



LIVER TRANSPLANTATION

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ARTICLE INFO

Article History:

Received 6th August, 2019

Received in revised form 15th

September, 2019

Accepted 12th September, 2019

Published online 28th November, 2019

ABSTRACT

As one of the most the largest and most complex organ in your body, the liver plays an essential role in quality of life. Liver transplantation may be give you better quality of life and help you live longer. However, it's important that you are aware of the complications related to major surgery, organ rejection, and possible side effects from the medications you will need to take after a liver transplant surgery. In this small review it has been highlighted for better understanding for a patient and relatives.

Key words:

Liver, transplant,immuno suppression.

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INTRODUCTION

Liver transplantation or hepatic transplantation is the replacement of a diseased liver with the healthy liver from another person (allograft). Liver transplantation is a treatment option for end-stage liver disease and acute liver failure, although availability of donor organs is a major limitation.

Definition

Liver transplantation is a surgery that removes a diseased liver and replaces it with a healthy don-or liver.

Lewis

Indication

- Chronic liver insufficiency
- Chronic liver disease with acute decomposition
- Acute liver failure
- Enzyme deficiencies
- Primary liver tumors

Contraindication

- Systemic infections: uncontrolled bacterial and fungal infections are absolute contraindication.
- Failure of another organ.
- Porto pulmonary hypertension: persistent pulmonary artery pressure > 50mmhg in the presence of pulmonary vascular resistance.
- Lack of commitment.
- Portal vein thrombosis.

Risk / Complication

- Graft rejection

Three types of graft rejection may occur: hyperacute rejection, acute rejection, and chronic rejection.

- Hyperacute rejection
- Acute rejection.
- Chronic rejection

Technique

Before transplantation, liver-support therapy might be indicated (bridging-to-transplantation). Artificial liver support like liver dialysis or bioartificial liver support concepts are currently under preclinical and clinical evaluation. Virtually all liver transplants are done in an orthotopic fashion; that is, the native liver is removed and the new liver is placed in the same anatomic location. The transplant operation can be conceptualized as consisting of the hepatectomy (liver removal) phase, the anhepatic (no liver) phase, and the postimplantation phase. The operation is done through a large incision in the upper abdomen. The hepatectomy involves division of all ligamentous attachments to the liver, as well as the common bile duct, hepatic artery, hepatic vein and portal vein. Usually, the retrohepatic portion of the inferior vena cava is removed along with the liver, although an alternative technique preserves the recipient's vena cava ("piggyback" technique).

Cooling

Between removal from donor and transplantation into the recipient, the allograft liver is stored in a temperature-cooled

preservation solution. The reduced temperature slows down the process of deterioration from normal metabolic processes, and the storage solution itself is designed to counteract the unwanted effects of cold ischemia. Although this "static" cold storage method has long been standard technique, various dynamic preservation methods are under investigation. For example, systems which use a machine to pump blood through the explanted liver (after it is harvested from the body) during a transfer have met some success

Living Donor Transplantation

Living donor liver transplantation (LDLT) has emerged in recent decades as a critical surgical option for patients with end stage liver disease, such as cirrhosis and/or hepatocellular carcinoma often attributable to one or more of the following: long-term alcohol abuse, long-term untreated hepatitis C infection, long-term untreated hepatitis B infection.

Donor Requirements

Any member of the family, parent, sibling, child, spouse or a volunteer can donate their liver. The criteria for a liver donation include:

- Being in good health
- Having a blood type that matches or is compatible with the recipient's, although some centres now perform blood group incompatible transplants with special immunosuppression protocols
- Having a charitable desire of donation without financial motivation

Complication

Living donor surgery is done at a major center. Very few individuals require any blood transfusions during or after surgery. All potential donors should know there is a 0.5 to 1.0 percent chance of death. Other risks of donating a liver include bleeding, infection, painful incision, possibility of blood clots and a prolonged recovery. The vast majority of donors enjoy complete and full recovery within 2–3 months.

Pediatric Transplantation

In children, living liver donor transplantations have become very accepted. The accessibility of adult parents who want to donate a piece of the liver for their children/infants has reduced the number of children who would have otherwise died waiting for a transplant. Having a parent as a donor also has made it a lot easier for children - because both patients are in the same hospital and can help boost each other's morale.

Benefits

There are several advantages of living liver donor transplantation over cadaveric donor transplantation, including:

- Transplant can be done on an elective basis because the donor is readily available
- There are fewer possibilities for complications and death than there would be while waiting for a cadaveric organ donor.

Post-Transplant Immunosuppression

Like most other allografts, a liver transplant will be rejected by the recipient unless immunosuppressive drugs are used. The immunosuppressive regimens for all solid organ transplants are fairly similar, and a variety of agents are now available.

Most liver transplant recipients receive corticosteroids plus a calcineurin inhibitor such as tacrolimus or ciclosporin, (also spelled cyclosporine and cyclosporin) plus a purine antagonist such as mycophenolate mofetil. Clinical outcome is better with tacrolimus than with ciclosporin during the first year of liver transplantation.

Orthotopic Transplant

An orthotopic transplant is the most common type of liver transplant. The whole liver is taken from a recently deceased donor.

Split Type of Liver Transplant

Split donation involves transplantation of a liver from a recently deceased individual to two recipients. This is possible if the next suitable recipients are an adult and a child. The donated liver will be split into the left and right lobes. The adult normally receives the larger right lobe and the child will receive the smaller left lobe.

Auxiliary Liver Transplantation

Auxiliary liver transplantation is a variety of liver transplantation where the recipient's own liver is not completely removed. Its purpose is to retain the native liver in case of spontaneous recovery or if there is a potential for future gene therapy in cases of hereditary or metabolic liver diseases (except primary oxalosis, Wilson's disease or tyrosinaemia in which there is a risk of cancer in the residual liver).

CONCLUSION

The prognosis following liver transplant is variable, depending on overall health, technical success of the surgery, and the underlying disease process affecting the liver. There is no exact model to predict survival rates; those with transplant have a 58% chance of surviving 15 years. Failure of the new liver occurs in 10% to 15% of all cases. These percentages are contributed to by many complications. Early graft failure is probably due to preexisting disease of the donated organ. Others include technical flaws during surgery such as revascularization that may lead to a nonfunctioning graft.

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How to cite this article:

Moirangthem Chanchan Devi *et al* (2019) 'Liver Transplantation', *International Journal of Current Medical and Pharmaceutical Research*, 05(11), pp 4750-4752.
