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The International Transplantation Society, the American Society of Transplant Surgeons, and the American Society of Transplant Physicians strongly condemn the recent scheme for commercial purchase of organs from living donors. This completely morally and ethically irresponsible proposal is rejected as abhorrent by all members of the Transplantation Societies.

Removal of organs and transplantation of organs obtained commercially will not be handled by any member of the Transplantation Societies, and anyone doing so will be expelled.

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# Cyclosporine A in Kidney-Transplanted Patients Without Initial Diuresis

W. Siebert, W.-D. Illner, H. Zöttlein, L. A. Castro, and W. Land

CYCLOSPORINE A (CsA) as a new immunosuppressive drug has improved the results of organ transplantation remarkably. Its main side effect is nephrotoxicity. Therefore, the administration of CsA was restricted to recipients with primary functioning grafts within the European Multicenter study.<sup>1</sup>

In contrast to that study, we started to treat all our patients with CsA, regardless of whether they had immediate graft function or not. Preliminary results of that pilot study have already been published elsewhere.<sup>2</sup> Using that policy of CsA treatment it was of interest to find out the alternating effects between cold ischemia time, incidence of ATN, and graft survival rate, as well as long-term graft function and hepatotoxic side effects.

The following questions have been investigated:

- (1) Does a long cold ischemia time lead to a higher incidence of primarily nonfunctioning allografts in CsA-treated patients, compared with conventionally treated patients?
- (2) Is there any influence of nonfunctioning kidneys on the graft survival under CsA therapy?
- (3) Is the posttransplantation function of renal cadaveric allografts under CsA therapy poorer in patients having received nonfunctioning kidneys?
- (4) Is there a hepatotoxic side effect of therapeutic relevance?

## MATERIALS AND METHODS

One-hundred forty-six cadaveric renal transplantations were performed at our center between March 1982 and March 1983 (1. transplant: 116, 2. transplants: 20, 3 transplants: 4, kidney and pancreas transplants: 6). All patients received at least 3 blood transfusions before transplantation.

### Basic Immunosuppressive Treatment

CsA: 17 mg/kg body weight (b.w.) → 8–6 mg/kg b.w.  
MP: 8 mg/kg daily from the beginning.

### Antirejection Therapy

(1) rejection episode: 3 × 500 mg methylprednisolone (MP). (2)/(3) rejection episode: ALG + 120 mg MP over a period of 7 days.

### Historical Controls

Historical controls were 277 patients treated with steroids and azathioprine (July 1976–February 1982). Definition of the incidence of primarily nonfunctioning kidneys (ATN-kidneys): renal transplantation is a recipient requiring at least one postoperative hemodialysis.

### Preservation of all Renal Transplants

Preservation of all renal transplants was accomplished by using Euro-Collins' solution, for perfusion and after ice storage.

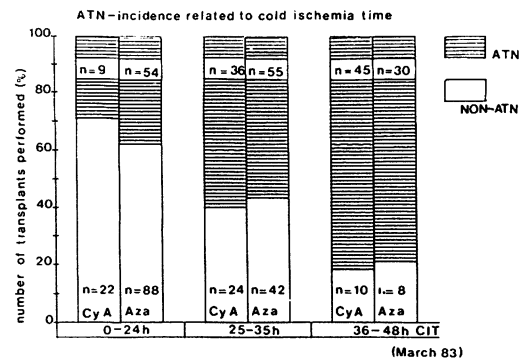


Fig. 1. ATN-incidence (=rate of primarily nonfunctioning kidneys) related to cold ischemia time (CIT). CyA, cyclosporine.

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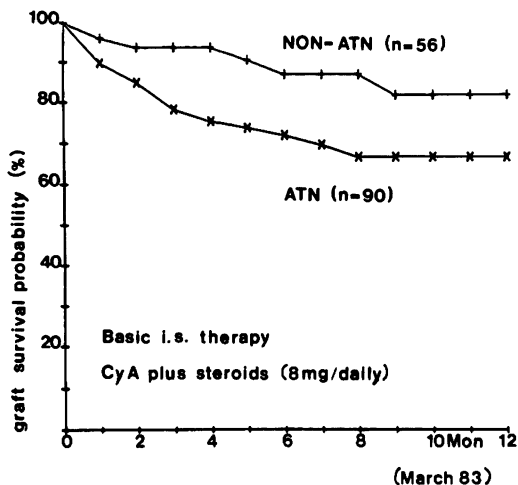


Fig. 2. Graft survival rate in correlation to primarily functioning (nin-ATN)-nonfunctioning (ATN) kidneys. CyA, cyclosporine.

