



Kidney

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Kidney Transplants Are Faring Better Than Previously Reported, Long-Term Study Shows

A new study from Mayo Clinic, the largest long-term study of kidney transplant recipients published to date, demonstrates that progressive damage to kidney transplants may be less common and less severe than previously reported.

The study, involving 797 patients transplanted between 1998 and 2004 and followed for at least five years, shows that 87 percent of patients have mild or no signs of progressive scar damage to the transplanted organ when biopsied at one year after transplant. This number decreases only slightly at the five-year mark (83 percent). In contrast, studies of patients transplanted in the early 1990s suggested that a majority of transplanted kidneys were affected by progressive scarring that ultimately led to failure of the transplant.

"These results are significant and encouraging for everyone who is concerned about long-term survival for kidney transplant patients," says Mark Stegall, M.D., Transplant Surgeon at Mayo Clinic. "Our results suggest that transplanted kidneys may be doing better than reports from prior eras have indicated."

The Mayo Clinic study is published in the April 2011 issue of the *American Journal of Transplantation*.

Patients in the study received a kidney transplant at Mayo Clinic in Rochester, Minn. As part of normal follow-up care, the patients were encouraged to return for checkups at four months, one year, two years and five years post-transplant. Kidney biopsies, as well as renal function measures and other tests, were routinely taken at these milestones. While fewer patients returned for checkups over time, a subgroup of 296 patients underwent biopsies at the one-year and five-year mark, allowing the researchers the opportunity to directly monitor changes in the kidney over time.

Using this information, researchers found that 47 percent

of patients had minimal fibrosis (scarring) and 40 percent had mild fibrosis (87 percent total) one year after transplant. At five years after transplant, the numbers changed slightly, with 38 percent showing minimal fibrosis and 45 percent showing mild fibrosis (83 percent total). Results were similar for kidneys transplanted from living and deceased donors.

Dr. Stegall explains that minimal or mild fibrosis does not interfere significantly with kidney function. However, the development of severe scarring interferes with the kidney's ability to function and may result in the patient needing to start dialysis or undergo a second transplant.

Key to the study was that biopsies were routinely taken at post-transplant checkups. "That information allowed us to better understand what happens over those five years," says Walter Park, Mayo Clinic associate in the Department of Surgery, who analyzed the study data. "We now know that when patients have mild fibrosis at one year, it doesn't mean that it will progress to severe fibrosis at five years."

The research team will continue its work to learn more about why some kidneys still develop problems and how to avoid them. They also are interested in determining if kidneys that are doing well at five years are still prone to injury later.

Journal Reference: 1. M. D. Stegall, W. D. Park, T. S. Larson, J. M. Gloor, L. D. Cornell, S. Sethi, P. G. Dean, M. Prieto, H. Amer, S. Textor, T. Schwab, F. G. Cosio. The Histology of Solitary Renal Allografts at 1 and 5 Years After Transplantation. *American Journal of Transplantation*, 2011; 11 (4): 698 DOI: 10.1111/j.1600-6143.2010.03312.x