KIDNEY TRANSPLANTATION IN CHILDREN AND ADOLESCENTS
– AN ANALYSIS OF THE OPTN/UNOS DATABASE

Brian E. Hardy, MD1, Tariq Shah, MD2, James Cicciarelli, PhD2, Kevin V. Lemley, MD1, Ian V. Hutchinson, PhD, DSc2, and Yong W. Cho, PhD2
1Children Hospital, Los Angeles, CA USA  and 2National Institute of Transplantation, Los Angeles, CA USA

Background
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).

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 (10.2%) of 4,061 DDKT group compared with 537 (8.4%) of 6,410 LDKT group (P<0.001). A significantly lower incidence of non-compliance was observed in children (1.0%) compared with adolescents (2.3% in age 10-14, P<0.001) and high teens (2.1% age 15-20, P<0.001). Among African American recipients, 67 (3.4%) grafts were lost due to non-compliance as a contributory cause of failure compared with 134 (1.6%) among other races (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.

Discussion
Despite improved early graft survival of pediatric kidney transplantation from deceased donor (91% at 1-year), the differences of long-term graft survival rates between deceased and living donor kidney transplant has not been reduced as shown in the Figure (4% at 1-year, 10% 5-year for unadjusted survival rates and 3% at 1-year, 6% 3-year, 9% 5-year adjusted survival rates).

Conclusion
It is recommended that a living donor kidney be the first option for children, instead of a deceased donor kidney.