DIALYSIS VERSUS INTEGRATED PROGRAMME
OF DIALYSIS AND TRANSPLANTATION

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Since 1972, at Bergamo Hospital, 127 patients treated by hospital (97 patients)
and home (30 patients) dialysis, were listed for transplantation. Sixty-six
patients were transplanted (64 with cadaver graft) allowing us to compare, in
two homogeneous groups of patients, the results of a policy of dialysis ‘per se’
(61 patients) with the results of a policy of dialysis integrated with transplan-
tation (66 patients).

Patients and Methods

From 182 patients with irreversible renal failure accepted at Bergamo Hospital
for haemodialysis, 127 patients (70%) were selected for transplantation. Candi-
dates over 60 years of age, patients affected by severe abnormalities of the
lower urinary tract, systemic or malignant disease were excluded from the
transplant programme. Dialysis was not regarded as a temporary treatment,
but as though it were to be the definitive therapy. Dialysis was done thrice
weekly, for 12 hours per week, using a 1 m² disposable dialyser, with single-
pass dialysate flow at 500 ml/min, and a blood flow of ~300 ml/min. Trans-
plantation was done only when the patients were medically fit and as fully
rehabilitated as possible. All potential recipients were tissue typed and tested
for the presence of lymphocytotoxic antibodies. Patients with high titres of
preformed antibodies (>20%) were excluded from transplantation. All donor-
recipient pairs had a direct lymphocytotoxic cross-match performed by the
micromethod of Terasaki. Priority was given to the recipient with the best
HLA matching with the donor. A 3 or 4 HLA antigen sharing by donor and
recipient was achieved three times. In 32 pairs two antigens were shared and
in 29 pairs less than two antigens were common to both donor and recipient.
The direct lymphocytotoxic cross-match was negative in all instances. Accord-
ing to Italian law, the donor kidneys were removed after a 24-hour period of
cerebral death. From November 1975 a new law shortened the period of ob-
servation to 12 hours. Transplantation was done at the Polyclinic Hospital of
Milan. Intravenous methyl-prednisolone in decreasing doses was administered for the first five days after surgery. Oral prednisone (1 mg/kg/day) was then given in a single morning dose and progressively tapered; after 12 months, 10 mg daily or 20 mg on alternate days were prescribed and maintained indefinitely. Azathioprine was given in a dose of 1–2.5 mg/kg/day, according to WBC and platelet count. Acute rejection was treated by iv methylprednisolone (1 g) every 24–48 hours for up to four pulses. The following criteria were respected in order to reduce transplant patient mortality-rate:

a) clinical selection of recipients (transplantation was performed only on well-dialysed and well-prepared patients and not as an escape from failing dialysis);

b) treatment of rejection was given only after a reasonably sure diagnosis;

c) greater willingness not to use prolonged and aggressive immunosuppressive therapy in the face of graft failure;

d) an early return of the patients to dialysis in case of graft failure.

Results and Conclusions

The 66 patients treated by the integrated programme and the 61 treated by dialysis alone did not differ in age, sex, duration of treatment, and distribution of causes of renal failure (Table I). The actuarial patients and graft survival is reported in Figure 1. Actuarial survival was not different at each time interval for patients treated by transplantation, dialysis alone, and the integrated programme. Four patients treated by dialysis alone died (cerebral haemorrhage, 2, myocardial infarction, 1, pulmonary oedema, 1) and there were 7 deaths in the group treated by the integrated approach (arterial infection, 2, pulmonary embolism, 1, sepsis, 2, haemorrhage, 2). Of the 42 patients with a functioning transplant, 38 (90%) are able to work full time, of the 57 patients treated by haemodialysis, 38 (67%) have the same degree of rehabilitation (P < 0.02).

These results confirm\(^1\) that an integrated programme of dialysis and trans-
Figure 1. Actuarial survival curve for patients on dialysis (o), post-transplant patients (△),
grafts (○), and for the integrated programme (●) (ie survival of patients from the time
of starting dialysis, irrespective of whether life was maintained by transplantation or
dialysis). The numbers of survivors at each time interval are shown.

plantation can offer a chance of life not different from that of dialysis alone,
and better rehabilitation. Moreover experience has shown that the ‘load’ on
health resources (finances, man-power, facilities) of a policy stressing dialysis
as the primary goal, is so great that constraints appear and result in an inability
to treat all patients with renal failure.

Reference

1 Mathew, TH, Marshall, VC, Vikraman, P, Hill, AVL, Johnson, W, McOmish, D,
Morris, PJ and Kincaid-Smith, P (1975) Lancet, ii, 137