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The Liver: A Resourceful Organ

This article is on the liver and its transplantation. Our liver is a very interesting organ. It is the second largest organ in the body, with only the skin surpassing it. By looking at the organ, many different functions can be observed. The liver can even regenerate itself. It is the only one body that can do this, and only need just one-fourth of its cells to function! So when it is transplanted, only a portion of the organ from a person is necessary to be put into another person's body.

Our liver is a vital organ in our body. It is located on the upper right-hand side of the abdomen, located within the rib cages, above the stomach and gallbladder and below the heart. It has a lot of functions. Its major functions include filtering the blood of wastes, regulating chemical levels in the blood, and producing of a product called bile. This substance carries away waste products from the liver and breaks down fats in the small intestine during digestion.

The liver is commonly known for more than 500 critical functions throughout our body. Functions that occur less often include: the production of proteins that make up our blood's plasma, cholesterol, proteins that carry fats through our body, and hemoglobin; the storage of glucose; and the conversion of toxic ammonia into what becomes urine.

The liver is regularly transplanted in people. It was first performed in 1963 by Thomas Starzl. Dr. Starzl performed transplants until 1967, which saw the first patient to have survived one year after it. It continued hypothetically in the 1970's, with a 25 percent one-year survival rate. In the 1980s, liver transplantation unveiled to the general public, after the invention of cyclosporin, the first immunosuppressant. These days, one-year survival rate is 83%.

A liver transplant takes place whenever one has liver failure or a fatal liver disease. It is an orthotopic transplantation, in which the original liver is removed and the whole donor organ is attached in the same location at the blood vessels of which the other was attached by. People diagnosed with a range of cancers that had spread to the liver and stopped its functions may have transplants if they are candidates.

To qualify for a liver transplant, one's liver must be malignantly diseased, and they must not be an alcoholic. For instance, Steve Jobs got a liver transplant after being diagnosed with severe pancreatic cancer. The fatal cancer spread to the liver, causing him liver failure.

There are various ways that the body could reject the liver. Rejection occurs due to the unrecognized genetic material that the new liver has. Hyperacute rejection is caused by antibodies (B cells) attacking the foreign liver, occurring in as small as minutes after the transplant. Acute rejection is caused by T cells, and can be seen days to weeks after the transplant. Immunosuppressants are mostly targeted at the B cells, preventing hyperacute rejection, the most popular type of rejection.

In a case of chronic rejection, any signs or symptoms start appearing at least one year after the transplant. The cause of this is unknown, though acute rejection is usually a premonition for it.

Results, or prognosis, of liver transplantation shows quite positive. There is currently a 58% chance of a 15 year survival. Liver failure only occurs in 10% of cases.

Our organ that can live up to 150 years and that can regenerate itself is one we cannot possibly live without. Liver transplantation saves lives by the thousands each year on the transplant waiting list.

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