RESULTS AND CONCLUSION

With regard to our experience, there is a correlation between length of cold ischemia time and the incidence of nonfunctioning ATN-kidneys, regardless of whether the recipients were treated with CsA or conventionally (Fig.1). The number of ATN-kidneys increased from 29% in the group with the shortest cold ischemia time up to 81.8% for kidneys with an ice storage time over 36 hr. It has to be discussed that the high incidence (61.6%) of primarily nonfunctioning kidneys may be ascribed to the "Munich Model" of organ harvesting, since about 70% of all donor nephrectomies are performed in smaller community hospitals. In those hospitals the adequate handling of donors may not be sufficient (especially in intensive care).

The results of cadaveric renal transplantation under CsA therapy are significantly

Table 1. Graft Survival for ATN and non-ATN (March 1982 to March 1983)

	Lost	Functioning	Total		
ATN	24	66	90	26.7%	61.6%
Non-ATN	6	50	56	10.7%	38.4%
Total	30	116	146	20.5%	100%

Bis: CsA + steroids.

Table 2. Graft Function in CsA-Treated Recipients With/Without ATN Kidneys

	Creatinine (mg/100 ml) 1 month	Creatinine (mg/100 ml) 3 months	Creatinine (mg/100 ml) 6 months
ATN	3.10	2.39	2.35
	V = 3.43	V = 1.28	V = 0.78
	SDEV = 1.85	SDEV = 1.13	SDEV = 0.88
	n = 55	n = 52	n = 25
Non-ATN	2.12	2.17	1.99
	V = 0.80	V = 1.33	V = 1.08
	SDEV = 0.89	SDEV = 1.15	SDEV = 1.04
	n = 35	n = 35	n = 24

V, variance. SDEV, standard deviation. N, number of patients.

Only patients with functioning grafts were observed at least 6 months after transplantation.

poorer in patients having received ATN-kidney transplants (15.2% difference in the graft survival rate; *p* = 0.04) (Fig. 2 and Table 1). The graft survival probability for 12 months is only 66.8% for ATN-kidneys, but 82% for non-ATN-kidneys.

Further controls after 18 or 24 months will show whether the preliminary results remain the same.

A short cold ischemia time in cadaveric renal transplants is certainly of great importance (fewer ATN-kidneys, better results), especially under CsA therapy (nephrotoxic side effects).

As regards the late graft function (6 months pop.) under CsA treatment, there seems to be no statistical difference between

Table 3. Hepatotoxic Side Effect of CsA in Patients With/Without Preexisting Liver Disease

	Bilirubin (mg/100 ml) 1 Month	Bilirubin (µg/100 ml) 3 Months
Preex. hepatopathy	1.02	0.98
	V = 0.19	V = 0.45
	SDEV = 0.44	SDEV = 0.67
	n = 17	n = 15
Without preex. hepatopathy	1.14	0.92
	V = 0.05	V = 0.19
	SDEV = 0.23	SDEV = 0.44
	n = 62	n = 56

V, variance. SDEV, standard deviation. n, number of patients.

nonfunctioning (ATN)-kidney transplants and non-ATN-kidneys (Table 2).

If the organs are not rejected before 6 months, the creatinine values are nearly the same in ATN and non-ATN-kidneys, but 26.7% of the ATN-kidneys are rejected within 6 months posttransplant.

Relevant hepatotoxic side effects could not

be seen in our patients neither in the group with, nor in the group without preexisting hepatopathy (Table 3).

Summing up, there remains the relevance of a short cold ischemia time (under 30 hr) for a lessened incidence of primarily nonfunctioning kidneys and a better graft survival.

#### REFERENCES

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