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Cyclosporin A and Kidney Transplantation: Present Status of a Partially Randomized Trial

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REPORTS concerning the use of Cyclosporin A (CY-A) in kidney transplantation in nonrandomized trials with considerable numbers of patients and long follow-up have been presented by several centers, some with exciting results,[1,2] some with less exciting results.[3,4] Randomized trials have been under way for a more limited time, and it is not until recently that the first report was made.[5] This is an update of the trial conducted at the University of Pittsburgh.

MATERIALS AND METHODS

Between March and August 1981, 40 patients received primary kidney transplants. By randomization, and six compassionate releases, 21 patients were treated with CY-A and prednisone (Pred), and 19 with azathioprine (Aza) and Pred. Parallel to the partially randomized trial in primary cadaver kidney transplantation, a nonrandomized trial was conducted using the following described CY-A-Pred protocol alone in patients being retransplanted. Twenty-two patients received their second or third graft.

Prior to the transplant, all primary graft recipients were given at least three blood transfusions. In all recipients, some attempts were made to match donors and recipients, resulting in a HLA-A,B match of 1.3 ± 1.3 (SD). The DR matching was random. The recipients were 8–64 years of age, with a mean of 33 years.

The CY-A and Pred treatment principles were as follows: CY-A was given 17.5 mg/kg/day orally as one dose prior to the transplant. This dose was then maintained postoperatively, half of the dose being given every 12 hr. Reductions of this dose were made at the occurrence of toxicity. One gram of methylprednisolone was given i.v. during the transplantation. Postoperatively, prednisolone was administered 200 mg/day with daily reductions of 40 mg/day until day 6, when 20 mg/day was given. This was the maintenance dose for 2 months, whereafter the prednisolone was reduced to 10 mg/day if kidney function was satisfactory. In face of rejection, the intravenous and oral steroid schedule described was repeated. The treatment is described in detail elsewhere.[1] The Aza- and Pred- treated patients were treated in the customary way for kidney transplantation at the University of Pittsburgh Medical School.

RESULTS

Partially Randomized Patients

In 21, the primary cadaveric graft recipients receiving treatment with CY-A and Pred, only one kidney has been lost. This was due to an accidental donation of a blood group A kidney to a blood group O recipient, resulting in a renal vein thrombosis.

In 19, the primary cadaveric recipients treated with Aza and Pred, six (32%) grafts have been lost to date.

Nonrandomized Patients

Of the 22 patients that have been retransplanted, three (14%) have lost their grafts. Two of the grafts were lost by rejection, and one by a technical error resulting in a renal artery thrombosis.

Mortality and Morbidity

There have been no deaths in any of the patient groups. A pneumocystis carinii infection has occurred in one of the primary graft recipients treated with CY-A and Pred. The infection has been successfully treated with antibiotics.

Table 1. Follow-Up at 0.5–6.5 Months

	Randomized (Primary Cadaveric Transplants)		Nonrandomized (Cadaveric Retransplants)
	CY-A	Azathioprine	CY-A
Transplants	21	19	23
Lost grafts	1	6	4
Mortality	0	0	0

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DISCUSSION

The interpretation of these results must be made cautiously because of the short follow-up (2 weeks to 6½ months). Still, it excites high hopes in CY-A as a major immunosuppressive agent for the future.

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