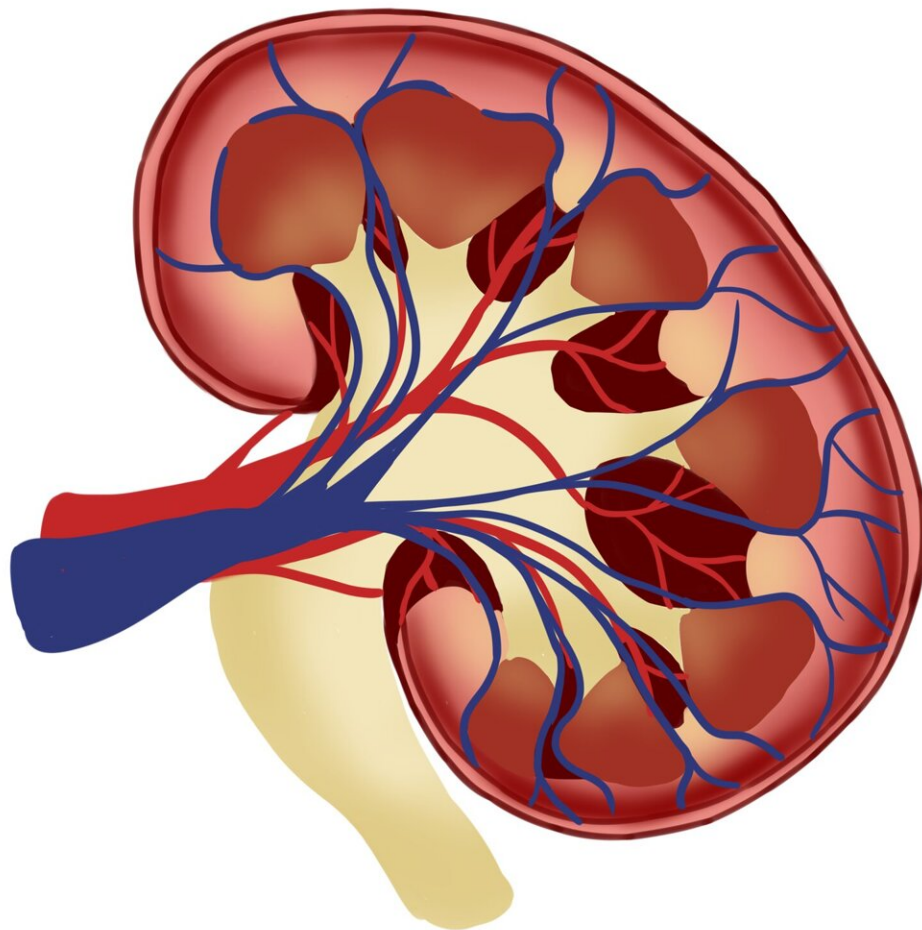


Research team reports on safe use of HIV and hepatitis C co-infected donor kidneys for transplant

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For VCU Health Hume-Lee Transplant Center organ transplant specialists, the work is not only about performing lifesaving surgeries.

Researchers at Hume-Lee are always looking for ways to expand the availability of organs to those in need. The number of people on the national waiting list for transplants far exceeds the number of organs available for transplant.

In other words, patients around the country wait for an organ that may never come.

Living donation is one way of improving those odds. And another? Finding ways to use organs that surgeons or patients might be hesitant to accept.

Hume-Lee's latest in a series of related studies is looking at transplanting kidneys from deceased donors that are infected with both HIV and hepatitis C into recipients living with HIV.

"Traditionally, patients with HIV have been disadvantaged for almost all health care access. Across the country, these patients have a lower rate of transplants when compared to patients without HIV," said Gaurav Gupta, M.D., chair for the Division of Nephrology and Hume-Lee's co-medical director of [kidney transplantation](#).

VCU Health is one of several health systems studying these types of kidney transplants, according to the United Network for Organ Sharing (UNOS). Gupta believes his team's published research is the first study of its kind using a week-long treatment to prevent the spread of disease in transplant patients.

In a [December letter to the editor](#) published in the *American Journal of Transplantation*, Gupta and his team offered insight into their research,

"Ultrashort Direct-acting Antiviral Prophylaxis for HIV and Hepatitis C Virus Co-Infected Donor Positive to HIV-positive Kidney Transplants."

