Documentary Research Article on Uterus Transplantations Using Deceased Donor Organs: A review to 2021

Artículo de investigación documental sobre trasplantes de útero utilizando órganos de donantes fallecidas: una revisión hasta 2021

Athene Hilary Aberdeen*

https://doi.org/10.36105/mye.2022v33n4.01

Abstract

Reproductive technology reached a new high in 2017 with the birth of a baby girl using the uterus from a deceased donor. There were no unusual complications recorded with the procedure or with the health of the mother. Three years earlier, in Swedish trials, two boys were born from uteri taken from live donors, relatives of the mothers. Science had managed to cure absolute uterine factor fertility AUFI, in women so afflicted. While some fine tuning in procedure will dominate future development, especially the clinical aspects, we must not forget the ethical considerations. This documentary review therefore focuses on how deceased donor uterus transplantations are viewed within the

* University of the West Indies, St. Augustine Campus, Trinidad. E-mail: ahaberdeen@gmail.com https://orcid.org/0000-0003-3420-4151
Reception: 18/01/22 Acceptance: 19/04/22

available data in three contexts: the anthropology of the human, in medicine, and in sociology with emphasis on certain cultural constructs of modern liberal society. Underlying the diagnosis is the fact that the uterus is a non-vital organ in human physiology, and dead donor uterus transplantations or DD UTx raise new challenges in ethics. The biases observed in the data, the limitations; a procedure less than ten years old, and the conclusions we arrived at, are presented in this review.

Keywords: uterus transplant, deceased donor, live birth, surgical risks, gestational motherhood.

1. Introduction

Cognizant of the widespread practice of organ transplantation in modern medicine and with reference to the first live births from living donors in a Swedish research program set up to treat uterine factor infertility (1), this paper discusses and analyses the first live birth from the uterus of a deceased donor that occurred in Brazil in 2016 (2). In consideration of the ethical implications of the risks involved for women, and the procedure itself, we initially queried whether in light of the shortage of donors for solid organ transplants in general, and the inevitable mainstreaming of this surgical practice, would uterus donation not fall prey to the commercialization already endemic in supplying human organs like heart, liver and kidneys? Furthermore, would not such a situation raise inevitable social justice concerns for this vulnerable group of women? Further research revealed the speculative nature of these questions and the lack of analytical data available, so we focused instead on the impact of using uteruses of deceased persons for transplantation in women with absolute uterus factor infertility or AUFI. The data was analysed within three areas: the anthropology of human persons, in the medical context and in the sociocultural context. We noted how society views the human person and how instrumental use of the body is pervasive in our domain of DD UTx. We found that body parts are

https://doi.org/10.36105/mye.2022v33n4.01

often viewed as therapeutic tools to be desired, and that these assumptions were based on unexamined comparison with organ transplantation within the established fields of other solid organs. We also observed that instrumental use of the human body is unavoidable in UTX and wondered about the danger of reification of medical procedure, to the detriment of the human person in this context. To our surprise, we found that DD UTX trials were being held in at least thirteen countries worldwide as of 2021. We therefore welcomed the suggestion by two different reviewers to have an international registry with sound operational standards available to all. We explored how such a mechanism could be established to protect the authenticity of research and avoid harms and injustices to the women and their partners seeking treatment. The registry will also help bioethicists and other professionals to assess the development of this novel reproductive technology, as it impacts not only our beliefs about gestational motherhood, but also our attitudes to the integrity of women's bodies, and to fertility itself.

2. Method

The initial bibliographic search began with *BioEdge* a helpful, online, weekly Australian newsletter that summarizes current developments in bioethics from a Roman Catholic perspective (3). From this secondary and up to date resource three primary documents were obtained: a news release from *The Lancet* on the first baby born via transplantation from a deceased donor (2), and, an article on ethical issues on the occasion of the first uterus transplantation in Spain.(4) The bibliographic research was first classified into six areas: the history of organ/uterus donation transplantation; the anthropological considerations of the practice, the medical/psychological aspects, theological implications, Christian and Islamic, the sociocultural implications and the legal and commercial considerations associated with uterus transplantations for motherhood. These areas were narrowed

https://doi.org/10.36105/mye.2022v33n4.01

down to three: the anthropological, the medical and the socio-cultural contexts of DD UTx. The databases accessed were *Science Direct*, *JSTOR, PubMed, PhilPapers* and *Cochrane Library*. Some sources were obtained from within articles that referred to other secondary sources like the *Journal of Medical Ethics, Dignitas* and the *American Journal of Bioethics*. Given the recent history of the procedure, the database search was confined to the period 2010 to the present, i.e. 2021 and the descriptors used were 'uterus transplants', 'deceased donors', 'living donors' and 'live births'.

