8 Days of Hep C and Cholesterol Meds Blocks Chronic Infection in Transplantees

This rapid regimen could open the door for more transplantations of HCV-infected organs.

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The recipients of transplanted organs from donors who had hepatitis C virus (HCV) either cleared or did not acquire the virus when they were treated with just eight days of a combination of direct-acting antivirals (DAAs) and the cholesterol medication Zetia (ezetimibe) in a recent small study.

The treatment was given hours prior to and for seven days following transplantation.

Such a rapid treatment greatly lowers the cost of therapy, which typically runs for at least four weeks with a standard DAA regimen for those receiving HCV-infected organ transplants.

Jordan Feld, MD, MPH, the R. Phelan chair in translational liver disease research at the University of Toronto and research director at the Toronto Centre for Liver Disease, presented findings from the study at the Annual Meeting of the American Association for the Study of Liver Diseases in Boston (The Liver Meeting).

Historically, organs from donors with hep C have been rejected. But with the advent of DAA treatment in recent years, research has increasingly shown that HCV-infected organs can be transplanted safely into recipients who do not have hep C. Those individuals can then receive DAA treatment and clear the virus following transplantation.

The recent sharp increase in overdose deaths resulting from the expanding opioid epidemic has led to a rise in potential organs for donation from people who had hep C, who are often young and otherwise healthy.

“We had done a previous trial treating HCV after transplant. It was generally effective, but there

were some challenges," Feld said in a press release. "There were some drug interactions, and we had two patients relapse after a full course of therapy. We thought that if we could prevent transmission, we could avoid all of these problems. By adding an entry inhibitor [Zetia] and preloading the liver with DAAs, we thought that treatment could be significantly shortened, and our data support that that is indeed the case."

Typically used to manage high blood lipids, Zetia blocks a cholesterol receptor that HCV uses to enter liver cells.

For their study, Feld and his colleagues considered lung, heart, kidney or kidney-pancreas transplantations from donors with HCV. The recipients were treated with Mavyret (glecaprevir/pibrentasvir) plus Zetia six to 12 hours before their transplant surgery and daily for seven days following the operation, either orally or via a nasogastric tube if needed.

For lung transplantation, a procedure known as ex vivo lung perfusion, which reduces swelling of the organ while it is outside the donor's body, was employed for a six-hour period if required. Otherwise, standard cold preservation was used for the organs.

The organ recipients received HCV viral load testing daily for 14 days after the transplant and then underwent weekly testing for 10 weeks.

Thirteen people without hep B participated in the trial. They received organs from nine donors who had the virus, including five lung, five kidney, two heart and one kidney-pancreas transplants. The participants had a median age of 60 years old. Eleven were male, and 11 were white. The median HCV viral load of the donors was about 170,000.

Six (46%) of the participants had a detectable but unquantifiable HCV viral load (meaning below 15) the first day after their transplant surgery. Five of those individuals had an undetectable viral load by day 4 after their operation.

Four (31%) of the transplantees developed a quantifiable viral load at any point after their surgery, with the highest viral load hitting 912,000. Even so, these individuals' viral load declined rapidly and was unquantifiable by the fourth day following surgery for all of them.

Three of the four people who developed the transient quantifiable viral load received a kidney transplant while the fourth received a kidney-pancreas transplant.

The study authors found that no other factors were associated with developing a quantifiable viral load following surgery.

None of the participants experienced a viral relapse through a median 10 weeks of follow-up.

One of the individuals who received a lung transplant died of sepsis 10 weeks after surgery. This person never had a detectable viral load.

The treatment proved well tolerated, and there were no other serious adverse health events among the participants.

"Transplant recipients are understandably nervous about accepting organs from people with HCV infection," said Feld. "This very short therapy allows them to leave [the] hospital free of HCV, which is a huge benefit. Not only is it cheaper and likely safer, but the patients really prefer not having to worry about HCV with all of the other challenges after a transplant."

To read a press release about the study, click here.

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