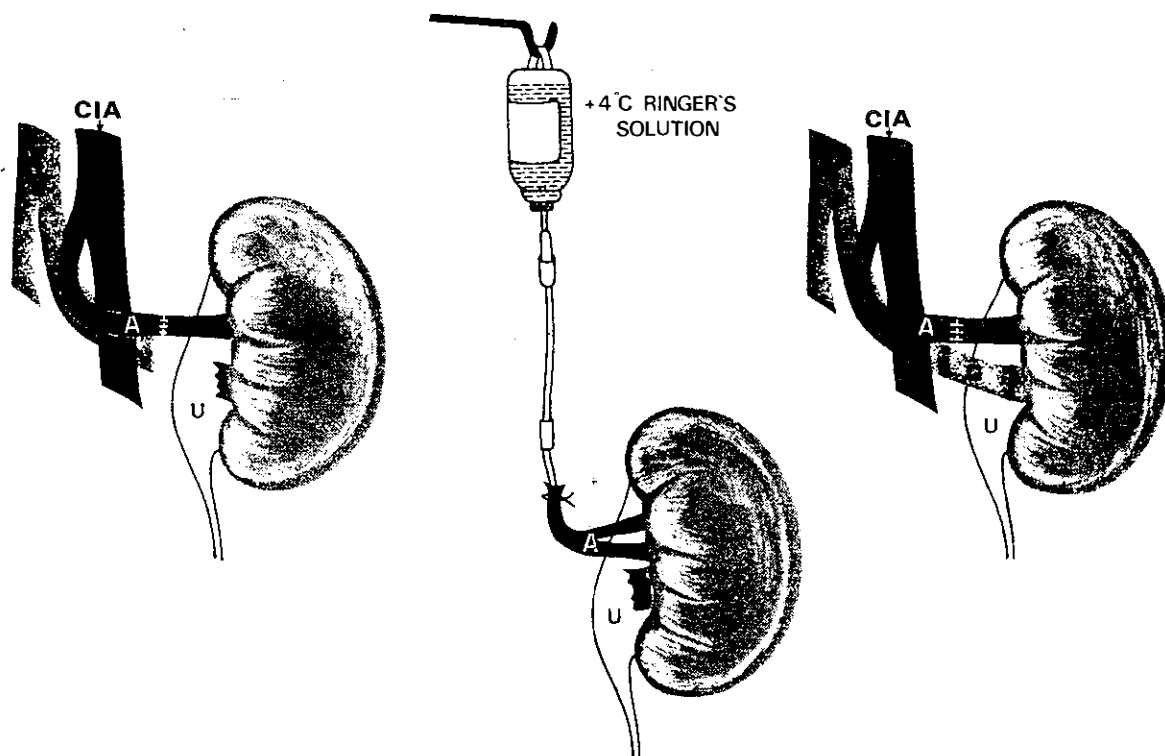
Infectious complications were the most important complication in this survey which was diagnosed in 13.15% (Table VII). Four patients died due to infectious complications, two as result of CMV infection, one from severe genital herpes simplex dissemination, one from *Pseudomonas* septicemia. Spontaneous cecum perforation was diagnosed in one patient on the 2nd day post-operatively and treated successfully. One pancreatic abscess was diagnosed in another patient on the 3rd week post-operatively. Surgical drainage was performed and the patient recovered with normal kidney function. Another patient developed duodenal ulcer perforation on the 2nd day post-operatively. Primary closure was performed and she was doing well with normal kidney function but on the 8th week she died due to cardiac arrest.

In this survey the rate of severe wound infection was too low (two patients developed severe wound infection but were treated successfully).

DISCUSSION

In spite of the major technical improvements and immunosuppressive advances, various severe complications are still life-threatening problems following kidney transplantation. Infectious complications are the most important problem in this group, especially viral infections such as CMV are very important, because there is no specifically effective treatment method to combat this type of infection.³ In our series, the overall infectious complication rate was 13.15% and four patients died, two of them due to CMV infections. Our protocol during this type of infection was to decrease immunosuppression, administer intravenous acyclovir (Zovirax) and antibiotics according to the culture results.

The most commonly encountered early post-operative complication was rejection following renal transplantation which was 47% in our series and this is



completely comparable with the literature.⁶ The success rate of treatment was overall almost 95%. Only 10 grafts were lost in these series.

The rate of vascular complications was also low in this study, as only three severe vascular complications were encountered and one patient was lost.

The urological complication rate was also low. Only two grafts were lost due to chronic rejection and in this group namely, there was no severe morbidity due to urinary complications. However, our conclusion with the related urological complications were that the ureter and spermatic cord dissection must be performed with a meticulous surgical technique.

Finally, the most common early post-operative complications following kidney transplantation are acute rejection, vascular complications, urological complications and infectious complications. Fortunately, most of our complications are preventable with the mentioned meticulous technique and treatable with very effective tools.

REFERENCES

- 1- Washer G.F., Schroter G.P.J., Starzl T.E. and Weil R.M.: Causes of death after kidney transplantation. *JAMA* 250: 49-54, 1983.
- 2- Rubin H.R., Wolfson J.S., Cosimi A.B., Tolkoff-Rubin N.E.: Infection in the renal transplant recipient. *Am.J.Med.* 70:405, 1981.
- 3- Peterson K.P., Balfour H.H., Marker S.C. et al.: Cytomegalovirus disease in renal allograft recipients. A prospective study of the clinical features, risk factors and impact on renal transplantation. *Medicine.* 59(4), 283-300, 1980.
- 4- Blohme I., Byringer H.: Malignant disease in renal transplant recipients. *Transplantation*, 39: 23-25, 1995.
- 5- Penn I.: The price of immunotherapy. *Cur.Prob. Surg.* 18:(11) 682-751, 1981.
- 6- Pichlmayr R., Wonigeit K., Ringe B. et al.: Rejection and nephrotoxicity. *Prof. Eur. Dial. Transplant Assoc. ERA21:* 947, 1984.