There are many articles on uterus transplantation with living donors but few with deceased donors. Given the date of the first live birth in 2014 and from a deceased donor in 2017, one had to balance historical data with what was more relevant since the evidence being obtained is from clinical trials only. The historical and practical considerations behind dead donor uterus transplantation or DD UTx were obtained from a systematic review of uterus transplants in 2016 (5), and from two more recent reviews dated in this current year 2021 on "the state of the art" of the practice, (6) and the other, specifically on deceased donor transplantations by Hammond-Browning and Yao. (7) These provided sufficient data to base a good quality assessment. However, the variability of data was quite narrow. There was only one article on psychosocial problems based on the Swedish trial (8), and a systematic review of the treatment of deceased organ donors by Van Erp *et al.* (9) in 2018 that dealt with the clinical aspect of donor management protocols at various centers. Two reviews pointed to confidence in the control of immunosuppressive drugs which all transplant patients have to ingest for some time. (10,5) Two tables in one review presented a) the advantages and disadvantages of living donor and deceased donor uterus transplantation organ donation, (7, p.141) and, b) the occurrence of deceased donor transplants and outcomes published in the literature as of January 31, 2021. (7, pp.142-143) Table 1 provides information on the pace of trials with DD UTx from a global perspective. The number of countries is one less than the observation made above that 13 countries are

https://doi.org/10.36105/mye.2022v33n4.01

engaged in such trials, mainly because the authors relied on reports from academic journals rather than media reports.

Table 1. Order of deceased donor transplants and outcomes, as published in the literature as of 31st January 2021.

Order	Country	Year of UTx	Outcome	Where Reported
1	Turkey	2011	In situ	Ozkan O, Akar ME, Erdogan O, Ozkan O, Hadimioglu N. Uterus transplantation from a deceased donor. Fertil. Steril. 2013 Dec; 100(6):e41. https://doi.org/10.1016/j.fertnstert.2013.06.041
2	USA (Cleveland)	2016	Hysterectomy day 12, vascular candida infection	Flyckt R, Kotlyar A, Arian S, Eghtesad B, Falcone T, Tzakis A. Deceased donor uterine transplantation. Fertil. Steril. 2017 Mar; 107(3):e13. https://doi.org/10.1016/j.fertnstert.2016.12.009
3	USA (Baylor)	2016	Birth 2020. Caesarean hysterectomy	Johannesson L, Testa G, Putman JM, McKenna GJ, Koon EC, York JR, Bayer J, Zhang L, Rubeo ZS, Gunby RT, Gregg AR. Twelve Live Births After Uterus Transplantation in the Dallas UtErus Transplant Study. Obstet. Gynecol. 2021 Feb; 137(2):241-249. https://doi.org/10.1097/AOG.0000000000004244.PMID:33416285
4	Czech Republic	2016	Hysterectomy day 7, thrombosis	Chmel R, Novackova M, Janousek L, Matecha J, Pastor Z, Maluskova J, Cekal M, Kristek J, Olausson M, Fronek J. Revaluation and lessons learned from the first 9 cases of a Czech uterus transplantation trial: Four deceased donor and 5 living donor uterus transplantations. Am. J. Transplant. 2019 Mar; 19(3):855-864. https://doi.org/10.1111/ajt.15096
5	Czech Republic	2016	In situ	Chmel R, Pastor Z, Novackova M, Matecha J, Cekal M, Fronek J. Clinical pregnancy after deceased donor uterus transplantation: Lessons learned and future perspectives. J. Obstet. Gynaecol. Res. 2019 Aug; 45(8):1458-1465. https://doi.org/10.1111/jog.13992

Order	Country	Year of UTx	Outcome	Where Reported
6	Brazil	2016	Birth 2017. Caesarean hysterectomy	Ejzenberg D, Andraus W, Baratelli Carelli Mendes LR, Ducatti L, Song A, Tanigawa R, Rocha-Santos V, Macedo Arantes R, Soares JM Jr, Serafini PC, Bertocco de Paiva Haddad L, Pulcinelli Francisco R, Carneiro D'Albuquerque LA, Chada Baracat E. Livebirth after uterus transplantation from a deceased donor in a recipient with uterine infertility. Lancet. 2019 Dec; 392(10165):2697-2704. https://doi.org/10.1016/S0140-6736(18)31766-5
7	Czech Republic	2017	Birth 2019. Hysterectomy 5 months, post-birth	Fronek J, Janousek L, Kristek J, Chlupac J, Pluta M, Novotny R, Maluskova J, Olausson M. Live Birth Following Uterine Transplantation From a Nulliparous Deceased Donor. Transplantation. 2020 June. https://doi.org/10.1097/TP.0000000000003346
8	Czech Republic	2017	Hysterectomy month 7, infection	Chmel R, Novackova M, Janousek L, Matecha J, Pastor Z, Maluskova J, Cekal M, Kristek J, Olausson M, Fronek J. Revaluation and lessons learned from the first 9 cases of a Czech uterus transplantation trial: Four deceased donor and 5 living donor uterus transplantations. Am. J. Transplant. 2019 Mar; 19(3):855-864. https://doi.org/10.1111/ajt.15096
9	USA (Baylor)	2017	Graft failure, failed to properly reperfuse	Testa G, McKenna GJ, Bayer J, Wall A, Fernandez H, Martinez E, Gupta A, Ruiz R, Onaca N, Gunby RT, Gregg AR, Olausson M, Koon EC, Johannesson L. The Evolution of Transplantation From Saving Lives to Fertility Treatment: DUETS (Dallas UtErus Transplant Study). Ann. Surg. 2020 July. https://doi.org/10.1097/SLA.0000000000004199
10	USA (Cleveland)	2017	Birth 2019. Caesarean hysterectomy	Flyckt R, Falcone T, Quintini C, Perni U, Eghtesad B, Richards EG, Farrell RM, Hashimoto K, Miller C, Ricci S, Ferrando CA, D'Amico G, Maikhor S, Priebe D, Chiesa-Vottero A, Heerema-McKenney A, Mawhorter S, Feldman MK, Tzakis A. First birth from a deceased donor uterus in the United States: from severe graft rejection to successful cesarean delivery. Am. J. Obstet. Gynecol. 2020 Aug; 223(2):143-151. https://doi.org/10.1016/j.ajog.2020.03.001

