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Abstract Title: Kidney Transplantation in Children and Adolescents   an Analysis of OPTN/UNOS database

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Body: It is very important to investigate whether specific pediatric allocation schemes can not only lead to minimization of waiting time, but also to better clinical outcomes for children with end-stage renal disease (ESRD).

Materials and Methods We analyzed the OPTN/UNOS data for all patients aged 2-20 years who received kidney transplants from living or deceased donors aged 5-35 years between January 1, 1994 and December 31, 2006. Multiple organ transplants were excluded from this study. The outcome of 4,125 deceased donor kidney transplants (DDKT) was compared with those of 6,456 living donor kidney transplants (LDKT) using univariate and multivariate Cox regression analyses.

Results Unadjusted graft survival rates of DDKT were significantly lower than those of LDKT (HR=1.53, P<0.001). Chronic rejection was reported in 416 (10.1%) of 4,125 DDKT group compared with 537 (8.3%) of 6,456 LDKT group (P<0.001). Among black recipients, 65 (3.3%) grafts were lost due to non-compliance as a contributory cause of failure compared with 126 (1.5%) among other races (P<0.001). A significantly lower incidence of non-compliance was observed in children (0.9%) compared with adolescent (2.2% in age 10-14, P<0.001) and high teens (2.0% age 15-20, P<0.001). Multivariate analysis showed that adjusted graft survival rates of LDKT were superior to DDKT (HR=1.22, P<0.001) after adjusting for recipient race, recipient age, regraft status, and HLA mismatch.

Results of univariate and multivariate analyses				
	Unadjusted HR (95% CI)	P value	Adjusted HR (95% CI)	P value
DDKT vs LDKT	1.53 (1.42-1.65)	<0.001	1.22 (1.12-1.34)	<0.001
Recip race Black vs others	2.01 (1.85-2.20)	<0.001	1.81 (1.66-1.98)	<0.001

Recip Age 10-14 vs 2-9	1.47 (1.30-1.66)	<0.001	1.43 (1.27-1.62)	<0.001
Recip Age 15-20 vs 2-9	1.91 (1.72-2.12)	<0.001	1.87 (1.68-2.08)	<0.001
Regraft vs primary	1.51 (1.35-1.68)	<0.001	1.39 (1.24-1.56)	<0.001
HLA mismatch (0-6)	1.14 (1.11-1.16)	<0.001	1.07 (1.04-1.10)	<0.001

Conclusion It is recommended that LDKT be offered first to children instead of DDKT.