Transplanting Hep–Positive Kidneys Is Cost-Effective

Researchers crunched the numbers for transplanting kidneys from donors with hep C and then treating the virus in the recipient.

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The practice of transplanting kidneys from donors who have hepatitis C virus (HCV) and then treating the virus in the recipient is cost-effective provided it averts at least two years on the transplant list.

Publishing their findings in the American Journal of Transplantation, researchers used mathematical modeling to compare: 1) transplanting HCV-positive kidneys and then treating the transplantee with 12 weeks of Zepatier (grazoprevir/elbasvir); or 2) having individuals stay on the transplant list to receive a kidney from an HCV-negative donor and waiting an additional one, two, three, four or five years while on dialysis.

The individuals in the model were 18 to 65 years old and did not have diabetes.

The model was based on the Canadian health care system, but researchers believe its findings are generalizable to the United States. Cost figures factored into the model included an $88,811 for one year of dialysis and $109,427, $26,595 and $24,297 for the first, second and third year of medical care post-transplant, respectively. Zepatier treatment cost $60,300.

Cost-effectiveness analyses such as these use as a key measurement the cost to provide one additional quality-adjusted life year (QALY), a composite measurement of increased life span and improved health. In this model, the researchers used a cost of $50,000 as the threshold to determine whether the money required to provide one additional QALY was cost-effective.

Transplanting HCV-positive kidneys cost $56,018 per additional QALY if doing so saved an individual from one year on the transplant list—a price just above the threshold for cost effectiveness. However, if such transplantation saved between two and five years on the transplant list, the cost for an additional QALY dropped below $50,000 and was therefore cost-effective.

If the cost to treat hep C dropped by 20 percent or more, transplanting HCV-positive kidneys would actually save money.

In the United States, a year of dialysis costs between $88,750 and $250,000. Consequently, the researchers theorized that if the higher end of this range were the true estimate, transplanting HCV-positive kidneys would be even more financially advantageous than in Canada, saving money.

To read the study abstract, click here.
