Renal transplantation in patients on continuous ambulatory peritoneal dialysis

C. J. CARDELLA, P. Y. W. TAM, G. T. COOK, G. A. DEVEBER and D. G. OREOPOULOS.

From the Departments of Medicine and Surgery. Toronto Western Hospital. 399 Bathurst Street. Toronto, Ontario. Canada.

SUMMARY

Between April-78 and December-80, 25 transplants were performed in 23 patients on CAPD. Twenty-one were first transplants and 4 second transplants.

The duration of CAPD ranged from 1 to 23 months ($\bar{x}$ = 11.3). There were 28 episodes of peritonitis in 12 patients prior to transplantation. Eleven patients did not have an episode of peritonitis prior to transplantation. All patients were maintained on CAPD free of peritonitis for at least 1 month prior to transplantation.

Besides usual immunosuppression 18 patients received rabbit antithymocyte sera. Preoperative cephamandol was administered prior to and for 48 hours post-transplant. Oral trimethoprim-Sulphamethoxazole was given daily for a year.

The one-year actuarial graft survival is 62 % sixteen grafts are functioning after 1 to 30 months. The one-year actuarial patients' survival is 85 %. These results are not different from that of the same hospital obtained in the non-CAPD patients (67 % and 87 % respectively).

Seventeen patients required dialysis in the post-transplant period. Fourteen of them received peritoneal dialysis.

Only one patient developed a non-fatal episode of peritonitis in the post-transplant period.

Key words: CAPD, Renal Transplantation in CAPD.

RESUMEN

A lo largo de 32 meses se realizaron 25 trasplantes en 23 pacientes incluidos en programa de DPCA. De ellos, 21 eran primer trasplante y 4 segundos. Veinticuatro riñones eran de cadáver y 1 de vivo emparentado. No existía una política de transfusiones pre-trasplante establecida (10 pacientes no habían recibido ninguna transfusión).

La permanencia media en DPCA previa al trasplante era de 11,3 meses (1-23).

En 12 pacientes se habían dado un total de 28 episodios de peritonitis (2 de ellos por hongos que requirieron retirada temporal de catéter). Los restantes 11 nunca habían sufrido peritonitis. Todos los enfermos llevaban, al menos, un mes libres de peritonitis cuando fueron trasplantados.

La terapia inmunosupresiva fue la habitual, recibiendo 16 pacientes suero de conejo antitimocito en algún momento. Se administró, además, cefamandol preoperatorio y durante 48 horas, así como trimetroprim-sulfametoxazol durante un año postrasplante.

El catéter peritoneal se retiró en el momento del trasplante sólo si existía infección del punto de salida.

La supervivencia actuarial del injerto al año es del 62 %. Hay 18 injertos funcionando después de un tiempo de 1 a 30 meses.

La supervivencia actuarial de pacientes es del 85 % al año.

Estos resultados no son diferentes de los obtenidos en el mismo hospital con el resto de los urémicos no tratados con DPCA (67 y 87 %).

Diecisiete enfermos requirieron diálisis en el período postrasplante, siendo ésta peritoneal en 14 de estos pacientes.

Hubo 8 episodios infecciosos no fatales, de los que sólo uno fue una peritonitis.

Los 2 pacientes que fallecieron después del trasplante uno fue por sepsis y otro tardíamente por probable infarto de miocardio.

Palabras clave: DPCA, Trasplante renal en DPCA.

INTRODUCTION

Renal transplantation is a therapeutic option frequently offered to patients with end stage renal disease. Until recently, most patients were maintained on either hemodialysis or intermittent peritoneal dialysis prior to transplantation and graft outcome was similar regardless of the type of dialysis given [1]. However, the number of patients treated with continuous ambulatory peritoneal dialysis (CAPD) has increased substantially over the last few years. Two early reports suggest CAPD patients are suitable candidates for renal transplantation [2,3].

This report summarizes our experience with renal transplantation in CAPD patients. The purpose of this review is to determine the effect of CAPD on graft outcome and to establish guidelines which will help in the post-transplant management of these patients.

PATIENTS AND METHODS

Between April 1978 and December 1980, 25 transplants were performed in 23 patients on CAPD. Twenty-one were first transplants and 4 second transplants. Three of the 4 who received second grafts had lost a previous graft because of renal artery thrombosis; and the other because of rejection at 3 months. Twenty-four grafts came from cadaveric donors and 1 from a living related donor. The age of the 10 males and 13 females ranged from 21 to 61 years (mean 42 years); 8 were over 50 years of age. No routine pre-transplant transfusion policy was employed during this time. Ten patients received no transfusions; 5 received 1 to 5 transfusions and 10 patients had more than 10 transfusions. Three patients were highly sensitized and had a maximum percent pre-transplant cytotoxic antibody against a panel of greater than 50 %. Seventeen patients had levels between 0 and 50 % and 6 were not tested prior to transplantation.

