What You Need to Know about Adult Liver Transplantation

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1. Introduction

The UCSF Liver Transplant Program was established in 1988. Since that time, we have performed over 2,500 transplants and have been designated a Center of Excellence. We are recognized nationally for the success of our program as well as the quality of care we provide our patients. Our program is committed to advancing scientific research and improving the national standard for transplant.

Because UCSF values research and innovation, you may be asked if you would like to sign a consent form to participate in one of our clinical trials some time in the future. This is voluntary and your refusal to participate will not affect the care you receive.

2. The Preliminary Process

During your Phase I Evaluation, we will be asking you to complete lab work and abdominal imagings studies and also meet with a transplant coordinator, a hepatologist, surgeon, social worker and financial counselor. If your appointment has been scheduled for a Tuesday, you can attend the Liver Transplant Support Group led by our social workers.

At our Selection Committee meeting, we will discuss your candidacy for transplant and inform you and your physician about our recommendations. If you are listed for transplant, we will ask you to complete Phase II of the evaluation.

Phase II consists of an EKG, echocardiogram, cardiac stress test, chest x-ray, colonoscopy, pap smear, mammogram, and chest and abdominal CT scans. Additional studies and blood tests depending on your age and other medical problems may be requested. We will inform you of your blood type, MELD score and list date, if applicable.

It is very important that you continue to follow up with both your primary care physician and your gastroenterologist. These providers should be your primary contact for care. If you are hospitalized or make a visit to the Emergency Room, you or someone caring for you should call to inform us as to where and why you have been admitted to the hospital.

Our ultimate goal for you

Our transplanted patients have an increased lifespan, improved quality of life and are no longer considered disabled. Therefore, we encourage our patients to go back to the work force and lead productive lives.

3. Requirements to be Considered for Transplant

The Liver Transplant Program at UCSF has certain requirements that a patient undergoing an evaluation must meet. You must not have any current medical problems that would prevent a successful transplant surgery. An example could be severe cardiac disease. You must be free of alcohol and drugs at least 6 months before you can be considered for a transplant. If you smoke, you must stop. When you meet with the social worker, you will be asked to sign a contract agreeing to be randomly screened for drugs and alcohol by UCSF.

We require our patients to attend Alcoholics Anonymous (AA) or Narcotics Anonymous (NA) and/or a formal alcohol or drug rehabilitation if there has been a prior drug or alcohol problem. The patient must provide documentation of attendance.

Adequate insurance coverage is another requirement. Without it, we cannot consider you for transplant. You must keep it current and inform us of any changes with your coverage. It is your responsibility to obtain the authorizations for your follow up appointments with us.

Patients will need a support system in place

When you are here for your Phase I evaluation, you must bring with you your support person(s) so that they can meet with the social worker. This individual must be available during your hospital stay to learn about the medications and care requirements when you are discharged from the hospital. Your support should be available 24/7 for at least 4-6 weeks after you have received your transplant. They will be expected to bring you to your follow up appointments, lab draws, re-admissions to the hospital and assist you at home. If the individual identified as your support changes, you must remember to inform the transplant center.

4. MELD Scores

All patients who are listed with a transplant center in the United States will be registered with the United Network for Organ Sharing (UNOS) using their Model for End Stage Liver Disease (MELD) score. The MELD score predicts the chance of a patient dying from liver disease and is calculated from a formula using three simple blood tests. The three blood tests used to calculate MELD are bilirubin, INR and creatinine.

The bilirubin causes jaundice/yellow eyes. The INR measures the ability of the blood to clot. The creatinine measures kidney function. A MELD score will range from 6 (less ill) to 40 (gravely ill). A liver is given to the patient with the highest MELD score at the time of donation.

MELD scores can increase or decrease over time. They are drawn regularly as determined by your physician and the severity of your liver disease. Failure to have labs drawn on time and reported to UNOS can result in the patient missing a liver offer.

Patients are given livers from the same blood type or a compatible blood type. The following is a list of blood types and the MELD scores that recipients must have in order to receive a liver transplant in our UNOS region, region 5:

Blood Type	MELD Score
AB	> 20
A	> 25
O	> 30
B	> 22

It is very important that you notify the Transplant Service at 1-800-548-3789 each time that you have MELD labs drawn. It is also important that you notify the Transplant Service of changes with your medical insurance coverage, phone numbers and also any time that you are in the Emergency Room or hospitalized. You may call the toll free number for any questions about your status.

5. The Surgery

During the transplant, the recipient's liver is removed cutting the blood vessels and bile duct. The new liver is transplanted by reconnecting the new liver to the blood vessels and bile duct. If the bile duct is diseased, a new bile duct will be made from a piece of bowel.

Most liver transplants require blood products. The most common received are red blood cells, plasma and platelets. All blood products are thoroughly screened, but there is a 1 in 500,000 chance of getting a disease from a blood transfusion.

