

**Maine Medical Center  
Maine Transplant Program  
Policies and Procedures  
Hepatitis C Virus (HCV) and Kidney Transplantation**

**Purpose**

To define:

- Pre-transplant testing of kidney transplant candidates for HCV antibody,
- HCV-positive Kidney Transplant Selection Criteria,
- Treatment options for HCV RNA-positive kidney candidates, and
- Post-transplant management of HCV RNA-positive recipients
- Define parameters whereby HCV+ kidneys can be offered to HCV- recipients

**Background**

Hepatitis C is a risk factor for poor outcomes after kidney transplantation due to:

- New-onset diabetes after transplant
  - Accelerated atherosclerotic cardiovascular disease and cardiovascular mortality
- Liver failure
- Hepatocellular carcinoma
- Premature kidney allograft failure
  - Thrombotic microangiopathy
  - Immune complex glomerulonephritis

**Procedures**

**Pre-transplant Testing**

All kidney transplant candidates are screened for the presence of HCV antibody.

If positive, HCV RNA NAT is obtained

- HCV Ab +/-RNA -:
  - i. Ultrasound to rule out Chronic Liver Disease/Portal hypertension
  - ii. If negative, proceed with routine transplant evaluation
- HCV Ab +/-RNA +:
  - i. Ultrasound to define liver/spleen anatomy and determine presence of portal hypertension
  - ii. HCV Genotype analysis
  - iii. Hepatology consultation
    - Assessment of liver fibrosis by Fibroscan or MR elastography
    - Liver biopsy unless non-invasive hepatic lab and imaging are completely normal

**HCV+ Recipient Selection Criteria**

*Inclusion Criteria:*

- Compensated liver disease
  - i. Normal serum albumin
  - ii. Absence of coagulopathy
  - iii. Absence of portal hypertension

*Exclusion criteria*

- Decompensated liver disease

- iv. Encephalopathy
- v. Coagulopathy: INR>1.8
- vi. Hypoalbuminemia
- Portal Hypertension
  - i. Ascites
  - ii. Varices
- Advanced stage fibrosis
  - Bridging fibrosis alone may not be a contraindication to kidney transplantation as long as the liver disease is compensated and there is no evidence of portal hypertension

### **Treatment for HCV D-/R+ RNA+ Kidney Recipients:**

Treatment deferred to hepatology with management plan to be co-developed with transplant team with specific reference to achieved GFR and pharmacokinetic drug interaction considerations.

- Protease inhibitors (Simeprevir, telaprevir and boceprevir) are profound inhibitors of CYP450 3A/4 thus major risk of CI toxicity and adverse kidney survival. To be avoided after transplantation

### **HCV+ Kidney to HCV- Recipient**

#### *Rationale*

May be considered to reduce waiting time for kidney transplantation  
Places recipient at risk of developing HCV viremia  
HCV genotype of the donor usually unknown prior to transplantation

#### *Procedure*

Informed consent is required  
Referral to GI for consultation and Fibroscan prior to transplantation with HCV+ organ  
Post transplant testing to include HCV RNA NAT at weekly intervals  
Genotyping once NAT+  
Antiviral therapy to be commenced without delay if/when NAT+  
Mavyret and Harvoni are the preferred antivirals  
Prior authorizations to be done by the transplant program.

Original Date: 3/24/2014

Revised Dates: 6/9/17, 7/27/20, 5/5/21

Policy Champion: John P. Vella, MD, FACP, FRCP, FASN, FAST – Director, Nephrology and Transplantation