Studying transplants with HIV-positive donors and recipients

In 2018, VCU Health announced its participation in [clinical research](#) exploring transplanting kidneys from deceased HIV-positive donors into HIV-positive patients. That work is performed under the HIV Organ Policy Equity (HOPE) Act, a 2013 law calling for the use of organs from HIV-positive donors for transplantation into HIV-positive candidates under approved research protocols designed to evaluate the feasibility, effectiveness and safety of such organ transplants.

Hume-Lee is one of only 30 centers in the country—and the only center in Virginia—approved to perform these types of transplants. When it comes to studying co-infected kidney transplants, Hume-Lee is one of a handful of centers researching transplanted kidneys with both HIV and hepatitis C, according to UNOS.

"This procedure does require a specialized expertise, which many centers don't have," Gupta said.

Many people living with HIV suffer from kidney diseases due to the long-term effects of HIV medications and will eventually require a kidney transplant. Co-infections are also common in this traditionally complex patient population. According to the [Centers for Disease Control and Prevention](#) one in five patients with HIV also have hepatitis C.

Hume-Lee has developed and studied a unique process behind the safe and effective transplantation of hepatitis C kidneys from a deceased

donor into a recipient who does not have hepatitis C. The center's protocol, which requires patients to receive antiviral medication prior to the transplant to prevent disease transmission, allows most patients to avoid costly hepatitis C treatment. Study results showed that after successful treatment there is an extremely low chance of hepatitis C recurrence in the recipient's bloodstream—about 5%.

Latest research on co-infected kidney transplants

Now, Gupta and a team of Hume-Lee researchers are essentially combining their knowledge from those studies into a third project: transplanting kidneys from deceased donors with both HIV and hepatitis C into HIV-positive patients.

The goal: prevent the spread of hepatitis C, and safely expand the donor pool with organs that other centers may not have the expertise or willingness to accept for recipients.

The Hume-Lee team has performed three transplant surgeries on patients with HIV who received kidneys infected with both HIV and hepatitis C. Before the transplant, all patients received a 7-day treatment of sofosbuvir and velpatasvir, antiviral medications to prevent hepatitis C infection. Patients also received medications to prevent organ rejection.

None of the patients developed hepatitis C after the transplants.

"There are currently no published series on the utilization of co-infected kidneys anywhere else in the world," Gupta said, noting how Hume-Lee's treatment approach to these transplants is different from other centers due to the seven-day prophylactic measures used to prevent infections.

The research was conducted by a multidisciplinary care team

specializing in kidney health, infectious diseases and surgery. Before, during and after the transplants, the patients were closely monitored and evaluated.

Overall, their study shows that kidney transplants from donors with both HIV and hepatitis C can be done safely and effectively with a short course of medication to prevent hepatitis C infection. The transplanted kidneys performed well in all patients with no reported issues from the co-infected organ.

Follow-up visits ranged from 9 to 26 months, and all of the patients have survived without any problems related to hepatitis C transmission. Their HIV treatment also continued to work effectively.

"This initial experience demonstrates successful and safe transplantation from HIV/HCV-co-infected donors with a cost-effective short 7-day perioperative course," Gupta and his study co-authors wrote in the letter to the editor.

What's next: Expanding organ and care access

Studies like these can expand organ access to those in need. Particular to kidneys, there are more than 88,000 people in the U.S. waiting for an organ. Last year, nationwide, more than 27,000 kidneys were transplanted. Hume-Lee performs about 500 total transplants a year, of which more than half are kidneys.

"We're pushing the boundaries of what is possible, while doing so safely," Gupta said. "People living with HIV who need a kidney need to feel hope. And we are committed to serving this patient population."

More information: Irfan Moinuddin et al, Ultrashort direct-acting antiviral prophylaxis for human immunodeficiency virus and hepatitis C virus coinfecting donor positive to human immunodeficiency virus-positive kidney transplants, *American Journal of Transplantation* (2023). DOI: [10.1016/j.ajt.2023.12.008](https://doi.org/10.1016/j.ajt.2023.12.008)

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