Abstract# 456

THE BENEFIT OF CHILD-TO-PARENT KIDNEY DONATION: AN ANALYSIS OF UNOS DATA. Eric P. Cohen,[1] John D. Rosendale,[2] Christine J. Haywood-Bong,[2] Sundaram Hariharan.[1] [1]*Division Of Nephrology, Medical College of Wisconsin, Milwaukee, WI;* [2]*United Network of Organ Sharing, Richmond, VA.*

Unwarranted risk to the younger donor has been assumed by some nephrologists to preclude child-to-parent kidney donation. This has not been tested. We used UNOS data to analyze the benefit of child-to-parent (CTP) kidney donation in comparison to other living or cadaveric kidney donation. 56,873 primary kidney transplants (tx) between 1988 and 1998 were analyzed. Kidney tx types were child-to-parent (group I, n=3,797), other living donor (LD) (group II, n=8,284) and cadaveric donor (group III, n=44,792). Recipients were subdivided by age: 41-50, 51-60, and 61 or older. Additional variables such as· center volumes, donor and recipient gender or race, HLA mismatch, CIT, PRA, diabetic status, prior dialysis, and use of anti-rejection treatment were used for Cox and logistic regression analyses. Graft and patient half-lives were calculated. General results are shown:< P align= justify>

Group	*Graft Half Life (mo.)*	*Patient Half Life (mo.)*	
I (CTP)	116*	149	* P<0.01 vs Group III
II (other LD)	127*	205	
III (cadaver)	91	132	
For all recipients censored for death with a functioning graft			
I (CTP)	241**	-	p = ns
II (other LD)	231**	-	
III (cadaveric)	160	-	

Logistic regression for 1 year graft failure revealed lower graft failure rates with CTP compared to cadaveric tx (34%, P<0.05) and lower death rates (23%, P<0.05). Cox proportial hazard model for post-1 year revealed similar lower graft failure (18%, P<0.05) and death rates (13%, P<0.05). A surfeit of 0 mismatch tx in group II accounts for their advantage over group I. The 1 in 3,000 mortality risk from kidney donation translates to ~65 years of lost life in the 3,797 CTP kidney donors of this study. Because of the 17 month average gain in patient survival (149-132 mo.), we estimate ~5,500 patient-years of increased survival for the group of CTP versus cadaveric kidney tx in this study. This projected gain was seen in all age groups, but was smaller in diabetic recipients over age 60. We conclude that graft and patient survival is prolonged by using CTP compared to cadaveric kidneys. CTP kidney tx is well worth its risk, will tend to enhance organ supply, and should be considered whenever possible.

Abstract# 457

LONG-TERM RESULTS IN KIDNEY TRANSPLANTATION FROM HLA-IDENTICAL LIVING DONORS: A SINGLE-CENTER EXPERIENCE. Hiroaki Shimmura,[1] Kazunari Tanabe,[1] Tadahiko Tokumoto,[1] Nobuo Ishikawa,[1] Shohei Fuchinoue,[2] Hiroshi Toma.[1] [1]*Department of Urology, Kidney Center, Tokyo Women's Medical University, Tokyo;* [2]*Department of Surgery, Kidney Center, Tokyo Women's Medical University, Tokyo, Japan.*

Background: Due to the continuing shortage of cadaveric donors in Japan, living kidney transplantation has been carried out. Since living kidney transplantation is usually performed between parent and child, HLA-identical donor living kidney transplantation is uncommon. According to UNOS (United Network for Organ Sharing) data, 10-year graft survival was approximately 10% higher in HLA-matched cadaveric kidney transplantation than in HLA-matched transplantation. However the long-term results of kidney transplantation from HLA-identical living donors is still unclear. Therefore we compared the survival rate in HLA-identical and HLA-nonidentical living kidney transplantation.

Materials and Methods: One thousand and seventy-nine recipients who underwent living kidney transplantation at our institution between February 1983, and December 1999, were enrolled in this study. They were subdivided into an HLA-identical donor group (group 1, n=96) and an HLA-nonidentical donor group (group 2, n=983). All patients were treated with cyclosporine- or tacrolimus-based immunosuppression, including methylprednisolone and azathioprine or mizoribine

Results: The mean recipient age was 38.1 years in group 1 and 31.9 years in group 2 (not significant). The mean donor age was significantly lower in group 1 than in group 2 (44.3 years vs 53.5 years, respectively; p<0.001) Patient survival was not significantly different between the two groups (94.4% and 89.8% in group 1, 93.8% and 89.3% in group 2 at 5 and 10 years, respectively). There was a significant difference in graft survival between the two groups (87.5% and 74.8% in group 1, 75.7% and 57.2% in group 2 at 5 and 10 years, respectively, p = 0.0025). The incidence of acute rejection was 11.5% and 58.3% in groups 1 and 2, respectively (P = 0.001). Although a higher donor age was associated with poorer graft survival, after adjustment for donor age, graft survival was also higher in group 1 than in group 2 (P = 0.0195 by Cox regression analysis).

Conclusions: Although the incidence of acute rejection was much lower in HLA-identical living kidney transplantation, the 10-year graft survival was only 15% higher. Therefore it is speculated that the outcome of long-term living kidney transplantation would be affected more by a non-immunological factor than HLA-matching.

