



Analysis of hepatitis C virus-positive organs in liver transplantation.

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Abstract

The authors of this study note that in liver transplantation (LT), the survival rates of hepatitis C virus (HCV)-positive donors and HCV-negative receivers are comparable to those of HCV-negative donors and recipients. Direct-acting antiviral (DAA) therapies have nearly 100% effectiveness in treating HCV. Between 2006 and 2016, the percentages of HCV-positive patients on the waiting list and HCV-positive LT recipients fell by 8.2 percent and 7.6 percent, respectively. Records from April 1, 2014, in which the donor and receiver were both at least 18 years old and had a positive HCV status, were the only ones eligible for the study. The analysis for this study was restricted to the first transplant recorded for each patient using a data element that documented the number of prior transplants for each recipient, although some recipients appeared multiple times in the data set. HCV-positive recipients or people with fulminant hepatic failure were the main beneficiaries of primary biliary cirrhosis among HCV-positive donors. However, there is still a reticence to use HCV-positive donor organs in HCV recipients due to clinical and ethical considerations. Similar survival rates between HCV-positive donors and recipients and HCV-negative donors and receivers illustrate the efficacy of these DAA regimens.

Key Words: Hepatitis C virus; Liver transplant; Graft survival; United network for organ sharing; Direct-acting antiviral

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Core Tip: The scarcity of viable organs, which is quite limited, the waiting lists that reflect chronicity and the increase in time to transplantation, and the rate of physical deterioration resulting in death while waiting for a helpful organ for transplantation, promote the search for new ways, strategies, and protocols to increase the group of donors acceptable for transplantation, such as donors in asystole, donors with tumor processes, or donors with previous infection. The application of antivirals against the hepatitis C virus (HCV), with unprecedented success in the elimination of the pathogen, has led to the use of HCV-positive donors as optimal donors for HCV-negative recipients, with survival similar to that of both HCV-negative donors and recipients, which supports the use of these HCV-positive donors without restrictions.

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TO THE EDITOR

We have read with great attention and particular interest the review by Dhaliwal A *et al*[1] entitled "Impact of the use of positive organs for hepatitis C in liver transplantation: Analysis of the database of the United Network for Organ Sharing". The study noted that the survival rates of hepatitis C virus (HCV)-positive donors and -negative recipients following liver transplantation (LT) are comparable to those of HCV-negative donors and recipients. On the other hand, direct-acting antiviral (DAA) therapies have a nearly 100% effectiveness rate in the treatment of HCV infection[2-4].

The proportions of HCV-positive waiting list patients and HCV-positive LT recipients decreased by 8.2% and 7.6%, respectively, between 2006 and 2016[5]. HCV recurrence post-LT was the most frequent reason for graft failure prior to the availability of DAA treatment and significantly decreased recipient survival in patients with HCV positivity compared to HCV-negative patients[6,7]. This HCV recurrence significantly impacted the allocation of HCV-positive donors, severely underutilizing these organs, especially in HCV-negative recipients. Due to the strong potency and low risk of side effects of this new generation of DAAs, there is an increasing propensity to use organs from HCV-positive donors, especially those with high virus loads[8,9]. The United Network for Organ Sharing (UNOS) database was utilized in this study to compare the survival rates of HCV-negative donors and recipients with those of HCV-positive donors and recipients[10].

The authors of this intriguing study used information from the UNOS registry, which includes information on every transplant in the country. Records from April 1, 2014, in which the donor and receiver were both at least 18 years old and had a positive HCV status, were the only ones eligible for the study. Although some recipients appeared many times in the data set, the analysis for this study was limited to the first transplant recorded for each patient using a data element that tracked the number of prior transplants for each recipient. The primary outcome was overall survival time as of the most recent patient follow-up on September 7, 2018, with death being indicated by the composite indicator of death and censoring for those who did not die throughout the trial period. The authors used log-rank tests and group survival estimates at various time points of monitoring after transplantation to compare overall survival between groups. The investigation comprised a total of 24512 transplants, with 253 people who received transplants from positive donors to negative recipients. The duration of cold ischemia was comparable across all groups. Following cirrhosis caused by HCV, cirrhosis caused by non-alcoholic steatohepatitis, and hepatoma as the most frequent primary diagnoses were alcoholic cirrhosis/acute alcoholic hepatitis. Looking at survival rates at 1-year, 2-year, and 3-year intervals revealed that the particular group with a positive donor and negative recipient had lower survival rates than the other three groups (negative donor and positive recipient; positive donor and negative recipient; positive donor and positive recipient) which were all close together.

HCV-positive recipients or people with fulminant hepatic failure were the main beneficiaries of primary biliary cirrhosis among HCV-positive donors. However, due to clinical and ethical considerations, there is still reticence to use organs from HCV-positive donors in HCV-positive recipients. In a study of 99 recipients of liver grafts from HCV-positive donors, Lai *et al*[11] found that HCV-positive donor graft recipients had significantly higher unadjusted rates of advanced fibrosis at 1 and 3 years than HCV-positive donor graft recipients. According to Khapra *et al*'s study of 29 HCV-positive donor liver graft recipients, they exhibited significantly greater fibrosis and a faster rate of development[12].

However, studies of single-center experiences and large public databases, such as UNOS and the Scientific Registry of Transplant Receivers, have shown that recipients of livers from HCV-positive and HCV-negative donors had the same results since the introduction of DAAs[13-15].

It should be mentioned that there is currently no recognized procedure. The people who participated in this research were in preventive therapy. The information was obtained from a large population-

based study based on a well-known UNOS database that included many Americans. The authors concluded that the survival rates of HCV-positive donors and recipients and HCV-negative donors and receivers are identical. More studies should be carried out in the future in more national and international transplant registries to confirm these points.

FOOTNOTES

Author contributions: Muro M and Legaz I designed the research, performed the research, and wrote and revised the letter.

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