

# Overcoming the shortage of transplantable organs: ethical and psychological aspects

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## Summary

The main ethical problem of organ transplantation is the shortage of transplantable organs. The substitute strategies currently under discussion endanger trust in transplantation medicine and thereby increase the problem. Thus ethically preferable

alternatives to overcome the shortage are suggested.

*Key words: organ transplantation; living donation; ethics*

## Introduction

Transplantation medicine raises issues requiring ethical and judicial discussion. Consequently, philosophical reflection on the many aspects of the possibility of transplanting human organs has been at the centre of intensive debate in biomedical ethics for a number of years. Alongside the developments in the field of reproductive medicine and human genetics, the close attention being given to transplantation with its many facets continues unabated. In many areas, organ transplants have matured into standard treatment. From both a medical and an economic point of view, they are often preferable to alternative forms of therapy, provided such therapies are even available. Finally and not least, progress in the field of immunosuppression has widened the circle of potential organ recipients. But this development has no counterpart as far as the extraction of organs from the human corpse is concerned. The number of donations of cadaveric organs, ethically the least encumbered option, is dwindling in many places.

Thus the most urgent ethical and sociopolitical problem is the prevention or at least the reduction of deaths on the waiting list. Herein lies the predominant ethical dimension of current transplantation medicine. Evidently, in view of the ever increasing shortage of organs, various substitute strategies are under discussion – above all here, the short-term authorisation of live donation and commercialisation of transplantation and the

long-term development of artificial organs, the use of animals as sources of organs, and the engineering of organs and tissue on the basis of stem cell research should be mentioned. These substitute strategies raise serious ethical issues, some of which are currently under heated discussion. This should not, however, hence our *first* thesis, blind us to the fact that this discussion revolves around the problems generated by the factual ethical and social scandal: the want of and ever-dwindling willingness to donate organs post-mortem. Our *second* thesis is that the current judicial and ethical discussion on substitute strategies is itself part of this underlying problem. Transplantation medicine harbours problems of motivation and possibly acceptance and confidence on the part of potential donors and their relatives. The debate on living donation, organ trafficking and the risks of xenotransplants or utilisation of stem cells is intensifying these problems. There are, thus our *third* thesis, alternatives to these substitute strategies that are ethically less encumbered and more appropriate for solving the basic ethical problem of current transplantation medicine.

In the following, these three theses will be rendered plausible in three steps. First, the overall ethical basis of our arguments will be made explicit. Second, the substitute strategies named and their ethical issues will be addressed. Third, effective alternatives will be identified.

## The ethical basis of our argument

Our reflection is based on three premises that shall be named explicitly at the outset:

- (p1) *Not* permitted: The end justifies the means. (Speaking from a philosophical point of view: (p1) rejects the meta-ethical doctrine of austere consequentialism.)
- (p2) Permitted: The (ethically legitimate) means to an (ethically justified) end are to be chosen and applied as effectively as possible. (Speaking from a philosophical point of view: (p2) rejects the meta-ethical doctrine of austere deontology.)

Our overall position therefore is that rejecting consequentialism does not commit us to hold that aspects of efficacy are ethically to be ignored on all levels of argument. But we want to make clear that reflecting on efficacy should not be misunderstood as utilitarianism [1]. Besides these two general philosophical premises our arguments are based on a third premise directly related to organ transplantation:

- (p3) In principle, saving human lives through organ transplants is to be ethically endorsed.

This premise is in no way trivial. On the one hand, with distributive justice in mind, one can certainly ask whether the means provided for transplantation medicine could not be used more efficiently in other areas of the health system. In addition to this specific worry concerning justice in medicine and health care a more fundamental objection might be formulated. This objection is that transplantation medicine in general and the concept of brain death presuppose the “man-as-machine view” of human life. This worry raises deep issues concerning philosophical anthropology and the relation between manifest and scientific image of man. Unfortunately we cannot deal with this objection here, since its discussion would need more space than available [2–5].

It is important to see that the third premise (p3) does not claim that organ transplantation is an absolute necessity. It only states that it is intrinsically worthy of being pursued. To see things

clearer we would like to distinguish between three kinds of ethical arguments very briefly: categorical, intrinsic and extrinsic arguments. The last two can again be divided into two subclasses. *Categorical* arguments claim to demonstrate that a certain type of act is, irrespective of its possible consequences and without consideration by means of other values or norms, ethically prescribed or proscribed. The most prominent candidates for categorical arguments are probably the principle of human dignity and the concept of personal autonomy. As already stated we do not consider the third premise (p3) to be of the categorical kind.

