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LIVER TRANSPLANTATION

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Abstract: This article is devoted to the topic of liver transplantation. It provides information about when a liver transplant is necessary, types of transplantation, procedures, the development of the operation and the maximum volume. The article includes practical and liver diseases for doctors and patients interested in increasing the transplant.

Keywords: liver transplantation, cirrhosis, liver failure, living donor, deceased donor, transplantation process, immunosuppression, quality of life control, success, transplantation problems.

Introduction: Liver transplantation (or liver transplantation) is a complex surgical procedure that involves removing a patient's failing, damaged or diseased liver and replacing it with a healthy donor liver (or part of it). It is a life-saving procedure and may be the only hope for patients with end-stage liver disease.

Main part: Liver transplantation is a complex but life-saving operation that is often performed as a last resort, and is often performed in the final stages of liver disease or when the liver has completely stopped functioning. The stage of cirrhosis is one of the most common stages for which transplantation is performed. Due to cirrhosis, the liver becomes fibrotic, as a result of which the liver is unable to perform its functions. Cirrhosis often occurs in alcoholism, hepatitis B and C diseases, and liver diseases. Acute liver failure is a condition in which the liver stops functioning due to damage, which can occur due to poisoning, drugs, viral infections, or autoimmune processes. In these conditions, the patient may need an immediate liver transplant. Liver cancer, namely hepatocellular carcinoma, is also one of the main types of transplantation, especially when the cancer is thought to be confined to the liver.

Liver transplantation or hepatic transplantation is the process of replacing a diseased liver with a healthy liver from another person (allograft). Liver transplantation is a treatment for

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end-stage liver failure and acute liver failure, but the lack of a donor organ is one of the main obstacles. Liver transplantation is strictly controlled and is performed only in specialized transplant centers by highly qualified transplant doctors. Careful selection of patients, as well as the suitability of a living or deceased donor, are essential for achieving positive results.

Liver transplantation is a last resort for acute or chronic diseases that cause irreversible and severe ("end-stage") liver failure. This procedure involves significant risks, requires a lot of resources, and requires significant changes in the patient's life after surgery. Therefore, this method is used only in very severe cases.

It is important to assess the feasibility or effectiveness of liver transplantation on a case-by-case basis, as outcomes can be highly variable.

The End-Stage Liver Disease Model (ESLDM) for adults and the Pediatric End-Stage Liver Disease Model (PSLDM) for children under 12 years of age are clinical assessment tools that take into account various clinical criteria and are used to assess the need for liver transplantation. A high score on each assessment tool indicates a high degree of liver disease severity, and therefore a high need for liver transplantation. In patients with chronic liver disease, decompensating conditions such as hepatic encephalopathy, variceal bleeding, ascites, or spontaneous bacterial peritonitis may also necessitate a new liver transplant. Although liver transplantation is the most effective treatment for many end-stage liver diseases, patient selection is critical due to the difficulty in finding an allograft (donor) and the variability of outcomes after surgery. The evaluation of a person's suitability for transplantation is carried out by a multidisciplinary team of surgeons, physicians, psychologists and other specialists. The first step in the evaluation is to determine whether the patient has irreversible liver disease, a condition that can be treated with a new liver. Thus, patients with disease that is primarily located outside the liver or has spread beyond the liver are generally considered unsuitable candidates for transplantation. Examples include: People with advanced liver cancer may be ineligible for transplantation, especially if the cancer has spread beyond the liver or is known to have spread. Or, people with other types of cancer (except skin cancers) may also be ineligible for transplantation.

Anatomical abnormalities that make liver transplantation impossible

Severe heart or lung disease (a transplant may still be possible if the transplant team considers the procedure feasible)

HIV/AIDS, (however, some people who keep their viral load very low or undetectable may still be eligible for transplantation)

Importantly, contraindications to liver transplantation are often reversible; someone who is initially considered "unsuitable for transplantation" may later become a suitable candidate if their circumstances change. Some examples include:

Reducing the risk of cancer spreading beyond the liver by partially curing liver cancer (in the case of primary liver cancer or secondary liver-related metastases, the medical team will pay close attention to the patient's primary care physician, oncologist, and radiologist)

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Improving heart function, such as through percutaneous coronary intervention or bypass surgery