https://doi.org/10.36105/mye.2022v33n4.01

Order	Country	Year of UTx	Outcome	Where Reported
11	Czech Republic	2018	Unknown	Chmel R, Pastor Z, Novackova M, Matecha J, Cekal M, Fronek J. Clinical pregnancy after deceased donor uterus transplantation: Lessons learned and future perspectives. J. Obstet. Gynaeco.l Res. 2019 Aug; 45(8):1458-1465. https://doi.org/10.1111/jog.13992
12	USA (Penn)	2018	Birth 2019	Fronek J, Janousek L, Kristek J, Chlupac J, Pluta M, Novotny R, Maluskova J, Olausson M. Live Birth Following Uterine Transplantation From a Nulliparous Deceased Donor. Transplantation. 2020 June 9. https://doi.org/10.1097/TP.0000000000003346 See also: Penn Medicine. First Uterus Transplant at Penn Medicine leads to Baby Boy. [accessed on 31st January 2021]. Available at: https://www.youtube.com/watch?v=BKgr3IFK-Gzw

Source: Hammond-Browning N, Yao, SL. 2021; (2):142-143.

One also notes in the table 1, the focus of the original researchers as this is reflected in the title of their reports. There was no data published on the financial aspect of deceased donor uterus transplants. On the religious aspect there was no real data except on a related topic, embryo donation. The Islamic approach to IVF, its relation to law and to the surrogacy regulations in Iran (11) were seen as relevant since IVF is an important aspect in uterine transplantation procedure. While two reviews touched on policy issues, one indicated that an international registry for uterus transplantation was setup after 2017 the year of the first live birth from a deceased donor uterus (7).

Following upon the areas in which the data was classified, the anthropological, medical and socio-cultural, the data on DD UTx was then problematized within the same classifications to get a surer sense of what was really at stake. The anthropological context recognizes the human person at the center of research and practice; the women who suffer from absolute uterine factor infertility or AUFI.

That person is a rational human being, has a mind and spirit as well as a body; a composite whole, and possesses an innate human dignity which cannot be taken away. These qualities are recognized both in the Judeo-Christian and Islamic traditions. That person is also embedded in society: within the family, the community and the state. The woman with AUFI also seeks a good i.e., having a gestational child of her own, while the donor usually enables the woman to achieve her goal. Only uteri from deceased donors, however, are allowed in some countries e.g., Italy. In addition, the religious understanding of the anthropology of the human person has come under attack with procedures like in vitro fertilization or IVF and similar methods which indirectly cause the person to be seen as an instrument in attainment of a goal. In our context, the uterus is to be used as a replacement for a missing body part. This perception applies to both donor and recipient and can lead to the objectification of both agents in DD UTx as well as with living donors. The comparison is often made with solid organ transplantations like the heart, kidney and liver, but one needs to understand that the uterus is not a vital organ in the human physiology. As a result, there are deeper ethical implications in transplantation practice with DD UTx.

Medically speaking, all uterus transplant procedures are non-therapeutic. One is not cured of an existing illness, and this poses a problem of acceptance for many persons given the grave risks to the woman's health associated with the procedure. Informed consent of the recipient is the major bioethical principle in this equation. Informed consent is also required of the donor, and in the case of deceased donors, from their family. There is speculation that both deceased donor families and living donors could be subject to family and medical pressure to donate organs, and that that can impair their ability for genuine consent. This latter scenario sometimes poses a challenge to the surgical team, as the consent has to be given almost immediately after death in order to get a viable uterus. Another major risk is the regimen of immunosuppressive drugs that all recipients have to undergo. While much research is being done in that domain, the standard for stopping immunosuppressives is to remove