In contrast to categorical arguments, *intrinsic* arguments do not show aspects of types of action, which are not open to assessment. However, they do share with categorical arguments the approach that ethical evaluation is based only on aspects that are either immediately linked to a concrete situational action or generally linked with a type of action. External aspects eg causal consequences, or demands, or the interests of persons (or other entities) not immediately participating in the situational action are not included in the ethical justification (as long as only intrinsic arguments are involved). This is the intended strength of the third premise (p3), which in philosophical debates often is characterised as “prima facie” (in the Rossian sense).

*Extrinsic* arguments also assess a type of action or concrete action ethically under external viewpoints. This class, which likewise only puts forward ethical aspects open to assessment, must be subdivided. The one kind of extrinsic argument defines claims of persons and other entities that are not immediately involved in the situational action (eg the claims of future generations or so-called overall societal interests). The other kind of extrinsic argument aims at causal consequences, ie the much used slippery slope arguments [6].

Since we define the third premise (p3) as an intrinsic argument, we can combine the first (p1) and second (p2) premise as intrinsic aspects can be weighed up against other intrinsic aspects and against extrinsic aspects, too.

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## Comment/remarks on the substitute strategies

Since it is not possible here to discuss extensively or evaluate conclusively the individual options for remedying the shortage of organs currently under discussion, let it suffice to point out that considerable ethical reservations can be formulated for all substitute strategies, with the possible exception of the development of artificial organs.

### Living organ donations

The proportion of living donations has been increasing noticeably in recent years. For instance, in the USA there are in the meantime more living than post-mortem kidney donations [7]. In 2002, the number of living kidney donations outweighed the number of post-mortem kidney donations for the first time in Switzerland [8]. Not only have the possibilities been increased through donations of parts of organs, but there is also cumulative discus-

sion on relaxing the restrictive regulations for admissible donors (relatives or socially close persons) and even for allowing eg “altruistic strangers” [9, 10]. The criticism of a general exclusion of groups of persons as written into the German law on transplantation is justified insofar as it indicates the vagueness of the clauses and the possibility of justified exceptions. But this must not lead to the assumption that there should be no limitations at all. On the contrary, it is imperative to verify the admissibility of each individual case [11].

It is noncontentious that from the ethical viewpoint a living donation is a welcome sign of altruism and solidarity. But this should not hide the fact that the living donation seen as a whole reveals more problematic aspects from the ethical standpoint than the post-mortem donation. So the objections formulated here should not be understood as an ethical rejection of living donations as such, but as a problematisation of the living donation as a fitting substitute strategy [12].

Firstly, the risk to the donor must be specified, which is regarding eg the donation of liver parts considerable. Whilst it is plausible to assess the voluntariness of the decision for living donation ethically in such a way as to offset the violation against the principle of non-maleficence and the aspect of self-instrumentalisation unavoidably incorporated in living donation, with the current practice in mind, there are at this point two requirements: the information on potential donors must be augmented and improved; in addition, the long-term effects of living donation on the donors must be identified and analysed.

Secondly, the question of whether voluntary consent to living donation is really the expression of an autonomous decision has to be asked, since it concerns a serious decision at close range socially, which has to be reached under enormous emotional stress and in some cases under the pressure of medical urgency. Extensive evaluation of the data of registered living kidney donations in various countries revealed, for example, that two thirds of the organ donors are women [8, 13]. This gender imbalance cannot be explained by either a higher prevalence of terminal kidney disease in men or a higher proportion of women in the total population. Women are possibly more likely to feel obligated to help their sick relatives [14]. Could it be that social role models and expectations are undermining the autonomy of the decision here? At this point, it is vitally important not to reduce the concept of autonomy to autonomy of decision and action or to voluntariness, but to take into account the biographical dimension of personal autonomy [15].

Thirdly, in concrete cases, financial dependencies or interests could be the decisive motive for consenting to living donation. This would not only put the voluntariness into question, but would also undermine what sets the living donation apart: the altruism and solidarity of the living donors.

## Commercialisation [16]

At this point one could argue that a living donation out of financial or other self-interest is ethically unobjectionable as long as it is based on the autonomous decision of the contracting parties: if such an intention, based on rational evaluation and adequate information, were forbidden it would be an act of ethically inadmissible legal paternalism. However, the latter is, according to this line of argument, always ethically wrong. This implies that organ trading has to be permitted in principle.

This line of argument is only valid if one takes legal antipaternalism as a categorical principle. Yet, in this strong reading, the rejection of paternalism cannot be justified plausibly. If, on the other hand, the reference to paternalism is used only as an intrinsic aspect, the question is then which other ethically relevant aspects of an intrinsic or extrinsic nature need to be taken into account in the overall assessment. The mere indication that the prohibition of organ trading in an individual case can constitute legal paternalism is in itself insufficient to justify the ethical acceptability of organ trading.

