INTRODUCTION

Liver Transplantation:
• Hepatitis C infection is the most common indication for liver transplantation in the U.S.
• HCV infection of the liver allograft occurs within hours from circulating virions.
  - Serum RNA levels are observed in the first several weeks.
  - Acute hepatitis occurs in 2-6 months.
  - Chronic hepatitis occurs in 3-9 months.

**Persistence of HCV infection is the rule after transplantation due to immune suppression.**

Chronic recurrent HCV infection post transplantation
• There are four distinct patterns of recurrent chronic HCV in the liver allograft.
  - Usual chronic HCV (>70%)
  - Fibrosing Cholestatic Hepatitis C (5-10%)
  - Plasma cell-rich HCV
  - HCV overlapping with rejection or autoimmune hepatitis

CASE PRESENTATION

History:
• 54-year-old woman with a history of chronic HCV infection complicated by cirrhosis and hepatocellular carcinoma.
• Liver transplantation (August 2014) from a CMV+, HCV+ donor.
• Post-transplant liver biopsy (11/11/13) showed recurrent HCV with mild activity (grade 2/4) and perportal fibrosis (stage 2/4).
• On January 19, 2014, presented with worsening malaise, fatigue, and jaundice.

Physical Exam and Labs
• Afebrile, lethargic, jaundiced with scleral icterus
• Hepatic Function Tests (1/21/14):
  - Albumin: 2.6 mg/dL (normal 3.5-5)
  - ALP: 602 U/L (normal 30-120)
  - AST: 46 U/L (normal 0-35)
  - ALT: 128 U/L (normal 0-38)
  - Bilirubin: 15.6 mg/dL (normal 0.3-1)
  - Direct bilirubin: 14.1 mg/dL (normal 0.1-0.3)
  - HCV Viral Load (1/20/14): 854,000 IU/mL

Diagnosis
• Fibrosing cholestatic hepatitis
  - Prominent lobular activity with apoptosis, hepatocyte feathery degeneration

Hospital Course:
• Patient was treated with sofosbuvir and ribavirin (1/24/14) however suffered acute kidney injury. Medications discontinued (2/4/14).
• HCV Viral Load (1/27/14): 2340 IU/mL

FIBROSING CHOLESTATIC HEPATITIS C
• A rare and severe form of recurrent chronic Hepatitis C which presents within 1 year post-liver transplantation.
• Distinctive characteristics:
  - Rapidly progressive with high rates of graft loss and mortality within the first year of diagnosis.
  - Massive HCV RNA levels in the peripheral circulation.

Risk Factors
• Over-immunosuppression
  - High dose cytolytic therapy, HIV, other solid organ transplant
• High MELD score
• Older donor age

Histology
• Prominent “ductular reaction” resembling biliary obstruction
• Cholestasis
• Hepatocyte feathery degeneration with lobular disarray
• Sinusoidal/pericellular fibrosis

Criteria for Diagnosis
• At least ¾ of the characteristic histological features
• Timeframe of >1 month after liver transplantation

Prognosis
• Mean survival time: 8 months before death or re-transplantation

Treatment
• Successful treatment with conventional HCV therapy is rare.
• Sofosbuvir and simeprevir are FDA-approved only for chronic HCV infection in native livers but provide an avenue for future study in transplant patients.

REFERENCES


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