

Follow-up of the Post-Liver Transplantation Patient

A Primer for the Practicing Gastroenterologist

Amanda Cheung, MD, Josh Levitsky, MD, MS*

KEYWORDS

• Liver transplantation • Immunosuppression • Outcomes • Prophylaxis • Screening

KEY POINTS

- Liver transplantation outcomes have improved; therefore, transplant recipients are living longer and the long-term effects of immunosuppression are becoming more evident.
- The risk of infection is greatest in the perioperative period but persists lifelong due to the use of immunosuppression.
- Long-term effects from the use of immunosuppression include metabolic syndrome, diabetes, hypertension, dyslipidemia, cardiovascular disease, renal dysfunction, osteoporosis, and malignancy.
- Liver transplant recipients require close monitoring to detect complications related to the transplant and long-term immunosuppression; regular physician visits are needed for screening and surveillance of complications.

INTRODUCTION

Liver transplantation outcomes have continued to improve, with the most recent data analysis estimating patient and graft survival rates of 92.2% at 6 months, 89.7% at 1 year, and 53% at 10 years (Fig. 1).¹ Until recently, the most common indication for liver transplantation has been chronic hepatitis C. With the recent advent of direct-acting antiviral therapy, the prevailing indication for liver transplantation will change in the near future, with a notable increase in nonalcoholic fatty liver disease (Fig. 2). Early posttransplant complications include primary graft dysfunction, acute cellular rejection, infections, hepatic artery thrombosis, portal vein thrombosis, biliary leaks, and biliary strictures. After the first year posttransplantation, modifiable risk

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Division of Gastroenterology and Hepatology, Northwestern University, 676 North Saint Clair, Suite 1400, Chicago, IL 60611, USA

* Corresponding author.

E-mail address: josh.levitsky@nm.org

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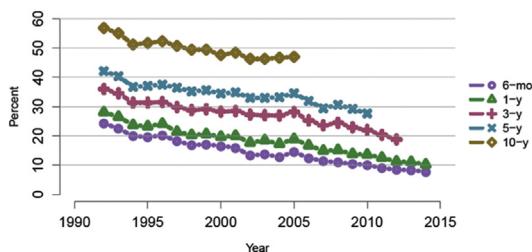


Fig. 1. Graft failure among adult deceased donor liver transplant recipients. (Data from Scientific registry of transplant recipients. Available at: http://srtr.transplant.hrsa.gov/annual_reports/Default.aspx. Accessed January 25, 2017.)

factors associated with higher mortality include hypertension, diabetes, renal insufficiency, and smoking. Based on data collected from the National Institute of Diabetes and Digestive and Kidney Diseases Liver Transplantation Database, the most common overall causes of death were hepatic (recurrent disease or liver failure) causes (23.9%), malignancy (18.7%), infection (15.9%), cardiovascular disease (12.2%), and renal failure (4.3%).² The cause of death differs in the early versus late postoperative periods, with a notable decrease in infection and increase in renal failure. In patients who survived 5 years after transplantation, the primary cause of death was attributed to hepatic causes (27.3%), malignancy (21.1%), renal failure (10.2%), cardiovascular disease (8.6%), and infection (8.6%).² Hepatic causes of death will likely decrease significantly in the near future since most of these deaths were related to the complications of hepatitis C recurrence; however, these cases will diminish since hepatitis C can now be successfully treated and cured in almost all recipients.

This review focuses on the complications seen after liver transplantation and the screening or surveillance needed to mitigate these complications. Malignancy, infection, cardiovascular disease, and renal failure are the most common causes of death and should be the focus of posttransplant care.

IMMUNOSUPPRESSION

Induction immunosuppression is used by up to 25% of liver transplant centers and includes antibody therapy with antithymocyte globulin and IL-2 receptor antibodies (basiliximab and daclizumab). The main classes of maintenance immunosuppressive

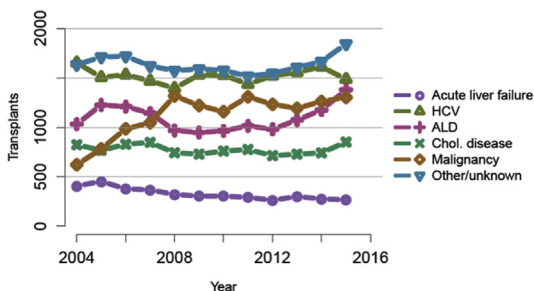


Fig. 2. Total liver transplants by diagnosis. ALD, alcoholic liver disease; HCV, hepatitis C virus. (Data from Scientific registry of transplant recipients. Available at: http://srtr.transplant.hrsa.gov/annual_reports/Default.aspx. Accessed January 25, 2017.)

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