In the meantime, advocates of the commercialisation of transplantation medicine studiously avoid speaking of organ trading. Instead, they talk about incentives to raise willingness to donate and boost the availability of transplantable organs. But the talk of incentives makes only a limited contribution to clarifying the problem, as options are being bundled which should be differentiated from an ethical standpoint. Compensation and expenses (removal of negative incentives) must be distinguished from positive incentives. The former are ethically unproblematic, since they do not create financial incentives and thereby a motive to donate, but only remove obstacles which might otherwise prevent the implementation of the altruistic intention. The removal of such negative incentives must not be limited to donors only, but be extended to the structure of co-operation between the explanting hospital and transplant centre. This also entails obstacles that lead to medical staff at the explanting hospital not being motivated to realise the possibility of cadaveric donation.

In contrast, positive incentives constitute a different motivation in the donor from that, for reasons of which a living donation becomes an ethically permissible option. This does not imply that the ethical quality of the motivation is the only ethically relevant evaluative criterion. In fact, we support the view that the ethically negative aspects of living donation are only offset by them and not simply through the voluntariness of the decision in favour of living donation.

The view is often held that proposals for organ exchange or reciprocity models do not represent cases of organ trading, but should be evaluated as ethically praiseworthy cases of reciprocity. Against this it should be said that these options also fall under the logic of exchange values and thus do not differ from organ trading in principle. They re-

place altruistic motivation by a motive of self-interest, through which two serious problems arise.

Firstly, the logic of exchange values and therefore the instrumentalisation are written into the relation of body-person [17]. This is in itself already an ethically problematic aspect that collides with many of the central moral concepts in our culture. And secondly, it is the very idea of organ trading which constitutes a main source of public distrust in transplantation medicine. So it is probable that this substitute strategy is effectively undermining social acceptance and public confidence in medical institutions [16].

#### **Artificial organs, xenotransplantation, utilisation of human stem cells**

The other three substitute strategies all have the disadvantage of only being able to lessen the shortage of organs on a long-term basis. The ethical reservations formulated in this section are not intended as arguments against the ethical admissibility of basic research in this area.

*Artificial organs* can currently be used as stopgaps and their evolution to permanent implants poses no serious ethical problems (apart from the usual high risk to the recipient in innovative therapies). But it is possible that artificial organs are inferior to human donor organs with respect to quality and durability. In this case and also for the next option, new questions concerning justice arise.

*Xenotransplants* will only be available medium term, assuming that risks of infection do not make this route entirely impassable. Alongside the fundamental philosophical issues concerning the instrumentalisation of nature and the ethical status of non-human life, xenotransplantation is an ethically less suitable option primarily for two reasons: its application will generate new distribution problems, since clarity must be gained as to who (and for what reasons) receives an animal organ and who receives a human one. As long as it cannot be as-

sumed that the quality of both types of organ and the risks involved in their implantation are the same, an equity problem will arise. But above all, the belief that animal organ sources can be utilised will reduce the willingness to donate human organs possibly long-term and undermine the motivation to address the question of making one's own organs available after death [18].

It cannot yet be foreseen whether *stem cell research* can contribute to reduce the lack of organs, and this cannot be expected during the coming decades. It is, however, obvious that research utilising human embryonic stem cells is accompanied by formidable ethical problems. We do not wish to address the ethical status of beginning human life here, and refrain from passing ethical judgment on the ethical permissibility of the utilisation of embryonic or adult stem cells [19]. It is indisputable that there is far-reaching dissent in our society on this issue and the concept of an instrumentalisation of human life via embryonic research is perceived to be ethically profoundly problematic. For this reason, no strengthening of confidence in medicine can be expected from this option. On the contrary, dwindling acceptance of and increased distrust in transplantation medicine can also be expected via this route. These will certainly also be reinforced by the disappointments evoked by excessive optimism and the grand promises of healing, which therapies again and again proclaim fleetingly.

So we come to the conclusion that the primarily discussed substitute strategies cannot remedy the existing organ shortage either short or medium term, but – quite possibly with the exception of the development of artificial organs – will actually, if anything, have negative effects on the readiness to donate post-mortem. It will therefore be necessary to seek ethically more sustainable and pragmatically more promising alternatives.

