

Antibody response may lead to narrowed arteries and organ rejection

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Kidney transplant recipients who develop antibodies in response to receiving new organs can develop accelerated arteriosclerosis, or narrowing of the arteries that supply blood to the kidney, according to a study appearing in an upcoming issue of the *Journal of the American Society Nephrology (JASN)*. The results indicate that arteriosclerosis resulting from such donor-specific antibodies may play an important role in organ rejection following transplantation.

Antibody-mediated transplant rejection—a process that occurs when a transplant recipient mounts antibodies against a new organ—can contribute to declining function and ultimately loss of transplanted kidneys. To study the effects of antibody-mediated [transplant rejection](#), Gary Hill, MD (Hôpital Européen Georges Pompidou, APHP, in Paris, France), Alexandre Loupy, MD, PhD (Hôpital Necker, APHP in Paris, France), and their colleagues examined kidney biopsies from 40 transplant patients who mounted antibodies directed against their transplanted kidney and 59 patients who did not.

The investigators found that narrowing of the arteries significantly progressed between three and 12 months after transplant in the antibody-positive patients but not in the antibody-negative patients. In those patients who did not develop antibodies, narrowing of the arteries progressed at approximately one third the rate of patients who did develop [antibodies](#).

In the antibody-positive patients, narrowing of the arteries in the

transplanted kidneys was much worse than expected based on the donor's age and translated to approximately 28 years of "aging" in the first year after transplantation. "This accelerated arteriosclerosis can now be seen to form part of the rejection process, and it will probably be found to contribute to the ultimate decline of kidney function," said Dr. Hill.

The study's results should spark considerable interest in the importance of arteriosclerosis following kidney transplantation. "Acceleration of arteriosclerosis was a totally unexpected finding, an important one since it broadens our thinking about what constitutes [transplant](#) rejection," said Dr. Hill.

More information: The article entitled, "Donor-Specific Antibodies Accelerate Arteriosclerosis after Kidney Transplantation," will appear online on April 14, 2011, [doi 10.1681/ASN.2010070777](https://doi.org/10.1681/ASN.2010070777)

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