Published in final edited form as:

Hepatology. 2018 August ; 68(2): 792–793. doi:10.1002/hep.30043.

Expanding Donor Pool for Liver Transplantation by Utilizing Hepatitis C Virus–Infected Donors for Uninfected Recipients

George Cholankeril, M.D.¹, Chiranjeevi Gadiparthi, M.D.², Donghee Kim, M.D.,Ph.D.¹, Aijaz Ahmed, M.D.¹

¹Division of Gastroenterology and Hepatology, Stanford University School of Medicine, Stanford, CA

²Division of Gastroenterology and Hepatology, University of Tennessee Health Science Center, Memphis, TN

TO THE EDITOR:

Using a Markov-based simulation model, Chhatwal et al.⁽¹⁾ demonstrated that transplanting hepatitis C virus (HCV)-positive livers into HCV-negative recipients can improve waitlist survival. We congratulate Dr. Chhatwal and colleagues on this important contribution.

However, we would like to make a few constructive suggestions:

1. The model is constructed under the assumption that receiving an HCV-positive liver is associated with a higher risk for graft failure as was experienced during the interferon era. However, recent data from the United Network for Organ Sharing (UNOS)⁽²⁾ registry have suggested that HCV-positive recipients demonstrate comparable, if not marginally improved, short-term graft and patient survival rates during the direct acting antiviral (DAA) era.^(2,3) Therefore, improved outcomes may be expected in HCV-negative recipients undergoing liver transplantation (LT) with HCV-positive donors.
2. The article correctly states that the clinical benefit of receiving an HCV-positive donor liver may not be accurately determined by Model for End-Stage Liver Disease (MELD) score alone. Similarly, it may not be prudent to apply the same MELD cut-off score of 20 to all UNOS regions with constantly varying donor pool, waitlist additions, MELD at transplant, MELD exception population, etc. As shown in Figure 3, the magnitude of benefit was dependent on the UNOS region and, in fact, a few UNOS regions may have benefitted by a MELD cutoff of 18.
3. Furthermore, the attempt to stratify clinical benefit of utilizing HCV-positive donors by UNOS region may not be feasible because of the inconsistencies in the comfort level of LT team from one center to the other, even within the same UNOS region. In addition, some transplant centers may not be comfortable using

Potential conflict of interest: Dr. Ahmed consults for, advises for, and received grants from Gilead and Intercept. He consults for and advises for AbbVie, Jensen, and Shire.

HCV-positive donors because of relative abundance of HCV-negative donors in that UNOS region, whereas UNOS regions with organ shortage may be more aggressive in using HCV-positive donors. Another real-life issue is the utilization of HCV-positive donors across porous UNOS regional boundaries from a relative donor abundant region to donor shortage region.

4. Finally, the potential addition of HCV-positive donor livers to the “extended criteria donor” (ECD) list may not be suitable. ECD usually refers to donors over the age of 60 years or between 50 and 59 years with two to three comorbidities. Currently, a significant number of HCV-positive liver donors are procured from drug overdose victims who are younger and without comorbid medical conditions. A donor with an increased infection risk may not fulfill the requirements for ECD.⁽⁴⁾ This analysis should further adjust for the donor risk profile associated with HCV-positive and HCV-negative donor livers.

Finally, for years we have used hepatitis B virus (HBV) core antibody–positive donor livers with dormant HBV and committed transplant recipients to lifelong antiviral therapy to suppress HBV reactivation without achieving a cure. A standardized informed consent and education of the transplant community are needed given that HCV is no longer the leading indication for LT in the United States.⁽⁵⁾

REFERENCES

- 1). Chhatwal J, Samur S, Bethea ED, et al. Transplanting HCV-positive livers into HCV-negative patients with preemptive antiviral treatment: a modeling study. *HEPATOLOGY* 2017 12 9. doi: 10.1002/hep.29723 [Epub ahead of print]
- 2). Cholankeril G, Li AA, March KL, et al. Improved outcomes in HCV patients following liver transplantation during the era of direct-acting antiviral agents. *Clin Gastroenterol Hepatol* 2018;16:452–453. [PubMed: 28838786]
- 3). Cholankeril G, Li AA, Yoo ER, Ahmed A. Direct-acting antiviral therapy and improvement in graft survival of hepatitis C liver transplant recipients. *Transplantation* 2017;101:e349. [PubMed: 28846556]
- 4). Verna EC, Goldberg DS. Hepatitis C viremic donors for hepatitis C nonviremic liver transplant recipients: ready for prime time? *Liver Transpl* 2018;24:12–14. [PubMed: 29160931]
- 5). Cholankeril G, Ahmed A. Alcoholic liver disease replaces hepatitis C virus infection as the leading indication for liver transplantation in the United States. *Clin Gastroenterol Hepatol* 2017 12 1 pii: S1542–3565(17)31418–0. doi: 10.1016/j.cgh.2017.11.045 [Epub ahead of print]