Hepatitis-C and Liver Transplantation

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- 3.9 million (1.8%) Americans have been infected with HCV 1988-1994 - Third National Health & Nutrition Examination Survey (NHANES III)

- Chronic liver disease is the 10th leading cause of death – 25,000 deaths annually

- 40% of chronic liver disease is HCV-related – 8,000 - 10,000 deaths each year

- End-stage liver disease is the most frequent indication for liver transplantation

- According to CDC, the number of deaths attributable to HCV-related chronic liver disease could substantially

Risk factors for hepatitis C

- Blood transfusions or organ transplants before 1992
- Using illicit injectable & intranasal (?) drugs
- Long-term hemodialysis
- Clotting factor before 1987
- Sharing personal products with infected people
- Peripartum
- Sexual activity
- Tattooing or body piercing

Adapted from Hoofnagle JH. Hepatology. 1997;26(suppl 1):1S.
Cirrhosis due to Hepatitis-C virus is the most common indication for liver transplantation.

**Timing of Transplantation**

When an individual will derive the maximum benefit from receiving a new liver:

**Goal:**
- Avoid premature transplant when liver disease is not advanced
- Avoid waiting until patient is too sick or has developed liver cancer

**Signs & Symptoms of Advanced HCV**

- Cirrhosis
- Intractable Ascites
- Hepatic encephalopathy
- Jaundice
- Impaired synthetic function
- Severe malaise, fatigue
- Hepatic cancer
- Esophageal Varices

**Prioritization on the waiting list**

MELD – a risk based priority system

- Based on INR, bilirubin and creatinine
- Predicts short term mortality for patients with chronic liver disease
- Exception score given for hepatocellular carcinoma
Optimal Time

- MELD score of 15 or above
- Evidence of decompensation
  - muscle wasting
  - ascites
  - encephalopathy
  - variceal bleeding

Liver transplantation is not a cure for Hepatitis-C.
Viral recurrence is almost universal.
Damage to the new liver occurs routinely.

Immunosuppression and Hepatitis-C

- Avoid antibody induction therapy
- Taper off steroids
- Avoid bolus steroids for acute cellular rejection
Predictors of recurrent Hepatitis-C after liver transplantation

• Donor age
• Recipient HCV viral load
• Rejection episodes
• Warm ischemia time greater than one hour
• Cold ischemia time greater than ten hours

Risk factors for Retransplantation

• ICU bound
• Age > 50 years
• Non – white recipient race
• Viremia
• Donor age > 50 years
Conclusion

- Early recurrence of HCV usually occurs after liver transplantation.
- The long term impact of HCV on the transplant liver remains uncertain.
- There is an urgent need for better antiviral drugs to treat patients before and after liver transplantation.
- Retransplantation is a high-risk operation and needs to be performed early before the patient decompensates.