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## **Ethically more sustainable and pragmatically more promising alternatives**

In conclusion, we postulate seven alternative measures that are ethically less encumbered and more effective (the more so, as they can be effective in the near future):

#### **Presumed consent is to be anchored by law to replace restrictive explantation regulations**

The problem of the shortage of transplantable organs is urgent, as it is the cause of patients' death or avoidable suffering. It is therefore ethically defensible to expect members of a society who participate in the existing medical system to decide whether or not they want to acquiesce to the removal of organs after their death. The technical possibilities of documenting these decisions and

possible later revisions are on hand. Moreover, it is possible without elaborate outlay to inform members of our society that their silence will be assessed as presumed consent. Presumably, the legal anchorage of presumed consent as the criterion for explantation will at first lead to numerous hostile demonstrations of explicit refusals. But the total number of cadaveric donations is not expected to fall. In the longer term, the number of transplantable organs from cadaveric donations can be increased considerably in this way. Furthermore, the concept of presumed consent would lessen the burden on relatives, as they would in the majority of cases simply be informed, but would not have to decide on behalf of the deceased, this often being tied to conflicting decisions [20].



To realise this, existing German or Swiss laws would have to be changed. In Germany the more restrictive clause has been integrated into the transplantation law because of worries concerning the validity of brain death as a criterion for death of a human being. Since this package is neither justified regarding brain death [15] nor in connecting these two questions [21] we think that a new initiative of legislation is ethically demanded.

#### **The infrastructure of transplantation medicine must be improved.**

The reduction of negative incentives for transplanting hospitals and the optimisation of the cooperation between the medical institutions involved in a transplant will boost the motivation of the medical staff to inform patients and relatives of the possibilities of organ donation after death. More efficient recording of brain deaths and on that basis the full use of the potential of cadaveric donations will markedly reduce the current shortage of transplantable organs [16].

#### **Medical staff approaching relatives with regard to cadaveric donations should be specially trained**

Training medical staff – for example, through the internationally successfully deployed European Donor Hospital Education Programme (EDHEP) [22–24] – improves the communicative skills needed in dialogues with relatives [25, 26], and is therefore to be recommended. This will still apply after the introduction of presumed consent. Firstly, the duty to supply information is retained; secondly, in cases of persons who died before they reached the age necessary for autonomous decisions and in cases of non-autonomous persons, consent of relatives (or proxy decision makers) will still be necessary.

#### **Explanting hospitals and transplantation centres should operate an information policy and provide transparency**

Hospitals that recruit parents and relatives for the possibility of cadaveric donation should, just like the actual transplantation centres, inform the general public in their catchment area about organ transplantation and strive for transparency. This way it is possible to eliminate distrust and lack of information and arrive at identification of the general public with organ transplantation [16].

#### **Transplantation medicine should be included in the curriculum of religious instruction or its substitute subject in the tenth grade**

Since transplantation medicine (alongside eg human genetics, reproductive technology or other focuses of biomedical ethics) can affect every member of our society, it is mandatory that information and ethical reflection on this life topic be counted as part of the core area of culturally essential knowledge. This theme would therefore deserve to be integrated into school curricula.

#### **The public's attitude regarding transplantation medicine and the motivation in favour and against cadaveric donation must be determined empirically**

The determination of factors curtailing the willingness to donate organs [27–31] is of paramount importance in phasing out existing information deficits or motivational obstacles and in developing appropriate measures for improving the willingness to donate organs.

#### **The efficiency of measures to alleviate the shortage of organs must be reviewed**

Our ethical evaluation is not based on categorical ethical arguments, but on complex balancing and empirical prognoses. The efficiency of the proposed measures should therefore be reviewed in order to give the ethical considerations a solid factual basis.

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## **Conclusion**

The underlying problem in transplantation medicine is the insufficient realisation of cadaveric donation. In view of the shortage of organs, the question as to how to increase the number of transplantable human organs, or how to realise other alternatives should be addressed. In our estimation, a number of ethical problems besetting transplantation medicine today stem from the ethically problematic aspects of growth strategies being pursued or proposed in order to eliminate or at least alleviate the problem of the shortage of organs.

The growth strategies mentioned do not come up against categorical ethical objections. With the

exception of the development of artificial organs, against which the temporal perspective of its realisability speaks first and foremost, all other options currently under discussion or development give rise to the problem that, due to their intrinsic and extrinsic ethical problems, they undermine public confidence in transplantation medicine and hence also the willingness to acquiesce to post-mortem organ donation. In view of the fact that there are indeed alternative measures that are not burdened by this difficulty, it is imperative to make use of the ethically preferable alternatives addressed here. The ethical challenge consists in allowing post-mortem organ donation in our society to become

a mutual concern and social normalcy by courtesy of diverse institutions.

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