Living-related Liver Donation

The long waiting time for a liver transplant and the progressive liver dysfunction that occurs in this time has motivated many families to consider living donation. It should be noted, however, that not all candidates are suitable for this option.

Living donor transplants in children involve transplanting a small portion of the left lobe of the adult donor’s liver to an infant. Adult to adult living donor transplant is achieved by using the entire right lobe of the donor’s liver.

Not all potential living donors are suitable for donation and extra precautions are taken by the transplant team to ensure that the decision to donate is without coercion and is unconditional.

The living donation operation is major surgery and requires a five to 10 day hospitalization and two to three month period of recovery. The donor surgery has a very low risk of death. Within a few months, the donor’s liver regenerates to within 90 per cent of its original size.

Are any lifestyle changes required after a liver transplant?

Most liver transplant recipients are able to return to a normal and healthy lifestyle. Most report that they feel re-energized, have an improved quality of life and enjoy everyday activities once more. Liver transplant recipients are able to participate in normal exercise after their recuperation and several women have been able to conceive and have normal post-transplant pregnancies and deliveries.

Can there be a recurrence of the original disease in the transplanted liver?

It is improbable that the original disease will return to cause similar liver damage but it is possible. For example, a liver transplant for hepatitis C does not eradicate the illness. In many cases, the virus will re-affect the liver within one year. Antiviral therapy is now given to liver transplant recipients who have hepatitis C.

Patients with hepatitis B usually have their virus well controlled by antiviral drugs prior to transplantation. Some of the autoimmune diseases (PBC, PSC and autoimmune hepatitis) have been known to re-occur. For those patients whose liver transplant is unsuccessful, occasionally, a second liver transplant may be needed.

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In Canada, over 300 such operations are performed every year. Livers are donated either from individuals who have been declared brain dead and with the consent of their next of kin, or from a living donor such as a relative or friend.

Liver transplant centres match donors with recipients based on compatible liver size and blood type.

What diseases are most commonly treated by liver transplants?
The most common reasons for liver transplantation in adults include chronic viral hepatitis C and B, autoimmune hepatitis, primary biliary cirrhosis (PBC) and primary sclerosing cholangitis (PSC). In children, biliary atresia (failure of the bile ducts to develop and drain bile from the liver) is the most common indication for liver transplantation.

Are people with liver cancer considered for transplantation?
Most cancers of the liver begin elsewhere in the body and spread or “metastasize” to the liver. These cancers cannot be cured with a transplant. Other tumours which are confined to the liver may be treated with radio frequency ablation, chemo-embolization, resection or as part of a transplant. The choice of treatment depends on the size, number and location of the tumours. Not all liver cancers can be treated by liver transplantation. Only small, early tumours have an acceptable chance at success.

Are people with alcohol-related liver disease considered for transplantation?
Most people who develop cirrhosis of the liver due to alcohol misuse do not require a liver transplant. Abstinence from alcohol can lead to improvement in liver function by giving the liver an opportunity to regenerate. For those in whom prolonged abstinence and medical treatment fails to restore health, transplantation may be considered.

Patients who continue to drink alcohol despite medical advice are not considered for transplantation in Canada.

At what stage of liver disease is transplantation considered?
When medical therapy is effective in stopping the progression of liver disease, transplantation may be avoided or delayed. If a patient develops advanced disease, with impaired liver function, which is not reversible, liver transplantation should be considered. All patients receive a comprehensive medical evaluation before being placed on a transplant waiting list. The patient and/or family are extensively involved in the transplant assessment and decision making process.

What risks are involved?
A liver transplant is major surgery with an operation lasting between six and eight hours. As with any major medical procedure, liver transplantation has risks. These risks along with the benefits are carefully considered before a patient is placed on a waiting list for a new organ. A successful outcome depends upon many factors. Patients who enter surgery in a very debilitated state carry a higher risk of dying. Similarly, patients who are over the age of 65 and those who have other serious illnesses will find the transplant a greater challenge.

The waiting time for a new liver is uncertain and stressful. The sickest patients receive priority for a transplant. If patients and families are having difficulty in coping during the waiting phase, it is recommended that they seek the assistance of a qualified health professional.

What is the success rate?
This depends on many factors but in Canada, the average success rate for adults is between 85 and 90 per cent. These rates are similar for children.

What is involved after the operation?
After surgery, patients are taken to the Intensive Care Unit where they are placed on a machine which supports their breathing and is known as a mechanical ventilator. They are carefully monitored for signs of infection. Frequent tests are conducted to assess the functioning of their new liver.

Most patients spend one to three days in the ICU and are transferred to a step-down transplant unit. At this point, they are able to breathe on their own but will continue to have intravenous lines delivering medication. Following continued improvement and physiotherapy, patients usually leave the hospital after 10 to 14 days. They will be required to remain close to the transplant centre for approximately two weeks and will attend an outpatient clinic for continued monitoring of their new liver.

Most patients return to a good quality of life within three to six months after surgery.

What are the side effects of the anti-rejection medications?
All patients must take anti-rejection medications for life. There is a family of these medications and your physician will prescribe the most appropriate ones for you. These medications suppress the immune system, which enables your body to accept the new liver without attacking it. Many patients experience a rejection episode following a transplant. However, 90 per cent of these events are reversed with minimal alterations of medication.

Most patients are prescribed higher levels of anti-rejection medication immediately after surgery when the rejection risk is higher. These drugs are then gradually reduced to a maintenance dose in the weeks and months following a transplant. Among other side effects, anti-rejection medications can affect the kidneys and cause a rise in blood pressure. Patients are carefully monitored for these events and are treated accordingly.

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