https://doi.org/10.36105/mye.2022v33n4.01

the successful uterus, at least with the second child. Having a child or two, seems to be the successful standard for grafted uteri. For the desired motherhood however, it is necessary to resort to IVF. Some religions, especially Roman Catholics do not sanction destroying unused embryos that are left over from that procedure. This practice remains an ongoing ethical dilemma for reproductive procedures in modern medicine for this group. Uterus transplantations also demand a complex operation with a team of highly specialized doctors and support personnel for the surgical procedure. For example, the operation with a living donor done in Spain in 2020, involved a surgical team of 20 persons, and took 12 hours to extract the uterus and 4 hours to implant it (4). While the time taken with dead donors will be shorter for removing the organ, the composition of the medical team will not change for standard procedures like this one. The question of accessibility and sustainability to such specialized care in any society has to be addressed. Since 2013 to 2021 is a very short time for research to draw conclusions, it is not surprising that only two reviews for both clinical and psychological perspectives were found in the data. Some aspects of the medical context for DD UTx thus remain imprecise and inconclusive.

The data for the socio-cultural context of DD UTx reflect the short history of the procedure in which to gather substantiated facts and initial analyses. Some thoughts that expressed modern liberal thinking about the procedure becoming mainstream were found. These were limited to the possibility of trafficking in uteri as is the case with other solid organs like heart and kidneys, and the real possibility of having DD UTx demanded as a legal right by transgender women. However, the fact that DD UTx can be preferred over surrogacy and adoption was explained as the result of the burdensome economic and legal restrictions of the governments involved, should a couple desire to have a child. Principles of justice and human rights can be invoked here, as 10%-15% of women suffer from absolute uterine factor infertility worldwide. Since surgical risks to the health of live donors are removed by using uteri from deceased persons, this fact alone will spark more trials in the future. On matters of

https://doi.org/10.36105/mye.2022v33n4.01

policy there was not much in the data either. For example, surrogacy is banned in Sweden and in an article questioning whether uterus transplantations are a "more ethical" alternative to altruistic surrogacy as produced in a government white paper on the issue, the writers decided that there should not be such a policy in Sweden unless there is first *an ethical debate on the procedure* (12). Some countries like the Netherlands and the United Kingdom are undecided whether to run trials with both living and deceased donors. Others, like Singapore have already begun such trials. Finally, more than one reviewer urged international oversight as DD UTx improves and becomes more available since it is already a global phenomenon. The proposal emphasized the importance of risk reduction, and in principle, the sharing and maintenance of patient data on an international registry (7,13). Justice issues once again are implied by having an international registry that is accessible to everyone in the field.

3. Interdisciplinary Diagnosis

Bearing in mind the interdisciplinary and transdisciplinary nature of bioethics, and conscious of the fact that the human person is a complex entity in herself and ought to be studied in an integrated interdisciplinary approach (14), this study on uterus transplantations using deceased donors, DD UTx describes and analyzes as stated earlier, three dimensions of the human as presented in the literature under review, the anthropological, the medical and the socio-cultural. The design of the study, the biases found therein, the limitation of what was found and, the conclusion drawn are hereby presented.

The successful live birth from the transplanted uterus of a deceased person marked the progression of reproductive technology that developed from experiments with dogs and a few primates in the 1960s and 1970s. The research moved to living human donors, obtaining uteri from women who previously had a child and, two live births were recorded in a Swedish trial in 2014. To date 2021, there have been 24 live births from living donors recorded in the literature;

https://doi.org/10.36105/mye.2022v33n4.01

a total of 6 from deceased donors, five more from 2017, while 12 deceased donor transplants have been carried out (5,6,7). Although closely allied to solid organ transplants, uteri are not vital organs like the heart, kidney or liver for human survival. The practice therefore brings into focus deeper and wider ethical implications about our understanding of the human person.

The human person is at the heart of the practice of uterus donation whether as recipient or donor. That person is someone with a body upon which surgery is performed. That person also has a mind and spirit, the transcendent aspect of personhood, and in the Personalist approach all three —body, mind, and spirit— form the human person (15). The recipient, a human person is also embedded in a family, a group or a society and like the religious community is also directly concerned with the life, health and welfare of the person. This second aspect of personhood is not much recognized in the literature either for there is scant attention of the psychosocial in both recipient and donor (8). The altruistic practice of giving an organ to help someone while being cognizant of the risks involved, is at base a religious one, and is recognized under different names e.g. a gift, in both Christianity and Islam. Our concern is with donations from deceased persons and there is no controversy in Roman Catholic circles unless questions arise as to the manner and timing of the death. Only brain death —that is the total loss of the integrative unity of the body— is recognized and, even this is not totally accepted. The practice of Artificial Prolongation with respiration for the purpose of cardiac functioning for a limited time, may have led to this dissension (16). With uterus transplants however, the surgery must be completed within 90 minutes of death for the uterus to be viable. Questions may arise therefore whether the dying of the donor was hastened. However, there is one aspect of human welfare in which Islam and Roman Catholicism differ, that is in vitro fertilization or IVF (17). The literature points to the recognition of free choice for the human person among Shiite religious authorities, for both embryo donation and surrogacy are morally permissible (11). These authorities use wide consultation with the community, its

