

# Anti-rejection drug may increase risk of diabetes after kidney transplant

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For patients undergoing kidney transplantation, treatment with the anti-rejection drug sirolimus may lead to an increased risk of diabetes, reports a study in the July Journal of the American Society of Nephrology (JASN).

"We demonstrated a robust association between sirolimus and diabetes after transplantation in a large group of kidney transplant recipients in the United States," comments Dr. John S. Gill of University of British Columbia, Vancouver. "The risk of diabetes was independent of other factors that are known to increase the risk of diabetes."

The researchers analyzed US Renal Data System data on approximately 20,000 Medicare beneficiaries undergoing kidney transplantation between 1995 and 2003. None of the patients had diabetes before their kidney transplant. Treatment with sirolimus was analyzed as a possible contributor to the risk of diabetes developing after transplantation, along with other known and potential risk factors.

"Sirolimus is a newer type of anti-rejection drug that has not been associated with diabetes in transplant recipients," Dr. Gill explains. "However, a number of animal studies and small clinical studies have suggested that sirolimus may increase the risk of diabetes."

The results suggested a higher rate of post-transplant diabetes among patients treated with sirolimus, compared to other anti-rejection drugs. Depending on which additional drugs they received, diabetes risk was 36

to 66 percent higher for patients receiving sirolimus.

Separate analysis of patients who stayed on the same anti-rejection drugs throughout the first year after transplantation showed similar results. The increase in risk was unrelated to any of the other drugs used in combination with sirolimus, or to other risk factors such as age, race/ethnicity, or obesity.

Diabetes is a serious and increasingly common complication occurring after kidney transplantation. "Patients who develop diabetes after transplantation have roughly the same risk of transplant failure as patients who develop acute transplant rejection," says Dr. Gill. Several factors are known to increase the risk of post-transplant diabetes, including some other anti-rejection drugs. The new report is the first large clinical study to suggest that sirolimus may be a risk factor as well.

"Further studies should be done to further clarify the risk of diabetes in sirolimus-treated patients," Dr. Gill adds. He also notes some important limitations of the study, including the fact that it was based on a review of previous data and limited to Medicare patients.

The study entitled, "Sirolimus is Associated with New-Onset Diabetes in Kidney Transplant Recipients," is available online at [jasn.asnjournals.org/](https://jasn.asnjournals.org/) and will appear in print in the July issue of JASN.

Source: American Society of Nephrology

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