The operation lasts about 4 to 8 hours. After surgery you are admitted to the ICU for 24 to 48 hours. The length of stay for most patients is 5 to 10 days. Discharge from the hospital depends on how the liver is functioning and your medical condition. Your support person(s) must be available before and after surgery to learn your medications and care requirements once discharged from the hospital.

While you are in the hospital, your care will be overseen by the surgeon as well as the hepatologist. You are also cared for by the doctors, nurses, social workers, pharmacists, discharge planners, physical therapists and nutritionists as needed.

6. Alternative Options

Living donor option

There are approximately 18,000 patients waiting for a liver transplant. Of these, approximately 6,000 patients receive a transplant each year.

In light of these statistics, an alternative to waiting on the list for a deceased liver transplant is to undergo a living donor transplant. A living donor liver comes from a family member, friend or spouse that has undergone a thorough work up to be cleared to safely donate a portion of his/her liver to you. We believe that every recipient has at least one potential living liver donor and we are here to help in that process. Since 1992, we have performed over 200 living donor transplants.

A live donor must be blood type compatible, less than 55 years of age, have no history of liver disease, IV drug use or alcohol abuse. They cannot be grossly overweight and both the recipient and donor must have adequate social support.

One of the advantages of undergoing a living donor transplant is that it allows the patient to receive a transplant before they are too sick. Another advantage is that it can reduce the number of complications and deaths that occur while waiting for a transplant. It is important to understand that there is risk to the donor.

High Risk Option

A "high risk" donor liver poses a higher risk of not functioning well or of transmitting disease to the recipient. However, it is an appropriate option for a patient who is very symptomatic with complications of liver disease, but whose MELD score is still too low to receive a donor offer. The Transplant Team will provide you with more information on this option and help you decide if it is right for you.

Disease Transmission in Donated Organs

All organs are carefully tested and screened prior to transplant for viruses, infections, cancers, etc. Despite this screening, in very rare circumstances, undetected viruses, infections or cancers can be transmitted to recipients.

7. Rejection, Infection and Other Complications

After surgery there can be early or late surgical complications. One of these possible complications is bleeding. Another concern is whether the new liver is working or if the blood vessel connections are intact. Wound infections, poor wound healing and bile leak problems are also monitored following the transplant.

Because transplant patients take medications to lower their immune defense, they are more susceptible to cancers—especially skin cancers. All patients should protect themselves from the sun when outdoors by using sun block or by covering their bodies with hats and clothing.

While most people lead normal and healthy lives after transplant, certain liver diseases can reappear in the new liver. One example is hepatitis C. The Transplant Team can advise you on the chance of recurrence of specific liver diseases. In cases where there is a risk of recurrence, the Transplant Team will monitor you very closely to help prevent recurrence.

Hepatitis C is a liver disease that accounts for half of all liver transplant patients. Transplantation will remove the diseased liver, but not the virus, thus the virus will re-infect the new liver. Unfortunately, it is possible for patients to lose their new liver to aggressive recurrent hepatitis C. The Transplant Team will manage the virus before and after transplantation, and the patient may need to get a liver biopsy every year for the rest of their life to check for damage.

Rejection

Your immune system protects your body from foreign invaders like viruses and bacteria. It will also consider your new liver as foreign and try to "reject" it. Your body will never forget that the liver is from another person and you will need to be on medications for the rest of your life.

Rejection is normal and can happen shortly after transplant or much later. This is diagnosed by blood work and by a liver biopsy.

The immunosuppression medications that you will be taking prevent rejection. They could be one or a combination of Prednisone, Mycophenolate Mofetil or Tacrolimus. Each medication is different and works at specific sites on the cells that are trying to reject the new liver.

As mentioned above, rejection is normal and happens in about one third of transplant patients usually within the first several weeks after surgery. It can also occur much later than this. Patients can avoid complications due to rejection by taking their immunosuppressive medications as recommended by the Transplant Team.

Infection

We try to protect the patient from infection by giving medications In order to prevent infection, it is important that you inform the Transplant Team if you have ever had tuberculosis (TB) or if you have ever had a positive TB skin test. Also, inform the team if you have not had the chicken pox. After transplantation, you should avoid hand contact with people who are sick, and make sure to wash your hands frequently.

Side effects of the medications

Immunosuppressive medications come with side effects. If the patient is having side effects, the dosage can be decreased in order to decrease or eliminate the side effects. However, it is important that the patient does not change the dosage of their medications without consulting the Transplant Team.

Side effects may include: kidney problems, tremors, headaches, high blood pressure, high potassium, high blood sugar, high cholesterol, abdominal pain, diarrhea, changes in blood cell counts and/or increased risk of some cancers.

8. Frequently asked questions

Question	Answer
What are my chances of living 5 years?	75% of patients will be alive in 5 years.
Will I be able to go back to work?	Yes
Will I be able to exercise normally?	Yes
When am I too old for transplant?	Depends upon your physical condition rather than your actual age
How often will I need to come to UCSF after transplant?	Initially, at least once a week; eventually annually or as needed
When can I drive?	When cleared by the Transplant Team

Notes