https://doi.org/10.36105/mye.2022v33n4.01

leaders, medical personnel and lawyers and a decision is made in keeping with the norms of the society, as long as it does not go against the basic tenets of the faith. We recall that the first uterus transplant was recorded in Saudi Arabia in 2000 and eleven years later in Turkey, both of which are Islamic states. This bottom up approach contrasts with Roman Catholicism which has consistently pronounced on the respect due to the human person from conception-embryos; condemns the therapeutic procedures on human embryos pointing out inter alia that the body is being reduced to its biological/material dimension; that IVF separates sexuality from the person (in a marriage) and makes it easier to see the human body as one for instrumental use (17,18). There is credence to this last observation for the separation of the physical and spiritual understanding of who and what a person is can lead to a certain 'moral comfort' with buying and selling uteri as is the case with other solid human organs, to achieve a therapeutic goal. In addition, as Ikels (19) observes, bioethicists seem to forget that everyone from donor, recipient and hospital surgical team live in a complex web of social relationships, where judgment or support, both influence outcomes. It is here we see the transdisciplinary aspect of religion and culture being manifest.

As mentioned earlier, the medical context highlights a major aspect of uterus donation in general, that is the surgery is not therapeutic. This fact goes against the standard belief that medicine is meant to heal and do no harm. In uterus transplantation the graft is not intended for lifetime use. While the major reviews mentioned the non-therapeutic nature of UTX none spelt out that two major surgeries are indicated (20). The first, to receive the uterus that is grafted into the recipient's body, and the second which removes it after two child births maximum, or if there is rejection of the graft itself, or as sometimes happens a miscarriage, even after some months of being pregnant. These two risky operations occur regardless of the success of the grafted organ. Many, especially conservative Christians and the less liberal-minded humanists among us ask what motivates a woman to undergo two major surgeries for either

https://doi.org/10.36105/mye.2022v33n4.01

a 'quality of life' or a life-enhancing procedure. And one does wonder whether motherhood i.e. gestational motherhood can be considered a right for some women (20), or is it a manifestation of personal selfishness (4). Another aspect within medicine is the doctor patient relationship. This seems to be well recognized since recipients from both living as well as deceased donors have to undergo extensive evaluation of obstetric, medical and family history, and for living donors, extensive testing before the transplant procedure itself. Informed consent must be obtained after a careful process in which risks/harms as well as benefits are explained. It is obvious though that there are more harms than gains, for the surgery has only one aim which may not be realized. The doctor -patient relationship will be more fleeting with the family of the deceased donor as that family has to consent to the donation and, obtaining obstetric history at time of death can be difficult (7, p.141). It may be said that all the principles of bioethics —autonomy, beneficence, non maleficence and justice— are present in DD UTx procedures. For example, there is currently insufficient evidence to conclude that any particular drug treatment or any intervention using a deceased donor improves long-term graft or patient survival after transplantation (13). Similarly, less investigated are the physical and emotional demands of the immunosuppressive drug regime on the women in question. So the true nature of the doctor-patient relationship, despite the information sharing, where immunosuppressive drugs are concerned, is in the end, the doctor knows best. The ongoing trials with DD UTx will demand conversations on the moral justification of drug therapy in this context, and on the wider implications or consequences for women who may be relegated to being 'mere bodies' in the quest for scientific validity for such drugs.

The socio-cultural aspects revolved around speculation on whether DD UTx was to be confined only to a 'genetic female' and, whether it should be limited to females with AUFI due to Rokinstanky syndrome (21,4). The transgender question was raised, as legally in some jurisdictions, a trans-gender woman can demand DD UTx to realise her longing for gestational motherhood. Some commentators see

https://doi.org/10.36105/mye.2022v33n4.01

uterus transplantation as a logical and reasonable conclusion of gender reassignment surgery. They point out that the necessary components are in place namely: *suitable uterus donors, experienced surgical transplantation teams and, gametes or embryos for implantation through in vitro fertilization* (22, p.6). What this means for new bioethics at the beginning of life, is that gestation in transgender women may not remain mere speculation for too long. The economic factor in the literature was also hinted at because comparison is constantly being made with the commercialization of organ transplants of kidney, heart, and liver and other solid organs, but no facts as to expenses were given, save for a primary source that mentioned a uterus transplantation can cost as much as 300,000 thousand US dollars. Even the fact that DD UTx is preferred over surrogacy and adoption because of the latter's expense and legal requirements, are not supported with hard evidence. There has not been enough time for research on the above questions. In the matter of donations from deceased donors for UTx transplantations, what is clearly stated in the texts and may impede DD UTx surging into public accessibility is, if the time cannot be shortened between the brain death of the donor, and organ retrieval and transplant. Studies show a longer cold ischemic time for the DD uterus can affect viability and functionality of the graft (7). Even if presumed consent becomes policy in some jurisdictions like those where only transplants from deceased person are accepted for research, the ethical conundrum of compelling donations makes a mockery of voluntariness, the bioethical norm of donation as a gift or, altruism. The same ethic will apply if later, fair access to uteri would be had by listing them on national registries, as is the norm in some countries for other solid organs. Of course, this last point is seen within the contexts of a shortage of organs and the almost inevitable human trafficking in same (23, pp.411-412). A salient suggestion to establish an International Registry for Uterus Transplantation IRUTx was raised in a review which was the first to bring together the literature on deceased donation UTx procedures and outcomes (7). The registry was established after 2017 when the first live birth from a dead donor was achieved in Brazil. The IRUTx once

