

Transplantation - organ donation

Introduction

The topic of the essay is the issue of transplantation, or rather the acquisition of organs for donation. I chose it mainly because I have encountered transplantation and everything that is connected with it in my personal life. Five years ago, my grandfather received a kidney transplant, and because of it, he was with us for years to come.

This experience was not easy and each member of our family experienced it differently. This is also one of the ethical dilemmas of transplantation. In general, the perception of the persons who are to undergo the transplant, the persons close to them and the persons who were close to the person whose organ will be donated.

This essay includes an explanation of the concept of transplantation, its types, the issue of donation, the legislation in the Czech Republic that treats this issue, etc.

The main aim of the essay is to introduce the reader to the above mentioned concepts and also to outline the view of the procedures of obtaining organs for transplantation from the ethical point of view.

Text of the essay

In cases where people need organ transplants, the main issue is that one of their organs is not working well or is gradually failing. With a transplant, a person's life can be prolonged and they can go on living a normal life. (MedicalNewsToday, 2019)

The perception of transplantation - organ donation or the process of obtaining organs for transplantation - varies in society and society is often divided on ethical grounds. Some see it as a new beginning in the life of a person who needs a transplant because one of their organs no longer works, others cannot accept that their deceased loved one's organs will be transplanted into someone else.

1. Donor

In Act No. 285/2002 Coll., on donation, procurement and transplantation of tissues and organs and on amendments to certain acts (Transplantation Act), §2 art. c) states that a potential donor is a patient who, in view of his or her state of health, is presumed to have died and to be able to receive a tissue or organ, or the body of a deceased person who has been proven to have died and is presumed to be able to receive a tissue or organ, and also, according to act. d), a donor is a person who donates an organ or tissue, whether the donation takes place during the person's lifetime or after his or her death. (Laws for People, ©2022)

1.1 Categories of donors

In the field of donation, we can speak of two categories of donors, namely the deceased donor and the living donor.

1.1.1 Deceased donor

A deceased donor is a patient diagnosed with brain death, i.e. irreversible loss of function or irreversible circulatory arrest. At least two specialists, doctors with specialised competence, decide whether death has occurred. Everything is then recorded and included in the deceased's medical records. (Transplant Coordination Centre, ©2019)

1.1.2 Living donor

These are blood relatives who are adults and competent (parents, siblings) and a relative (friends, spouses, etc.) or, in exceptional cases, blood relatives who are minors and incompetent. Strict ethical rules apply here, namely that if a person consents to the donation of an organ to a close person, the donor must express himself in the prescribed manner. If the organ is donated to a stranger, a professional ethics committee meets and approves the donation.

Advantages of transplantation from a living donor, as opposed to a deceased donor, include the time available to experts for preparation and follow-up examinations of both the donor and the recipient. The operation can be scheduled as required and the patient who needs the transplant no longer has to wait for a deceased donor. (Transplant Coordination Center, ©2019)

2. Determination of death

Organ transplantation is closely related to the topic of determining death. The fact that there is a large gap between the demand for transplanted organs and, on the other hand, the ability to access organs for transplantation, makes this one of the world's public health problems.

In 2012, a number of very distinguished experts met at an international forum in Montreal, Canada. It was held in collaboration with the World Health Organization and the main topic was the issue of the aforementioned determination of death. The topic of determining death in both children and adults was discussed. The main outcome of this meeting was the identification and, more importantly, agreement on the terminology that will subsequently be used and understood by all.

The experts talked about three possible determinations of death - important for transplantation. These were brain death, death after circulatory arrest and surgical death of a person. The conclusion of the whole international meeting was the formulation of seven areas that are key to the topic of transplantation. (SpringerLink, ©2014)

WHO says:

1. Brain Death

“Irreversible cessation of cerebral and brain stem function; characterized by absence of electrical activity in the brain, blood flow to the brain, and brain function as determined by clinical assessment of responses. A brain dead person is dead, although his or her cardiopulmonary functioning may be artificially maintained for some time.”

2. Cardiac Death

“Death resulting from the irreversible cessation of circulatory and respiratory function; an individual who is declared dead by circulatory and respiratory criteria may donate tissues and organs for transplantation”. (WHO, ©2009)

The determination of death is considered one of the ethical considerations in organ donation. Death can be perceived both from a medical and an ethical, psychological point of view. However, from a biological point of view, it is always a question of the consensus of the doctors who decide on the determination of death.

3. **Transplantation**

According to Act No. 285/2002 Coll., on the donation, procurement and transplantation of tissues and organs and on the amendment of certain acts (Transplantation Act), the term transplantation can be understood as "a process aimed at restoring specific functions of the human organism by transferring an organ or tissue from the donor to the recipient's body". (Laws for People, ©2022)

4. **Transplant**

A transplant is an organ, tissue or group of cells that can be taken from one donor and then transplanted into another person. Or it may be a transplant of an organ, tissue or group of cells from one person to another. (BetterHealthChannel, 2019)

5. **Organ transplantation**

As mentioned above, it is possible to transplant organs, tissues and groups of cells. Transplantable organs include liver, kidney, pancreas, heart, lung, intestine, cornea, middle ear, skin, bone, bone marrow, heart valves and connective tissue.