The causes of end stage renal disease were glomerulonephritis in 15 patients; pyelonephritis in 3 patients, diabetes mellitus in 3 patients, polycystic kidney disease in 1 patient and unknown cause in 1 patient.

The total duration of all types of dialysis ranged from 3 months to 50 months, with a mean of 20.8 months. The duration of CAPD ranged from 1 month to 23 months (mean 11.3 months). Fourteen patients had been on CAPD for more than 6 months prior to transplantation. There were 28 episodes of peritonitis in 12 patients prior to transplantation. Twenty-one episodes were due to gram positive organisms, the commonest being staphylococcus epidermidis; 5 were due to gram negative organisms. There were 2 patients who had fungal peritonitis which required removal and subsequent replacement of the peritoneal catheter. One episode of peritonitis was aseptic as no organism was identified. Eleven patients did not have an episode of peritonitis prior to transplantation. All patients were maintained on CAPD and free of peritonitis for at least 1 month prior to transplantation.

The number of HLA A, B matches were as follows; 0 matches in 11 patients; 1 match in 7 patients, 2 matches in 6 patients, 3 matches in 1 patient. There were no 4 antigen matches.

Baseline immunosuppression consisted of daily prednisone (0.5 mg/kg.) and azathioprine (1-3 mg/kg.). Rabbit antithymocyte sera (RATS) was used in two ways. Ten patients received RATS prophylactically; that is, from the day prior to transplantation throughout the first 3 weeks post-transplant. Eight other patients received RATS for rejection episodes which were resistant to high dose steroids. Rejection episodes were treated initially with intravenous methylprednisone (10 mg/kg/day) for 3 days. Plasma exchange therapy was given for rejection episodes in which there was biopsy evidence of moderate or severe humoral rejection [4].

Preoperative cephamandol was administered prior to and for 48 hours post-transplant. Oral trimethoprim and sulphamethoxazole was given daily for at least 1 year post-transplant.

Dialysis was instituted following the transplant as needed. Peritoneal dialysis was performed if the peritoneal membrane had not been lacerated during the transplant procedure. The peritoneal catheter was not routinely removed at the time of the transplantation unless exit site infection was present. It was removed electively 3 months post-transplant if renal function was stable.

RESULTS

The one year actuarial graft survival in CAPD patients is 62 %. Sixteen grafts are functioning and have been followed from 1 to 30 months (mean = 18 months). Two grafts (8 %) were lost to renal artery thrombosis in the early post transplant period. Five grafts (20 %) were rejected and the patients returned to CAPD.

The one year actuarial patient survival is 85 % in CAPD patients. Two CAPD patients died as a result of the transplant. One patient died of sepsis two weeks post transplant during therapy for a rejection episode. A second patient died 11 months post-transplant, of a presumed myocardial infarction. At this time, her serum creatinine was 1.0 mg. %.

Seventeen patients required dialysis in the post-transplant period. Fourteen received peritoneal dialysis (6 continuous and 8 intermittent). The mean number of days on dialysis was 6; one patient required dialysis for 26 days post-transplant. Three other patients required hemodialysis post-transplant because the peritoneum had been transected during surgery.

Non-fatal infectious episodes occurred in 8 patients; 5 patients had blood sepsis related to a central subclavian line and were treated with removal of the line and appropriate antibiotics. Two patients had cytomegalic virus infection which responded well to a reduction in

immunotherapy. One patient had peritonitis. This patient, who did not have an episode of post-transplant peritonitis, required peritoneal dialysis for the first 7 days post-transplant because of acute tubular necrosis in the allograft. On day 18, the patient developed signs and symptoms of peritonitis but the peritoneal effluent did not grow an organism. The patient was treated with broad spectrum antibiotics and removal of the catheter. Subsequently, the patient was discharged free of symptoms with a functioning graft.

DISCUSSION

The one year actuarial patient and graft survival in CAPD patients is 62 % and 85 % respectively which is similar to our one year actuarial patient and graft survival of 67 % and 87 % in non-CAPD patients. The frequency of grafts lost to rejection and technical problems is also similar to non-CAPD patients.

Pre-transplant peritonitis was not a contraindication to transplantation in CAPD patients providing the episode had been adequately treated and the patient was free of symptoms for at least one month pre-transplant. One episode of peritonitis occurred in the post-transplant period and was easily managed with antibiotics and removal of the catheter. The management of the peritoneal catheter in the early and late post-transplant period has been reviewed in detail previously [5].

CAPD patients appear to have a post-transplant course and prognosis that is similar to non-CAPD patients. Post-transplant peritonitis is a risk but occurred in only one patient (4 %).

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