https://doi.org/10.36105/mye.2022v33n4.01

set up with WMA/WHO sanctioned parameters will centrally record information that can facilitate, collate, and publish the results of UTx procedures and births from all clinical trials. In the final analysis, DD UTx is here to stay, and will surely be of interest to a global bioethics given the gap that exists in women's desire for procreative ability and their reproductive aspirations.

The main bias found in the literature is the tendency to equate other solid organ transplantations practice with that of uteri from deceased persons. The use of presumed consent that has been established with those vital organ donations may not apply with a non-vital organ as the uterus. Personal values of life and health held by potential donors may intrude. Yet, the danger exists that in the public mind, it is acceptable to transfer body parts into therapeutic tools. Similarly, the expectation of the rapid development of DD UTx into mainstream medicine may be premature given the nature and timing of the surgery. In addition, using DD UTx for other than genetic female gestational opportunity is overly pessimistic, as much more research has to be done especially in the domain of immunosuppressive drug therapy and the risks associated with it. Another bias found, is the tendency to view recipients and/or donors as purely autonomous human beings devoid of any familial and community ties. Autonomy is a value that must be respected, but in our contexts of major bodily surgery and the known risks, some attention must be paid to what values and beliefs are driving rational women of reproductive age in the society to undertake this kind of operation. If being infertile is not a life-threatening situation perhaps the family and other societal attitudes are the reasons that drive such women to see their lives as less than acceptable, and at worst, can damage or destroy relationships and even lead to illness.

The obvious limitation of this discussion of deceased donor uterus transplantation is that too short a time has elapsed to have more extensive reviews of clinical practice and psychosocial follow ups from extant successful recipients of the procedure. There are also too few cases to provide sufficient scientific evidence with risks,

https://doi.org/10.36105/mye.2022v33n4.01

as these seem identified on a case-by-case basis. However, the main limitation is that little is known about attitudes to uterus donation and transplantation in society and the interest of the women the treatment is aimed to assist. The only study in this regard was done in the United States where the initial experience showed great interest in participating in a uterus trial by both potential recipient and donors. There is therefore a serious gap in knowledge on the principle of justice which affects human health and wellbeing as these relate to DD UTx. Justice is a relational value and can be detected in all three areas of the problematization of the data, for it impacts our understanding of who the human person is, the surgical risks to health dictated by the scientific agenda pursued by the doctors, and the implied judgements- the societal attitudes that are being fostered about the bodily integrity of women and their capability to be mothers. The institutional and legal frameworks that are absent are necessary to enable just and fair dealings with ongoing DD UTx research on a global level. Some of these have been itemized in an article that explored the ethics of using deceased donors versus living ones. They include the protections that must be put in place for each kind of donor; the unique regulatory challenges, including how the state will allocate the donated organs; also whether the donor or donor's family has any right to the uterus and resulting child; and how to manage contact between the donor/donor's family, recipient, and the resulting child. (24, p.6). One cannot fail to recognize concerns that plague the sociocultural aspects in reproductive technology practice as it exists in the West. There will be variation in these legal and ethical aspects according to the cultural and community contexts within which the transplantation decisions are made. However, the bottom line is that these institutions must take care to consider the dignity of the individual/woman and take steps to prevent harms.

The conclusions drawn from the above interdisciplinary diagnosis are threefold. Women with AUFI are rational human beings with a need to realize their human potential of motherhood with the aid of modern reproductive technology. If they are fortunate, they may achieve their goal through the gift of a uterus from a deceased

