Developing Machine Learning Applications for Medical Ethics in Organ Transplantation

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DESCRIPTION

An abnormal or damaged organ in the human body is removed during an organ transplant surgery and replaced with a fresh organ. An organ is a collection of specialized cells and tissues that cooperate to carry out a specific task for the body. An organ is any physical portion that carries out a certain task. The number of solid organs available from deceased donors is far insufficient to meet the demand. While still other donors make a non-directed donation of a kidney to the transplantation system in order for it to be used by any patient in need, others donate a kidney or a portion of an organ to patients whose stories have come to their attention, maybe through the media. It is obvious that organ donation from living donors shortens the waiting list for recipients and, in certain cases, improves transplantation outcomes. Additionally, it gives patients who lack living donors more chances to obtain organs from deceased donors [1]. But it brings up a number of ethical issues that haven't been properly answered. The clinical guidelines specify the requirements for organ transplant eligibility and evaluation, as well as the procedures for distributing dead donor organs to patients on the waiting list.

Organ transplantation is a medical ethic that has saved many lives around the world. Organ failure patients can receive a lifeline from this surgery, which involves the donation of healthy organs from one person to another, giving them a second chance at life. However, the moral rules raised by organ transplantation are just as complex and difficult as the actual developments in medicine. We will explore significant challenges and arguments that highlight the significance of ethical considerations in this life-saving sector as we delve into the complex world of organ transplantation ethics [2]. Organ transplantation has been marked as one of the greatest achievements in modern medicine, allowing individuals with failing vital organs to regain their health and quality of life. The donation of a functional organ can be the difference between life and death, from kidney and lung transplants through transplants of the heart, liver, and kidney. The moral obligation to preserve lives is the foundational feature of organ transplantation that sets the framework for the ethical discussion [3].

The moral case for organ transplantation is based primarily on the notion that every attempt should be taken to preserve human life. The principle of beneficence, which emphasizes the promotion of well-being and the prevention of harm, forms the foundation of this argument. While the ethical argument for organ transplantation is compelling, it is not without its challenges [4]. One of the most significant ethical dilemmas in organ transplantation revolves around the scarcity of donor organs. The demand for organs far exceeds the available supply, creating a situation where difficult choices must be made regarding who receives a transplant and who does not. In many countries, the allocation of donor organs is based on a variety of factors, including medical need, recipient suitability, and time on the waiting list. However, these criteria can be subjective and lead to disparities in access to transplantation services [5-6]. Scholars says that the current allocation system does not always prioritize the sickest patients or those with the greatest chance of success, and this perceived unfairness challenges the ethical underpinnings of organ transplantation.

In the ethical landscape of organ transplantation, the issue of consent looms is large. Consent is the key element of medical ethics, and it is no different in the context of organ transplantation. The principle of informed consent dictates that patients must fully understand the risks, benefits, and alternatives before making a decision about transplantation [7]. Moreover, organ procurement from deceased donors raises complex issues regarding surrogate consent, and the rights of the living. In the case of living donors, the issue of informed consent is relatively direct, as individuals willingly choose to donate an organ. However, when the donor is a relative or close friend, it is especially important to take into account the possibility of coercion or undue influence. Ethical safeguards and comprehensive counseling are essential to ensure that living donors make their decisions freely [8]. Deceased donor consent presents a more intricate ethical challenge. In many countries, organ procurement from deceased donors relies on presumed or mandated consent, where individuals are considered organ donors by default unless they opt out. This system seeks to maximize the availability of donor organs and save more lives. However, it raises questions about respecting the autonomy of the

deceased and the wishes of their families. Striking the right balance between maximizing donor availability and respecting individual autonomy is an important ethical question in organ transplantation [9-10].

Another ethical issue in organ transplantation is the commercialization of organs and the potential for exploitation [11]. The high demand for organs has led to a thriving black market in organ trafficking, where desperate individuals sell their organs or fall victim to unscrupulous organ brokers [12]. This underground trade exploits vulnerable individuals and undermines the ethical principles of autonomy and justice.

CONCLUSION

To combat organ trafficking and ensure ethical transplantation practices, many countries have implemented strict laws and regulations prohibiting the sale of organs. While these measures are crucial for protecting the vulnerable, they also raise questions about the autonomy of individuals patient. Striking a balance between protecting individuals from exploitation and respecting their autonomy is a delicate ethical challenge in the fight against organ trafficking. Organ transplantation is undoubtedly one of the most remarkable achievements of modern medicine. However, it is impossible to disregard the significant ethical issues that surround organ transplantation.

REFERENCES

1. Kerridge IH, Saul P, Lowe M, McPhee J, Williams D. Death, dying and donation: organ transplantation and the diagnosis of death. J Med Ethics. 2002;28(2):89-94.

2. Murphy PG. Controlled non-heart-beating organ donation in intensive care. Br J Hosp Med. 2007;68(6):298-301.

3. Lopez-Herce J, Garcia C, Cominguez P, Carrillo A, Rodriguez-nunez A, Calvo C, et al. Characteristics and outcome of cardiorespiratory arrest in children. Resuscitation. 2004;63(3): 311-320.

4. Quick G, Bastani B. Prolonged asystolic hyperkalemic cardiac arrest with no neurologic sequelae. Ann Emerg Med. 1994;24(2):305-311.

5. Slettedal JK, Lyberg T, Ramstad H, Beraki K, Nicolaissen B. Regeneration of the epithelium in organ-cultured donor corneas with extended post-mortem time. Acta Ophthalmol Scand. 2007;85(4): 371-376.

6. Young B, Shemie SD, Doig C, Teitelbaum J. The Role of Ancillary Tests in the Neurological Determination of Death. Can J Anes. 2006;53(6):620-627.

7. MacGillivray RG. Spontaneous recovery after discontinuation of cardiopulmonary resuscitation. Anesthesiology. 1999;91(2):585-586.

8. Al-Bar MA. Islamic ethics of organ transplantation and brain death. Saudi J Kidney Dis Transpl. 1996;7(2):109-114.

9. Bandini J, A.M. Courtwright, E. Rubin. Ethics consultations related to opioid use disorder. Psychosomatics. 2019;61(2):161170.

10. Neumann P, Berglund JE, Fernandez Mondejar E, Magnusson A, Hedenstierna G. Dynamics of lung collapse and recruitment during prolonged breathing in porcine lung injury. J Appl Physiol. 1998;85(4):1533-1543.

11. DeVita MA, Snyder JV, Arnold RM, Siminoff LA. Observations of withdrawal of life-sustaining treatment from patients who become non-heart-beating organ donors. Crit Care Med. 2000;28(6): 1709-1712.

12. McGaw JL, Wesley AJ, Dilip KS, Michele HM, Vinod TK. Incentives for organ donation? Lancet. 1991;338(8780):1441-1443.