

# Study examines factors in pediatric kidney transplant rejection

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Avoiding HLA-DR mismatching appears to be beneficial in pediatric kidney transplant patients, however the likelihood of finding a matching donor must be considered against the wait time for a possible donation, according to a report in the July issue of *Archives of Surgery*.

"Although avoiding HLA [human leukocyte antigen; cell surface antigens that regulate [host cell](#) responses to transplanted cells] antigen mismatching has been shown to benefit long-term graft survival, it has raised concerns about disadvantaging minority groups, particularly black patients, and [pediatric patients](#), who have severe growth retardation and other problems when dialysis is prolonged before transplantation," the authors write as background information in the article. "Currently, only HLA-DR matching is considered in the United Network for Organ Sharing (UNOS) organ allocation system."

To examine the relationship between HLA-DR mismatching and rejection, graft survival and sensitization in pediatric [kidney transplant patients](#), Lan T. Vu, M.D., and colleagues from the University of California at San Francisco, conducted a [retrospective cohort study](#) of 178 pediatric patients who underwent primary [kidney transplantation](#) with daclizumab induction therapy (to prevent [organ rejection](#)) at the University of California, San Francisco between 1997 and 2006.

One year after transplantation, 35 percent of the patients experienced rejection and at five year follow-up the frequency of rejection was 55 percent. Patients with 1- or 2-HLA-DRB1 mismatches had 1.7 times

greater odds of rejection than patients with no HLA-DRB1 mismatches. "This single-center study demonstrated that HLA-DRB1 mismatching increased the risk of allograft rejection by approximately 70 percent in children," write the authors.

Additionally, the 1- and 5-year graft survival rates for this study group were 97 percent and 82 percent respectively, and the authors found that the degree of HLA-DRB1 mismatches were not significantly related to graft failure. However, patients with a history of rejection had 7.7 times greater odds of graft failure than those who had not previously had an episode of rejection.

"In conclusion, this study showed that HLA-DRB1 mismatch was a risk factor for rejection and that rejection was a strong predictor of graft failure and sensitization in children," the authors write. "Based on the high incidence of rejection and sensitization seen with HLA-DR-mismatched kidneys observed in this series, we advocate expansion of the current artificial boundaries of donor pools to facilitate better matching and outcomes for young recipients."

**More information:** Arch Surg. 2011;146[7]:824-829.

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