Treatment of HIV infection

Some other conditions, such as hemodynamic instability requiring vasopressor support, large liver tumors or vascular invasion, intrahepatic cholangiocarcinoma, frailty, acute liver failure with suspected brain injury, alcohol dependence, smoking, lack of adequate social support, and noncompliance with medical treatment, may be reasons for exclusion from liver transplantation. However, these conditions are usually assessed on an individual basis by the multidisciplinary transplant team. There are two types of liver transplants: deceased donor transplant and living donor transplant. A deceased donor is a person who is brain dead but whose organs are still functioning. His liver is transplanted into a patient. A deceased donor transplant is the most widely used method worldwide. A living donor transplant is a transplant of the liver of a living person — a close relative of the patient — into a patient. This method is based on the regenerative nature of the transplant: after the liver is removed from the liver, both the liver and the liver grow and completely regenerate. Living donation is often preferred for children or small patients. The process consists of several main stages: first, the patient is registered at the transplant center and placed on the transplant list. The patient is assessed on the waiting list based on the degree of liver failure, general condition, and blood test results. The development of suitability for transplantation is based on the Milan criteria or other clinical indicators. The waiting period can sometimes be long, because the donor organs are not controlled.

After the liver is removed on the day of transplantation, the operation to transplant it into the patient begins. This operation lasts 6–12 hours and requires an experienced team. After the operation, the patient is monitored in the intensive care unit. In the postoperative period, the patient's body adapts to the new liver, and immunosuppressive drugs are taken to prevent the body from rejecting the transplanted organ. Immunosuppression is a method of preventing organ rejection by suppressing the patient's immune system. Immunosuppressive drugs are taken for the patient's entire life, because the body constantly recognizes the transplanted organ as foreign.

Liver transplantation is not an easy path. This process involves many products. to do, the lack of donors is one of the biggest problems in the transplantation process. Many patients do not live to see the transplant, waiting for their turn. Secondly, the operation itself is complicated, and can be accompanied by bleeding, illness, blood clots, etc. Third, in the postoperative period, there are side effects of immunosuppressive drugs - infections, chronic developmental delay, even secondary cancer. All this requires constant monitoring by the entire team. Nevertheless, liver transplantation has a high success rate. Modern medicine has a one-year survival rate of 85–90%, and a five-year survival rate of 70–75%. This means that after transplantation, the patient will not only survive, but will also have support for a normal life. Many patients will be able to start working, start a family, and even play sports after transplantation. Improving the quality of life is the greatest achievement of transplantation. There are ethical and social issues surrounding liver transplantation. The problem of fairness in the distribution of donated organs, organ trafficking, and the public's attitude to organ donation - all of these indicate the need for further improvement of transplantation, and the cost of transplantation is also an important issue: it is a very

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expensive procedure, and the patient will have to endure not only the operation, but also lifelong immunosuppressive drugs.

Currently, with the development of genetic engineering and biomedical technologies, the future of liver transplantation is becoming more promising. For example, work on the creation of artificial livers or xenotransplantation, which is the adaptation of animal organs to the human body, is rapidly developing. Autotransplantation and organ cultivation technologies (organs grown in the laboratory) can be carried out.

In general, liver transplantation is not a human feat, but a great responsibility, requiring many years of observation, proper drug therapy, and acceptance by the patient himself and his family. The patient must continue his life after the transplant in a healthy way, undergo regular medical examinations, protect himself from diseases and take medications in a strict regimen. , mental health support is also important: the transplant operation can cause severe emotional stress, so the patient and his family must be ready for treatment.

The transplant system differs between countries. In some countries, organ donation is automatically registered, while in others people must fill out a special consent form. Raising awareness in the community about organ donation, urging people to become more donors to help save their lives, is also an integral part of the transplant process. It is necessary to identify all the factors that contribute to the transplantation of people with diseases.

Another important aspect is the examination of the liver transplant for children. There are main reasons for transplantation in patients with congenital liver diseases, biliary atresia, metabolic diseases. Living donor transplantation is preferred in children because the file size is small and finding a suitable donor can be difficult. Pediatric transplantation requires a highly experienced and skilled team. In conclusion, liver transplantation is one of the most complex and at the same time life-saving procedures in the treatment of liver disease. This new procedure gives new opportunities, new hope and life to many people.

Conclusion: Liver transplantation is one of the most effective treatments for patients struggling with pain. Despite being a procedure, it has a high degree of stability and saves many lives. Each stage of the operation, the issue of donation, immunosuppressive drug therapy, the general support of the patient and the medical team for a healthy transplant. Future scientific research and a conscious attitude of the society towards donation will further improve liver transplantation.

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