

Liver Transplantation

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Introduction

The replacement of a diseased liver with a healthy liver from another individual is known as liver transplantation or hepatic transplantation (allograft). Although the availability of donor organs is a major restriction, liver transplantation is a treatment choice for end-stage liver disease and acute liver failure. The surgery is complicated, requiring precision harvesting of the donor organ and meticulous impeccability. Hepatitis B virus infected patients with acute or chronic liver failure and/or primary liver cancer benefit greatly from liver transplantation. For the vast majority of patients, advances in antiviral prophylaxis avoid clinically relevant graft re-infection. Graft and patient survival have increased dramatically in the last decade, and transplantation for hepatitis B virus has shown promising results.

The first step in the diagnosis is to see if the patient has an irreversible liver disease that can only be treated with a new liver. As a result, those with diseases that originate outside the liver or have spread outside the liver are commonly regarded as poor candidates. Some examples include:

- someone with advanced liver cancer, with known/likely spread beyond the liver
- active alcohol/substance use
- severe heart/lung disease
- existing high cholesterol levels in the patient
- dyslipidemia

Despite the fact that liver transplantation is now a common procedure with well-defined indications and generally positive results, it still has its drawbacks. The scarcity of donors is still a major problem. Transplanted organs carry risks such as cancer, infection, metabolic disease, and autoimmune disease.

Organs from donors who have died of circulatory failure, from living donors, and from deceased donors have all been used to address the donor shortage.

Living donor liver transplantation (LDLT) has become a vital surgical choice for patients with end-stage liver disease, such as cirrhosis and/or hepatocellular carcinoma, which is mostly caused by one or more of the following: long-term alcohol use disorder, long-term untreated hepatitis C infection, and long-term untreated hepatitis B infection. The definition of LDLT is focused on the human liver's remarkable regenerative abilities and the widespread scarcity of cadaveric livers for transplant patients. LDLT involves surgically removing a slice of healthy liver from a living individual and transplanting it into a recipient after the recipient's diseased liver has been completely removed.

Over the last two decades, significant progress has been made in the area of liver transplantation. However, as a result of this development, a new set of problems has arisen: First, organ scarcity remains a significant constraint, accounting for a significant portion of wait-list mortality. Although living donation has successfully increased the total number of liver transplants performed in Asian countries, the number of such transplants in the Western Hemisphere has remained stagnant. As a result, over the last decade, there has been a concerted attempt to expand the deceased donor pool. As a result of this campaign, more liver allografts, as well as marginal and expanded criteria donors, have been used following donation after cardiac death (DCD). Improved understanding of the pathophysiology of liver allografts obtained after circulatory arrest has aided in the creation of mechanical perfusion strategies as well as better selection and management of DCD donors. Early results demonstrating the clinical utility of both hypothermic and normothermic perfusion, as well as their potential to influence patient survival and allograft function, have piqued interest. Second, long-term results of liver transplant patients have not substantially changed, as recipients continue to succumb to long-term immunosuppression complications including infection and malignancy.

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