**Name of Journal: *World Journal of Hepatology***

**Manuscript NO: 34317**

**Manuscript Type: Letters to the Editor**

**Changing landscape of hepatitis C virus-positive donors**

Kling CE *et al.* Changing landscape of HCV positive donors

**Catherine E Kling, Ajit P Limaye, Lena Sibulesky**

**Catherine E Kling, Lena Sibulesky,** Division of Transplant Surgery, Department of Surgery, University of Washington, Seattle, WA 98195, United States

**Ajit P Limaye,** Division of Allergy and Infectious Disease, Department of Medicine, University of Washington, Seattle, WA 98195, United States

**Author contributions:** Kling CEwrote the paper and conducted research; Limaye AP designed research and reviewed the manuscript; Sibulesky L designed research and reviewed the manuscript.

**Conflict-of-interest statement:** The authors declare no conflicts of interest. No funding was received for this research.

**Open-Access:** This article is an open-access article which was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

**Manuscript source:** Unsolicited manuscript

**Correspondence to:** **Lena Sibulesky, MD, Assistant Professor,** Division of Transplant Surgery, Department of Surgery, University of Washington Medical Center, 1959 NE Pacific Street, Box 356410, Seattle, WA98195, United States. [lenasi@uw.edu](mailto:lenasi@uw.edu)

**Telephone:** +1-206-5987797

**Fax:** +1-206-5984287

**Received:** April 12, 2017

**Peer-review started:** April 14, 2017

**First decision:** May 9, 2017

**Revised:** May 11, 2017

**Accepted:** May 30, 2017

**Article in press:**

**Published online:**

**Abstract**

With the introduction of the new highly effective antiviral therapies, there has been a dramatic increase in the use of the hepatitis C virus (HCV)-positive livers in HCV-positive recipients. In the majority of studies, HCV positivity was defined as a donor testing HCV Ab positive. In 2015, all Organ Procurement Organizations were mandated to perform and report HCV Nucleic Acid Amplification Testing (NAT) results on all deceased and living donors. Studies are not yet available on how organs are being utilized based on NAT status and whether NAT status affects recipient outcomes. Further studies are needed to maximize the use of these organs.

**Key words:** Hepatitis C virus aviremic; Heptitis C organ utilization; Hepatitis C positive recipients; Liver transplantation

**© The Author(s) 2017.** Published by Baishideng Publishing Group Inc. All rights reserved.

**Core tip:** For many years hepatitis C (HCV) positive livers have been used with caution in carefully selected mostly HCV-positive patients. With the introduction of the new highly effective antiviral therapies discard rate of HCV-positive livers, although improved, continues to be high. On August 10, 2015, the United Network for Organ Sharing mandated all Organ Procurement Organizations to perform and report HCV Nucleic Acid Amplification Testing (NAT) results on all deceased and living donors. We believe further research in the outcome of viremic and aviremic HCV livers is needed so that the utilization of these organs can be maximized in HCV NAT + and potentially HCV NAT - recipients.

Kling CE, Limaye AP, Sibulesky L. Changing landscape of hepatitis C virus-positive donors. *World J Hepatol* 2017; In press

**To the Editor**

In the face of liver graft shortage, increasing numbers of extended criteria or marginal grafts are being used. Such grafts include those from donors after circulatory death, older donors, livers with steatosis, and livers from donors infected with hepatitis C. For many years, hepatitis C (HCV) positive livers have been used with caution in carefully selected mostly HCV positive patients.

In the recent study Bowring et al. noted that with the introduction of the new highly effective antiviral therapies, there has been a dramatic increase, from 6.9% to 16.9%, in the use of the HCV-positive livers in HCV-positive recipients. The authors demonstrated that the allograft survival in HCV-positive recipients was similar for patients who received an HCV-positive liver and those who received an HCV-negative liver. Despite a better use of these organs, the reluctance to utilize these livers continues, demonstrated by the 1.7 times higher discard rate when compared to non-infected liver allografts[1].

In the majority of studies, HCV positivity is defined as a donor testing HCV Ab positive. However, there is variability among HCV Ab positive donors - some donors are actively viremic and hence are HCV Ab positive and RNA positive by Nucleic Acid Amplification Testing (NAT), while others are Ab positive but aviremic and NAT negative. Approximately 10%-25% of people will spontaneously clear the virus without treatment[2,3] and thus would be Ab positive NAT negative. Other donors have cleared the virus with treatment. Sustained virologic response, defined as aviremia 24 wk after completion of antiviral therapy for chronic HCV infection, would also result in Ab positive NAT negative serostatus, and relapse and thus transmission of infection is expected to be minimal.

On August 10, 2015, the United Network for Organ Sharing mandated all Organ Procurement Organizations perform and report HCV NAT results on all deceased and living donors[4]. As a result, transplant centers must specify whether candidates who are listed as accepting livers from HCV Ab positive donors are willing to accept organs from NAT positive and/or NAT negative donors. Studies are not yet available on how organs are being utilized based on NAT status and whether NAT status affects recipient outcomes, but given the difference in viremic status between the two populations, there likely is a difference.

As a result of these changes in donor testing and recipient listing, and in the era of new DAA therapies, we believe further research in the outcome of viremic and aviremic HCV livers is needed so that the utilization of these organs can be maximized in HCV NAT + and potentially HCV NAT- recipients.

**REFERENCES**

1 **Bowring MG**, Kucirka LM, Massie AB, Luo X, Cameron A, Sulkowski M, Rakestraw K, Gurakar A, Kuo I, Segev DL, Durand CM. Changes in Utilization and Discard of Hepatitis C-Infected Donor Livers in the Recent Era. *Am J Transplant* 2017; **17**: 519-527 [PMID: 27456927 DOI: 10.1111/ajt.13976]

2 **Villano SA**, Vlahov D, Nelson KE, Cohn S, Thomas DL. Persistence of viremia and the importance of long-term follow-up after acute hepatitis C infection. *Hepatology* 1999; **29**: 908-914 [PMID: 10051497 DOI: 10.1002/hep.510290311]

3 **Micallef JM**, Kaldor JM, Dore GJ. Spontaneous viral clearance following acute hepatitis C infection: a systematic review of longitudinal studies. *J Viral Hepat* 2006; **13**: 34-41 [PMID: 16364080 DOI: 10.1111/j.1365-2893.2005.00651.x]

4 **UNet System Notice**. Upcoming Waitlist and DonorNet changes will reflect policy changes regarding infectious diseases screening [Internet]. UNOS System Notices-General Notice. 2017 [cited 16 March 2017]. Available from: URL: https://portal.unos.org/ViewSystemNotice.aspx?id=3074

**P-Reviewer:** Ferraioli G, Niu ZS, Wang SK **S-Editor:** Ji FF **L-Editor: E-Editor:**

**Specialty type:** Gastroenterology and hepatology

**Country of origin:** United States

**Peer-review report classification**

Grade A (Excellent): A, A

Grade B (Very good): 0

Grade C (Good): C

Grade D (Fair): 0

Grade E (Poor): 0