Liver Transplantation for the Referring Physician

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KEYWORDS

• Child-Turcotte-Pugh • Donation after cardiac death • Extended criteria donor
• Fulminant hepatic failure • Hepatic artery thrombosis • Hepatocellular carcinoma

KEY POINTS

- Liver transplantation is currently the treatment of choice for patients suffering from the complications of end-stage liver disease, acute liver failure, and primary hepatic malignancy. Over the last 2 decades, as the success of liver transplant increased, the number of patients seeking liver transplant has also steadily increased.
- Management of chronic medical conditions and their risk factor modifications are critical to ensure continued excellent graft function and overall survival of the recipient decades after transplant.
- Recurrence of the primary hepatic disease can occur for all autoimmune-based liver diseases and viral hepatitis, with the most challenging problem being recurrent hepatitis C virus.
- With newer direct-acting antiviral agents being developed, we should be optimistic that successful treatment of recurrent hepatitis C virus with interferon-free regimens will be accessible and feasible in the near future.

INTRODUCTION

Liver transplantation is currently the treatment of choice for patients suffering from the complications of end-stage liver disease, acute liver failure, and primary hepatic malignancy. Over the last 2 decades, as the success of liver transplant (LT) increased, the number of patients seeking LT has also steadily increased. In 2013, 6455 LTs were performed in the United States, with an additional 15,700 people currently active on the waiting list.[1] A persistent problem in LT has been the shortage of donor organs relative to the increasing demand for transplant, making appropriate recipient selection a critical part of the transplant process. The authors discuss the indications for transplant, candidate selection, transplant listing, methods of expanding the donor pool to address the shortage of donor organs, disease-specific issues as they relate to transplant outcomes and long-term management, and posttransplant care and complications.

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INDICATIONS FOR LIVER TRANSPLANTATION

Liver transplantation is indicated for the treatment of all causes of end-stage liver disease, complications of decompensated cirrhosis, fulminant hepatic failure, metabolic syndromes of hepatic origin, and primary hepatic malignancies (**Fig. 1**, **Box 1**).

PROGNOSTIC MODELS FOR LIVER TRANSPLANTATION ALLOCATION

Cirrhosis is the common end-stage form of all etiologies of chronic liver disease and accounts for most adult LTs performed. Cirrhosis is classified into compensated and decompensated stages, which portend significantly different chances of survival (**Fig. 2**). Compensated cirrhosis without manifestations of portal hypertension carries a low risk of death. Decompensation is marked by a rapidly progressive decline in hepatic function with the development of complications of portal hypertension: ascites, variceal bleeding, and hepatic encephalopathy.[2,3] Natural history studies of cirrhosis find that the development of decompensation is associated with a decreased median survival from greater than 12 years to 2 years (see **Fig. 2**).

The high mortality rate associated with decompensated cirrhosis and the scarcity of donor organs make it essential that our system of organ allocation prioritizes those with the greatest need for transplantation. The first prognostic model used in this capacity was the Child-Turcotte-Pugh (CTP) score, which was originally developed for risk stratification before surgical shunt procedures (**Table 1**). It

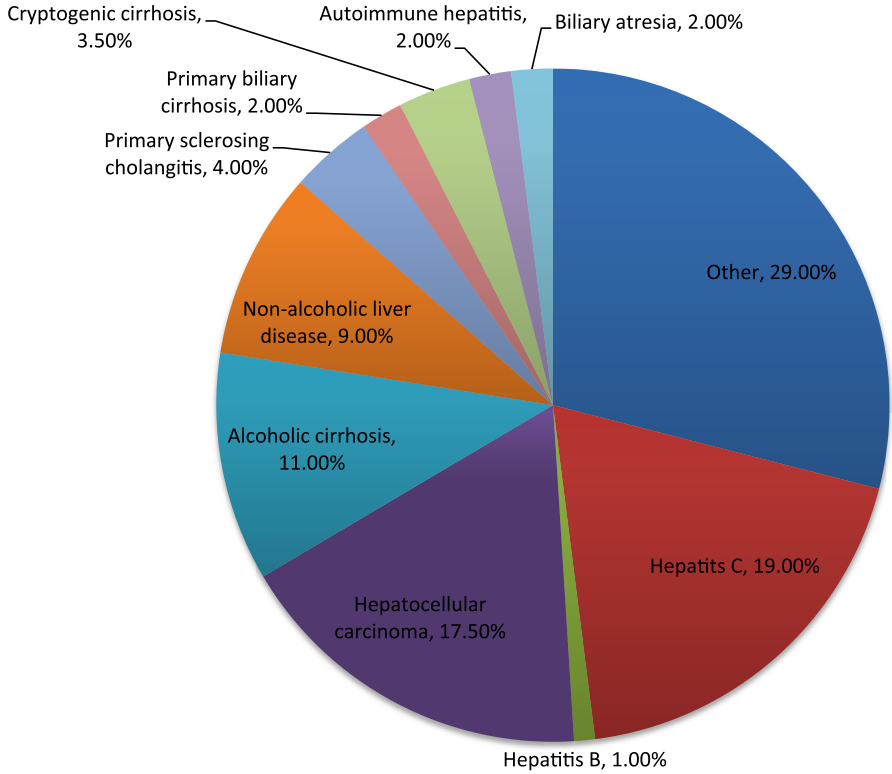

Fig. 1. Liver transplant by diagnosis, 2013. (*Data from* Organ procurement and Transplantation Network data as of July 8, 2014. Available at: http://optn.transplant.hrsa.gov. Accessed July 8, 2014.)