Ethics of Organ Transplantation

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الجمعية الأردنية لتشجيع التبرع بالأعضاء

منظمات الرعاية الصحية »

سنة التأسيس: 1987

الاهداف: تشجيع المواطنين على التكافل فيما بينهم لتخفيف المعاناة التي قد يسببها فقدان احد أعضاء جسم الإنسان، وتشجيع أولياء أمور الأفراد الذين توفاهم الله للتبرع بالأعضاء التي يمكن أن يستفاد منها في إنقاذ حياة إنسان آخر أو تحسين نمط حياته و هذه الأعضاء هي (القلب، الكليتين، القرنيتين)، وإبراز مدى أهمية التبرع بالأعضاء لدى المواطنين من خلال قيام الأطباء المختصين و علماء الدين و قادة الرأي في المجتمع بإعداد المحاضرات الخاصة في هذا المجال، ودعم البحوث العلمية المتعلقة بزراعة الأعضاء والعمل على إبراز النماذج الحية المجسدة لأهمية التبرع بالأعضاء من خلال القيام بحملات إعلامية بمختلف الوسائل.

عدد الاعضاء: 80 عضو

الفروع: لا يوجد

رئيــس: الأمير رعد بن زيد

أعضاء الهيئة الإدارية: نائب الرئيس: احمد جميل.

أمين السر: رانيا جبر القرم.

أمين الصندوق: أديب عكروش.

مدة الدورة الانتخابيـة: 3 سنوات

تاريـخ آخر انتخابات: 2016

Statistics in Jordan 2019

- **Organ donations from living donors in the Kingdom account for 99 per cent of total donations and only 1 percent come from brain dead persons**
- **175 organ transplant operations were performed in the Kingdom last year, both for Jordanians and non-Jordanians, including 160 kidney transplants and 15 liver transplants.**

Organ transplantation

- An organ transplant is a surgical operation in which a failure or damaged organ in human body is removed and replaced with a functioning one. The donated organ may be from a deceased donor, a living donor or an animal.
- Organs that can be transplanted are the heart, kidneys, liver, lungs, pancreas, intestine and thymus.
- Tissues include bones, tendons, cornea, skin, heart valves, nerves and veins.
- Worldwide, the kidneys are the most commonly transplanted organs, followed by the liver and then the heart.

Legal rules have been followed before blood transfusion

The first discussion of this issue was on starting ***blood transfusion*** early in the twentieth century. when a person looses blood due to an injury, a blood disease or during surgical interference.

The need for the blood transfusion**: Conditions**

- No alternative method of treatment
- No harm or damage to the donor
- Consent of the donor
- Under medical supervision
- The donor should be clinically free from a transmissible disease

Alternatives to Blood Transfusion

1. Autologous blood transfusion is a procedure in which blood is removed from a donor and returned to his circulation at some later time.
2. Intraoperative autotransfusion: Shed blood is collected from the operative field and mixed with an anticoagulant. It is concentrated and washed or filtered, then returned to the patient.
3. Erythropoietin: The use of erythropoiesis-stimulating proteins for the treatment of chemotherapy-induced anemia.

- *Organ transplantation has been widely known in the mass media as offering new hope for thousands of ill patients .*
- *The major clinical problems include*
  - *tissue rejection*
  - *organ preservation*
  - *insufficient facilities and manpower*
  - *and the high cost of each operation*
  - *The law has an additional restriction*
  - *Community*

Sources of organ

- CADAVERIC ORGAN DONATION Organs taken from deceased people are called cadaveric organs. Cadaver is Latin for “a dead body.” A person becomes a cadaveric organ donor by indicating that they would like to be an organ donor when they die. This decision can be expressed either on a driver’s license or in a health care directive.
- LIVING ORGAN DONATION Living people who wish to donate their organs can donate in two ways:
- 1. Donate one-half of a paired organ set. Example: Kidney
- 2. Donate a portion of an organ that will still be able to function without it. Example: A portion of the liver. Example: A lobe of the lung

Types of organ transplantation :

- *Classification of organ transplantation:-*

I) Auto-transplantation:- (to him or back to him)

- It involves the transplantation of tissue from one individual back to the same individual (e.g., skin, teeth, hair…etc).

I) Isograft:- Graft=Transplant (Between genetically identical individuals)

- Donor and recipient are genetically individuals of the same species, such as graft between monozygotic twins.

I) Allo-transplants:- (genetically different ones)

- Transplants from one individual into another genetically different one, it including cornea, teeth, bone….etc.

I) Xenograft:- (between different species)

- Where grafts between different species have been performed in the part for skin & heart valves.

Transplantation from a living person to another living one

- - There should be no harm or danger on the donor's life.
- -The operation should be done in a recognized hospital.
- -The donor should be related to the recipient up **to the third degree**, so as to prevent selling organs

Transplantation from a dead to a living

- ***The importance of brain death appeared in recent years.***
- ***It is the irreversible cessation of all brain function including the brainstem. When the brain cells die, they do not grow back, thus any damage is permanent and irreversible function.***

Nowadays modern resuscitative devices and techniques can maintain the function of the heart, lungs & visceral organs for a period of time after the brain stem centers have stopped

The development of transplant surgery and the need of viable organs have resulted in the need for accurate determination of the medical criteria of brain death.

