

Long-term benefits to the liver-kidney transplant

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A new study from physicians at Mayo Clinic in Rochester, found there may be long-term benefits to simultaneous liver-kidney transplantation versus kidney transplantation alone. The study, "Decreased Chronic Cellular and Antibody-Mediated Injury in the Kidney Following Simultaneous Liver-Kidney Transplantation" published recently in the journal *Kidney International*. Among patients with high and low levels of

donor-specific alloantibodies, the study showed those who received simultaneous liver-kidney transplants demonstrated a lower incidence of cellular and antibody-mediated rejection and chronic injury to the kidney, and demonstrated better overall kidney function five years post procedure.

Rejection of transplanted organs can occur within minutes (hyperacute rejection) or days to months (acute) after a transplant. In other cases, the damage takes place over a number of years and can lead to decreased kidney function and, potentially, rejection of the transplanted organ. This is known as chronic [kidney injury](#). While past research has shown that patients who have a combined or simultaneous liver-[kidney transplant](#) can be protected from hyperacute and [acute rejection](#), the recent Mayo Clinic study is the first to examine the potential long-term affects of simultaneous liver-kidney transplant and chronic kidney injury or function.

"We know that a healthy liver can reduce the levels of circulating donor-specific alloantibodies, which can lead to rejection of a transplanted organ in [kidney transplant recipients](#)," says Timucin Taner, M.D., Ph.D., a transplant surgeon at Mayo Clinic. "The findings from this study indicate that these positive benefits of a healthy liver in simultaneous liver-kidney transplants may be long-standing and that the liver may have a protective role against cellular rejection, as well"

Mayo Clinic physicians studied kidney biopsies from 68 consecutive liver-kidney [transplant recipients](#), 14 with donor-specific alloantibodies and 54 with low or no donor-specific alloantibodies. These results were compared to biopsies from patients who had received a kidney transplant alone, with a comparable break down of high and low donor-specific alloantibodies.

Factors studied included the overall five-year patient and graft or

transplant survival; the incidence of acute rejection and chronic kidney damage; and overall measures of [kidney function](#). Findings indicate that, at five years post-transplant in patients with donor-specific alloantibodies, those who had a simultaneous liver-kidney transplant kidney transplant had a:

- 7.1 percent rate of acute [rejection](#), compared to 46.4 percent for similar patients who had a kidney transplant alone
- No chronic transplant-related kidney injury, compared to 53.6 percent incidence of chronic injury for patients who had a kidney transplant alone
- Stable glomerular filtration rate (a measure known as a glomerular filtration rate [GFR], which indicates how well the kidneys are functioning), compared to a decline in GFR of 44 percent for patients who had a kidney transplant alone.

"This study is promising, because it demonstrates the power of a well-functioning liver allograft in modulating host immune responses and positively influencing long-term outcomes of the kidney transplant in simultaneous liver-kidney transplant recipients," says Dr. Taner. "More work is needed to better understand how far this benefit extends beyond transplantation, as well as how immunosuppressive therapies impact these outcomes."

More information: Timucin Taner et al. Decreased chronic cellular and antibody-mediated injury in the kidney following simultaneous liver-kidney transplantation, *Kidney International* (2016). [DOI: 10.1016/j.kint.2015.10.016](#)

Provided by Mayo Clinic

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