https://doi.org/10.36105/mye.2022v33n4.01

donor who they may know or not know. Such altruistic behavior on the part of the donor is also an expression of the transcendent nature of the human person. The women exercise their autonomy by exhibiting informed consent to undergo the UTx procedure that is full of health risks and one that may not always achieve its goal of allowing them to have a gestational child of their own. It may be that personal desire and, or family pressure have led them to interpret their dignity as being solely connected to the present reality of being infertile and of having the means to change that reality. From the medical point of view, proof of concept by using uterus grafts to engender an end to AUFI was realized in 2017. The surgery remains nontherapeutic, and is questioned as to its moral worth by many. The need for ongoing research in the field is widely recognized, especially as it relates to the drug treatment recipients have to endure in order to ensure acceptance of the grafted uterus and the subsequent hoped-for live birth. The doctor-patient relationship in DD UTx remains paternalistic because of the specialized knowledge the physician and his surgical team possess. This may lead, if not checked, to a reification of DD UTx procedures over those bioethical principles that are necessary to ensure the welfare of the women who need help. Human safety and welfare must be discussed within other disciplines that interact with the medical reality of deceased donor uterus transplantation practice. The danger of relegating DD UTx as another market —controlled practice exists because of the shortage of organs and the limited information about the effects of clinical practice on the minds and behaviors of the successful recipients. Sociological tendencies in western society to market technological innovation, even those that pose ethical questions and are not yet fully tested have not spared the domain of DD UTx. The shortage of solid organs available for grafting, more so, uteri is a fact of life. In addition, we need more information on both women's and men's attitudes to the practice in areas other than the US and Europe since the procedure now has a global presence. It is also noticed that no pronouncement has come from organizations like the World Medical Association or the World Health Organization of the UN on DD UTx,

https://doi.org/10.36105/mye.2022v33n4.01

albeit the trial and research stage is still a recent phenomenon. However, bearing in mind that about 15 percent of women of reproductive age worldwide do have AUFI, justice alone demands that the institutional and legal frameworks in our interdependent world, ensure fair selection practices, controlled and safe research environments and truthful reporting of results from ongoing and future trials. The effectiveness of an international registry on uterus transplants both of living and deceased donors, with the appropriate benchmarks can promote a more just global community where women and DD UTX are concerned. This is more critical since the right to have a child of their own is not a surety in the bioethics of reproduction, or in the philosophical meaning of the human.

4. Conclusions and Solutions

The documentary review of DD UTX calls attention to a problem that impacts one out of every 500 women worldwide. Up to 2014, the amelioration of this non-threatening physical condition, AUFI was impossible. Driven by modern technological and biomedical innovation however, researchers arrived at another stage in UTX science by achieving a live birth with a 32-year-old Brazilian woman using the uterus extracted from a deceased person. This proof of concept impacted the fields of anthropology, medicine and sociology in ethically significant ways. With deceased donor UTX we are forced to confront once again how we understand the human person and their role in research both from the perspective of the recipient and donor; the main question being whether we agree on the instrumental use of the human body, since gestational motherhood cannot be understood as a given in the conception of the human person. Within the institution of medicine, a similar thread of the instrumental value of the human reappears; how the body responds to the ongoing work with immunosuppressive drugs. This is a regimen of therapy for all women in a transplantation process, and it can also lead

https://doi.org/10.36105/mye.2022v33n4.01

to objectification of the woman's body. In the same way is IVF perceived, since that is the only way in uterus transplantation practice to ensure a pregnancy occurs. Above all, the "do no harm' principle of medical ethics cannot be a truth recognized in uterus transplantation since the procedure is not therapeutic in nature and, harms are allowed in both recipient and living donors. Neither is there a guarantee that a child will result from the procedure with either living, or deceased donor organs. An ethical question therefore remains, whether infertility is a disease and must be cured by any means necessary. The couples' assent to undergoing the harms of UTx emphasizes the autonomy of the woman, both recipient and donor who undergo at least two major surgeries. But there is no recognition of their embeddedness in family and society, and very little is known about attitudes towards gestational motherhood and beyond for this vulnerable group of women and their partners. We think this gap should be closed as quickly as possible since DD UTx has gone global with at least thirteen countries working on their own trials. One way to promote the process is already an area of agreement, that is, to have an international registry of uterus transplantation practice, IRUTx with widely approved scientific benchmarking that can guide any future development and policy making in this domain. How crucial this is, is reflected in the sociocultural speculations found in the literature on commercialization of DD UTx and how to allocate organs fairly, and on the rights of transgender women to having a child by such means.

To this end, this writer recommends that society proceeds with caution with this novel yet developing medical technology. This approach is necessary, given the negative bioethical connotations and problematic medical consequences that exist with the procedure. The establishment and maintenance of an international registry for uterus transplantation is endorsed as vital for ongoing research and follow-up studies. It will also provide society with an avenue to assess issues of justice and fairness of DD UTx development, as they impact our attitudes on the bodily integrity of women.