This section briefly describes the transplantation of selected organs:

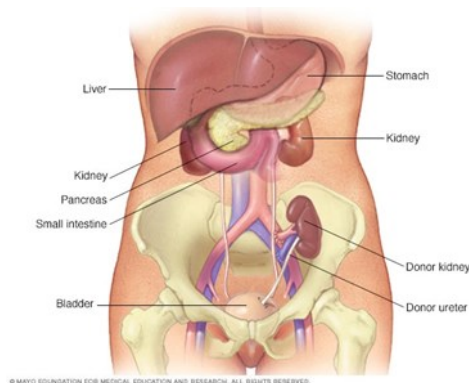
5.1 Kidney transplantation

The kidney is a paired organ of the human body. When kidney failure occurs, it is either acute failure, which occurs after sudden severe damage to the kidneys and the kidneys may stop functioning for a short period of time and then recover partially or completely, or chronic failure, which is a progressive condition where irreversible damage to the kidneys occurs over a long period of time (often many years). Dialysis is one of the treatments, but it cannot remove, for example, the stimulation of red blood cell production. This is where transplantation is needed.

Many countries perform far more kidney transplants from living donors than we do. For example, in the USA or Norway more than 50% of all kidney transplants are from living donors, in the Czech Republic in recent years such transplants account for only 2-8%, which represents 20-50 procedures per year. (Czech Transplantation Society, ©2019)

For kidneys, an HLA match between donor and recipient is necessary. Complications include: urinary fistula, ureteral stenosis, lymphocele, erectile dysfunction thrombosis, acute rejection and nephrotoxicity.

The new kidney is not placed in place of the original kidney but in the left or right iliac fossa. The surgeon then connects the artery and vein of the new kidney to the patient's vascular system. The original kidney is usually left in place. It is only removed if there are any potentially threatening infections.



5.2 Heart transplantation

Christian Bernard performed the first heart transplant in 1967 in Cape Town and the first transplant in the Czech Republic was performed in 1984 at the IKEM Prague. The indication for heart transplantation is terminal, conservatively unaffected heart failure with an expected survival time of 6 months in people who are younger than 60-65 years. Therefore, a person may need a heart transplant if their heart is failing and other treatments are not effective. The most common diseases that lead to heart transplantation are: dilated cardiomyopathy, ischaemic cardiomyopathy, hypertrophic obstructive cardiomyopathy, restrictive cardiomyopathy, complex congenital heart disease and cardiac tumours. Specific requirements for heart transplantation are: approximately equal body weight and size,

circulatory stability and the donor heart should not show any macroscopic atherosclerotic changes in the coronary circulation. (Johns Hopkins Medicine, ©2022)

6. Ethical aspects of donation

Kidney transplants became widespread in India in the 1970s. This was not anchored anywhere in law or legislation, and so transplantation and unrelated kidney donation from poorer populations was very common. The organ donation trade thus became part of the transplantation agenda. Not only Western countries but also a section of the population of India has started to draw attention to this situation, or rather a big problem. In that country, the Transplantation of Human Organs (THO) Act was passed in 1994, banning transplants outside the family and legalising donations from deceased persons. That is, for those who were determined to be brain dead. Thanks to the law, brain death was recognised as a form of death and the illegal sale of organs became a criminal offence. It was no longer only possible to perform kidney transplants, but also to start transplanting other organs such as liver, heart, lung and pancreas. However, the passing of the law still did not reduce organ trafficking (Sunil Shroff, 2009).

Some of the most frequently mentioned ethical dilemmas in the issue of organ donation are undoubtedly the area of living donation, unrelated donation and the fact that there is currently a shortage of organs from deceased donors and illegal organ sales still occur in some countries. In this context, we are talking about so-called transplantation ethics. It is about naming both good and bad behaviour, including in the area of organ donation. As the need for organs for transplantation continues to grow, another necessity is to provide a legal basis (statutory backing) to increase the supply of organs for transplantation. It is essential that this donation is ethical and based on the principles of altruism (charity, disinterestedness) and utilitarianism (usefulness, utility). The World Health Organisation has set as its main objectives in its governing principles to ensure transparency in the procurement and allocation of organs.

Physicians who have taken the Hippocratic Oath before starting their work are responsible for ensuring that they adhere to the moral principles as well as the ethical principles. Among these principles is the principle "Primum non nocere!" or "Above all, do no harm". This is also the essence of the principle of nonmaleficence. This is one of the most important principles in living donor transplantation. This is because there are great risks for living donors, ranging from great pain, disability or even death. (Aparna R Dalal, 2015)

Since this is a very demanding process, we talk about the possible risks or possible surgical complications of surgery from a living donor, usually 5 to 10% and the risk of death 0.5 to 1%.