Abstract# 458

DECLINING INFLUENCE OF RACE ON THE OUTCOME OF LIVING DONOR RENAL TRANSPLANTATION. Stephen R. Smith,[1] David W. Butterly.[1] [1]*Department of Medicine, Division of Nephrology, Duke University Medical Center, Durham, NC.*

A racial disparity in graft survival for renal transplant recipients has been documented both for cadaveric and living donor transplants. In the present single center study we analyzed graft survival by race for recipients of living donor kidney transplants in three eras: 1985-1989, 1990-1994, and 1995-1998. Living donor transplants were selected for study to minimize confounding factors related to donor kidney condition and HLA matching. There was an intensification of the immunosuppressant regimen beginning in 1996 such that all patients received cyclosporine or tacrolimus with mycophenolate mofetil and prednisone. There were 76 black recipients and 174 white recipients with no difference in mean age, degree of HLA matching, or proportion of recipients with diabetes as the cause of end-stage renal disease. Using all data from 1985-1998, graft survival was numerically better for whites versus blacks for 0, 1, and 2 haplotype matched transplants, adjusting for age, gender, diabetes, and era of the transplant. However, when analyzed by era of the transplant, there was a temporal trend for a progressive decrease in the racial disparity in graft survival, such that no difference was apparent in the most recent era.

	1985-1989			1990-1994			1995-1998		
	N	1 yr graft surv	5 yr graft surv	N	1 yr graft surv	5 yr graft surv	N	1 yr graft surv	3 yr graft surv
Black	20	83%	39%	22	87%	68%	34	96%	94%
White	77	92%	78%	55	94%	82%	42	94%	79%

In confirmation of this effect, there was a significant race by era interaction (p<.04) on multivariable Cox proportional hazards analysis. The most recent data from the USRDS are consistent with this notion. Of those living donor recipients since 1990 who lost their grafts, the cause of graft loss was death with a functioning graft for 9/24 (38%) whites versus only 1/11 (9%) blacks. Immunologic graft loss was more common in blacks 7/11 (64%) than whites 9/24 (38%). Almost one quarter of the graft losses in both groups since 1990 were directly attributable to the patient having self-discontinued one or more of the immunosuppressant agents.

We conclude that improved immunosuppression and other factors have closed the outcome gap between blacks and whites receiving living donor kidney transplants.

CONCURRENT SESSION 24: IMMUNOSUPPRESSION II

Abstract# 459

RAPAMYCIN INHIBITS TUMOR GROWTH AND METASTASIS IN MICE BY ANTIANGIOGENESIS. Philipp v. Breitenbuch,[1] Markus Guba,[1] Edward K. Geissler,[1] Gudrun Koehl,[1] Stefan Farkas,[1] Carl Zuelke,[1] Mathias Anthuber,[1] Karl-Walter Jauch,[1] Markus Steinbauer.[1] [1]*Surgery, University of Regensburg, Regensburg, Germany.*

Background: Immunosuppressive drugs are effective in reducing rejection in organ transplantation. However, cancer development and recurrence are ominous risk factors for these immunocompromised patients. Here, we show that the new immunosuppressive drug rapamycin (RAPA) may have a unique ability to reduce the risk of cancer, while simultaneously providing effective immunosuppression. **Methods**: Balb/c mice were treated by daily i.p. injection of saline (control), RAPA (1.5 mg/kg), or cyclosporine (10 mg/kg, CsA). The effect of RAPA and CsA on metastatic tumor growth was tested after intraportal injection of syngenic CT-26 adenocarcinoma cells, and is expressed as the % of liver replaced by tumor (day 11). Also, the effect of RAPA and CsA on tumor growth and angiogenesis was evaluated in a dorsal skin-fold chamber by intravital microscopy (IVM). Besides direct tumor-vessel visualization, tumor size and vessel density were measured by IVM. Blood vascular endothelial growth factor (VEGF) levels were measured by ELISA. **Results**: RAPA inhibited, while CsA stimulated, liver metastasis of CT-26 cells (% liver replacement: saline=15±3, RAPA=1±1, and CsA=35±6; n=7). Histological analysis of livers showed small avascular metastases in RAPA-treated mice, whereas, CsA induced the growth of large vascular tumor masses. Compared to control mice, growth of tumor implants in dorsal skin-fold chambers on day 11 was reduced in RAPA-treated mice, and increased with CsA (tumor volume in mm^3: saline=158±32, RAPA=33±12, and CsA=207±80; n=7). Importantly, RAPA markedly inhibited, and CsA induced, tumor angiogenesis, as evidenced by lower and higher tumor-microvascular density, respectively (density in cm^{-1}: saline=116±9, RAPA=35±6, and CsA=179±14, n=7). All stated effects were statistically significant (P<0.05) and confirmed by direct IVM tumor visualization. A possible mechanistic link to the antiangiogenic RAPA effect was found through the reduced serum VEGF levels in RAPA-treated tumor-bearing mice (in pg/ml: saline=60±3, RAPA=32±2, and CsA=79±14; n=7). **Conclusion**· RAPA inhibits, while CsA promotes, tumor growth and metastasis in mice. Furthermore, the antitumoral effect of RAPA could be linked to VEGF antagonism. Therefore, treatment of transplant rejection with RAPA may have a distinct advantage over conventional CsA use when there is a relatively high risk for previous tumor recurrence or *de novo* cancer development.