https://doi.org/10.36105/mye.2022v33n4.01

References

1. Bronnstrom M, Johannesen L, Bokstrom H, *et al.* Livebirth after uterus transplant. Lancet [Internet]. 2015; 385:607-16. Version of Record. Available at: https://doi.org/10.1016/SO140-6736(14)61728-1
2. Diaz C, Pellicer A. First baby born via uterus transplant from a deceased donor. Lancet [Internet]. 2018 Dec; 392(10165):2657-58. [posted to EurekAlert System]. Available at: http://www.thelancet.com/journals/lancet/article/PIISOI40-6736(18)31766-5/fulltext
3. Cook M. First baby born from uterus of a deceased donor**.** Bioedge [Internet]. 2018 Dec. Available at: https://www.bioedge.org/images/2008images/FB_brazil_womb_transplant.jpg brazil
4. Aznar J. Uterus transplantation raises obvious ethical issues. Bioethics Observatory Institute of Life Sciences: Catholic University of Valencia; 2021. Available at: https://www.observatoriobioetica.org/2021/01/el-trasplante-de-utero-plantea-evidentes-problemas-eticos/35040
5. Ejzenberg D, Mendes LR, Haddad LB, Baracat ED, D'Albuquerque LA, Andraus, W. Uterine Transplantation: A systematic review. Clinics. 2016; 71(11):679-68.
6. Richards EG, Farrell RM, Ricci S. *et al.* Uterus transplantation: State of the art in 2021. J Assist Reprod Genet. 2021; 38:2251-2259. Available at: https://doi.org/10.1007/s10815-021-02245-7
7. Hammond-Browning N, Yao, SL. Deceased Donation Uterus Transplantation: A review. Transplantology. 2021; (2):140-148. https://doi.org/10.3390/transplantology2020014
8. Jarvholm S, Dahm-Kahler P, Kvarnstrom N, Brannstrom M. Straight out of the womb:The psychosocial implications of uterine transplant recipients and partners up to 3 years after transplantation: Results from the Swedish Trial. Fertil. Steril. 2020; 114:417-445. https://doi.org/10.1016/j.fertnstert.2020.04.060
9. Van Erp A C, van Dulleman LFA, Ploeg RJ, Leuvenink HGD. Systematic review on the treatment of deceased organ donors. Transplant. Rev. 2018; 32(4):194-206. https://doi.org/10.1016/j.trre.2018.06.001
10. Mahajan A, Wray C. Organ transplantation: A systematic review. Anesthesiol. Clin. 2017; 35(3):xv-xvi. https://doi.org/10.1016/j.anclin.2017.06.001
11. Naef S G. Iranian embryo donation, law and surrogacy regulations: The intersection of religion, law and ethics. Die Welt des Islams; Special Theme Issue: The social politics of Islamic bioethics. 2015; 55(3/4):348-377.
12. Guntram L, Williams N J. Positioning uterus transplantation as a 'more ethical' alternative to surrogacy: Exploring symmetries between uterus transplantation and surrogacy through analysis of a Swedish Government white paper; Bioethics Special Issue Uterus Transplants. 2018; 32(8):477-533. https://doi.10.1111/bioe.12469
13. O'Donovan L, Williams N J, Wilkinson S. Ethical and policy issues raised by uterus transplants. Invited review; British Medical Bulletin. 2019; 131:19-28. https://doi:10.1093/bmb/ldz022

14. Zazukhina V. Bioethics in transdisciplinary and interdisciplinary context of post non-classical science. Paper presented at: CBU international conference on innovation, technology transfer and education 2014. Proceedings of CBU International Conference; 2014 Feb; Prague, Czech Republic; 2014. Available at: http://dx.doi.org/10.12955/cbup.v2.464
15. Sgreccia E. Personalist bioethics: Foundations and applications. Philadelphia: National Catholic Bioethics Center; 2012: 3-29.
16. May W E. Defining death and organ transplantation. Catholic Bioethics and the Gift of Human Life. Huntington Indiana; Our Sunday Visitor Publishing Co.; 2008; 319-320,353-356.
17. Catholic Church. Donum Vitae- The Gift of Life*:* Instruction on respect for human life in its origin and on the dignity of procreation: Washington DC; National Catholic Bioethics Center; 2000.
18. Catholic Church. Dignitas Personae: Instruction on certain bioethical questions. CDF; 2008. Disponible en: http://www.vatican.va
19. Ikels, C. The anthropology of organ transplantation. Ann. Rev. of Anthropology. 2013; (42):89-102. http://www.jstor.org/stable/43049292
20. Cunningham CP. Womb transplant babies: A preliminary exploration of recent biomedical advances. Dignitas. 2014; (4):1,4-7,12-13. Available at: http://www.cbhd.org
21. Ronchi FU, Napoletano G. Uterus Transplantation and the redefinition of core bioethics precepts. Acta bio-medica; Atenei Parmensis. 2021; 92(5). https://doi.org/10.23750/abm.v92i5.12257
22. Spillman MA, Sade RM. A Woman in Full. Am. J. of Bioeth. 2018; 18:(7)32-34. https://doi.org/10.1080/15265161.2018.1
23. Caplan AL. Trafficking and markets in kidneys: Two poor solutions to a pressing problem. In A. Akabayashi (ed), The future of bioethics: International dialogues; Oxford: Oxford University Press. 2014 p. 407-416. Available at: https://doi.org/10.1093/acprof:oso/978019968267.003.0053
24. Bruno B, Arora KS. Uterus Transplantation: The ethics of using deceased versus living donors. Am. J. Bioeth. 2018; 18:(7):6-15. https://doi.org/10.1080/15265161.2018.1