Living donor transplants raise many issues such as the aforementioned safety for the donor, donation by unknown persons, presumed consent, etc.

Consent or non-consent to posthumous organ donation

Two approaches are established in the legal norms governing posthumous organ procurement. The principle of presumed consent - this occurs when the deceased did not consent to posthumous organ donation during his or her lifetime. If the deceased did not consent to the donation during his/her lifetime, the consent of his/her family must be obtained - the principle of presumed non-consent. It is essential that every citizen has the opportunity to express his or her opinion on organ donation. In some places there are national registers of consent (Germany, Denmark, the UK, Canada, the USA, etc.), in others there is a box on driving licences for posthumous organ donation, and in others there are donor cards. Since 2002, we have had a National Register of persons who do not consent to the posthumous removal of tissues and organs. In this register, it is possible to determine the extent of the disagreement (disagreement with posthumous removal of heart, lung, bone tissue, eye tissue, etc.).

According to the transplantation law in the Czech Republic, procurement from a deceased donor is excluded if:

- the deceased (or his/her legal representative) expressed demonstrable disagreement with posthumous organ procurement during his/her lifetime, is registered in the National Register of Persons Disagreeing with Posthumous Organ Procurement
- the deceased (or, if applicable, the legal representative) declares during life in a healthcare facility, in front of the attending physician and a witness, that he or she does not consent to the removal of organs in the event of death
- the deceased cannot be identified
- on the basis of the examination, it cannot be excluded that the deceased suffered from a disease that could endanger the life of the recipient. (P. Baláž, J. Janek, M. Adamec et al., str. 17, 2011)

Unless it is proven that the deceased expressed disagreement with the posthumous donation during his/her lifetime, the rule is that he/she consents to the donation.

Conclusion

Thanks to greater awareness in the Czech Republic and worldwide about transplantation, organ donation, transplantation centres, etc., the view on this issue is more open. However, a number of questions still arise as to whether it is ethical that, if citizens do not expressly express their disagreement with posthumous organ donation, it is automatically understood that they agree to donation. Are we consistent with the idea that each of us is "automatically" an organ donor?

Donation from living donors is also a very complex issue. As mentioned in the text, in some countries, illegal organ trafficking still takes place, even though there are laws and rules in place.

On the one hand, donation saves lives, but on the other, it can involve many complications, risks and dangers for the donor. It is therefore not at all easy to form a one-sided opinion on transplantation, or organ donation.

References

DALA, Aparna R, World J Transplant [online]. 2015 Jun 24; 5(2): 44–51. Published online 2015 Jun 24. [cit. 2022-12-11]. Dostupné z: doi: 10.5500/wjt.v5.i2.44

BALÁŽ, P. a kol. Odběry orgánů k transplantaci: Odbery orgánov na transplantácie. 1. vyd. Praha: Karolinum, 2011, 260 str. ISBN 978-80-246-1964-4.

BetterHealthChanel. *Organ and tissue transplantation* [online]. 2019, [cit. 2022-12-11]. Dostupné z: <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/organ-and-tissue-transplantation#types-of-transplantation>

Česká transplantační společnost. *Transplantace ledvin* [online]. 2019, [cit. 2022-12-10]. Dostupné z: https://transplantace.eu/site/?page_id=197

John Hopkins medicine. Heart Transplant [online]. 2022, [cit. 2022-12-10]. Dostupné z: <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/heart-transplant>

Koordinační středisko transplantací. *Kdo je dárce* [online]. 2019, [cit. 2022-12-10]. Dostupné z: <https://kst.cz/o-transplantacich/kdo-je-darcem/>

LUO, Elaine K., M.D., MedicalNewsToday. *How organ transplants work* [online]. 2019, [cit. 2022-12-10]. Dostupné z: <https://www.medicalnewstoday.com/articles/325631>

SUNIL, Shroff, Legal and ethical aspects of organ donation and transplantation [online]. 2009, 25(3): 348–355., [cit. 2022-12-13]. Dostupné z: doi: 10.4103/0970-1591.56203

ÚSTAV ZDRAVOTNICKÝCH INFORMACÍ A STATISTIKY ČR. Národní registr osob nesouhlasících s posmrtným odběrem tkání a orgánů [online]. © 2022 [cit. 2022-12-12]. Dostupné z: <https://www.uzis.cz/index.php?pg=registry-sber-dat--ostatni-rezortni-registry--narodni-registr-osob-nesouhlasicich-s-posmrtnym-odberem-tkani-a-organu>

World Health Organization. *Global Glossary of Terms and Definitions on Donation and Transplantation* [online]. 2019, [cit. 2022-12-13]. Dostupné z: <https://www.who.int/publications/i/item/9241593296>

Zákon o darování, odběrech a transplantacích tkání a orgánů a o změně některých zákonů (transplantační zákon). Zákony pro lidi [online]. [cit. 2022-12-10]. Dostupné z: <https://www.zakonyprolidi.cz/cs/2002-285>

Jana Novotná, M210176