The medical criteria of brain death

- Know cause of coma: structural brain damage.
- Exclusion of revisable causes of coma as toxic or metabolic.
- No hypothermia: temp more 35.
- Absent brain stem reflexes:
  - No motor response within cranial nerves areas.
  - No pupillary response to light.
  - No corneal reflex.

- ❑No oculovestibular reflex.
- ❑No oculocephalic reflex
- ❑No gag reflex
- ❑Apnea test

the rules that should be followed are:

- 1.Death certificate should be signed by three physicians of good qualification and not from transplant team.
- 2.The dead person should have given a will وصية before death or permission for transplantation.
- 3.Consent of his relatives.

These rules are put to prevent abuse and loss of confidence in physicians.

Stem cells

1. Recent research suggests that human stem cells can give rise to many different types of cells, such as muscle cells, nerve cells, heart cells, blood cells and others so used instead of organ transplantation.
2. stem cells could be used to generate replacement cells and tissues to treat many diseases and conditions, including Parkinson's disease.
3. The availability of stem cells may also change the way that drugs are tested. New drugs could be tested for safety and efficacy on cultured liver or skin cells derived from stem cells before being tested on humans

- Stem cells are special human cells that are able to develop into many different cell types.
- **Types of stem cells**
- Stem cells are divided into 2 main forms. They are embryonic stem cells and adult stem cells.
- **Embryonic stem cells**. The embryonic stem cells used in research today come from unused embryos. These result from an in vitro fertilization procedure. They are donated to science. These embryonic stem cells are pluripotent. This means that they can turn into more than one type of cell.
- **Adult stem cells.** There are 2 types of adult stem cells. One type comes from fully developed tissues such as the brain, skin, and bone marrow. There are only small numbers of stem cells in these tissues. They are more likely to generate only certain types of cells. For example, a stem cell that comes from the liver will only make more liver cells. The second type is induced pluripotent stem cells. These are adult stem cells that have been changed in a lab to be more like embryonic stem cells.

Ethical issues of stem cells

- Debates on stem cell and cloning- revolve around moral status of the human embryo.
- There are various views of the status of human embryo. -Some think that the embryo is microscopic, not yet possessing a beating heart, brainwaves, arms, legs, therefore they are not a person yet. The embryos are just a clump of cells. -Others believe it is a form of human life deserving of profound respect- a potential person. Deserve the same moral value as any other human species.

Organ donation and transplantation:

Adult of legal age and sound mind :

They must give informed consent for donation of their organ voluntarily after being informed of potential risks.

Fetuses and anencephalics:

Organs from stillbirths and infants dying a disease are not suitable.

Although anencephalic infants have no higher cortical function they may have good brain stem function.

The legal criteria for brain death are not easily applied on them.

- Anencephaly is a condition that prevents the normal development of the brain and the bones of the skull.
- People with anencephaly are missing large parts of the brain. called the cerebrum and cerebellum. The bones of the skull are also missing or incompletely formed.
- Anencephaly is one of the most common types of neural tube defect, affecting about 1 in 1,000 pregnancies. However, most of these pregnancies end in miscarriage,

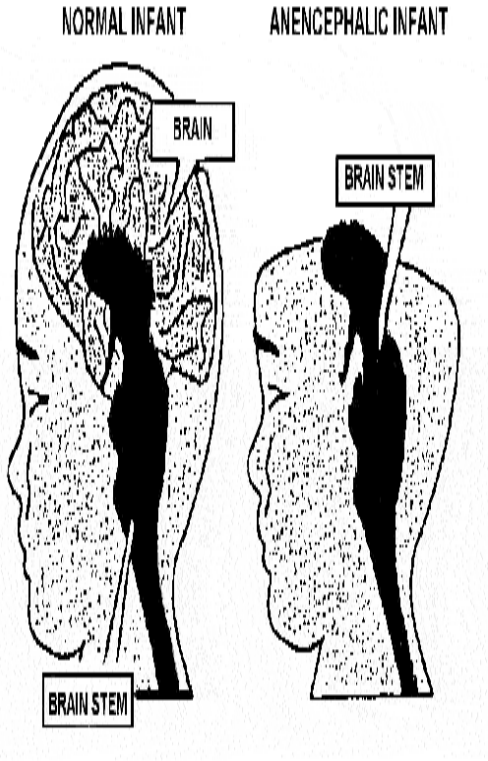
Approaches to organ donation from an encephalic infant:

(1) **Maximal** life support systems at birth and the organ are removed **as soon as** possible .

(2) As 1st approach but the organs are removed only after **brain stem functions are stopped.**

(3) **Minimal** care until he deteriorates, then placed on **maximal** life support systems, and organs are removed **brain stem functions are stopped.**

(4) **Minimal** care until the infant **dies**, and then the organ are harvested.



The success rate was 100% for the 1st approach but 0% - 11% for the other 3 approaches

THANK YOU