Allocation of organs and tissues and the discipline of transplantations

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Abstract

Human organs and tissues for transplant are example of scarce resource in health that cannot be financially produced or increased. The trade of human organs and tissues is ethically censured as it does not relate to exercise of autonomy, but usually is a decision motivated by economic hardship. This article analyses aiming to evaluate the application of the distributive justice: types of transplants, those of scarcity and applicability of the reserve premise of the possible in view of this circumstance, the main allocation criteria applied to the matter, the availability or unavailability of major organs and tissues, and the discipline of the topic in the country. One concluded by the difficulty in changing, legally and punctually, preset allocation criteria in the sector, although new perspective could be suggested for future legal approaches, aiming at expanding in an ethical, fair and safe manner the provision of available organs for transplants, particularly those derived from a corpse donor.

Key words: Organ transplantation. Resource allocation. Health care rationing.

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The possibility of replacing body parts irreversibly compromised in order to save lives or improve their conditions of existence, has been a challenge pursued for centuries by mankind. Still in the middle age, works of art as *The Miracle of Kosmas and Damian and Kosmas and Damian Transplanting the Leg of a Moor* [1-3] represent the history of the catholic saints physicians who, having facing the need to amputate the leg of a patient, they replaced it by a leg of a Moor, recently deceased.

Without the divine intervention, however, the first records of attempts of tissue transplants showed failures, motivated mainly by ignorance and poor development of therapeutic care. Only in the 19th and 20th centuries a greater success was achieved, with reported cases of bone graft, in 1890, in Scotland, and renal transplantation between twins, United States, in 1954 [3].

The first heart transplant, performed in South Africa, in 1967, launched a wide international discussion about brain death diagnosis and donation and transplants of

organs in general. These have become important and special features on health, whose shortage cannot be supplied by financial resources, even in countries where some kind of trade is allowed in this field. This gap between supply and demand for bodies and tissues characterizes what can be called real, material or factual shortage, and implies attentive allocation criteria in its discipline, since it is focused on finite resources before the needs, demands and expectations more and more larger and frequent.

Types of transplantations

Transplantations performed in humans can be of organs (as heart, kidneys, liver, pancreas, intestine); of tissues (such as corneas, heart valves, bones, skin); also of composites (involving several elements, such as transplants of limbs, face, trachea); or of substances (such as bone marrow, blood, sperm and ova).

They are called autologous when made with resources from the body itself, like auto grafts of skin or bone marrow auto transplants; allogenic or homologous at the reception of organ or tissue of another human being; and xenotransplants or heterologous transplants when coming from another animal species, which have been the subject of intense ethical discussion for showing a lower rate of compatibility. Transplantations between *univitelline twins*, with same genetic load, receive special nomenclature, being called *syngenic* or *isotransplants* [4]. It is important to note that the autologous blood transfusion, collected prior to an elective surgery, for example, and admitted even by some religious currents that resist to blood transfusion in general.

The procedures can be carried out, yet, from a living donor (as in the case of kidney, bone marrow, parts of the liver and lung) or, more commonly, from a dead donor. The latter is preferable since it does not involve damage to the donor, and may derive from the diagnosis of irreversible cardiac death (as in the donation of corneas and bones, possibilities up to six hours after cardiac death) or by brain death (for smaller organs that demand the survival, maintenance of irrigation by cardiac activity, as the heart, lungs, liver, the pancreas and kidneys).

Generally speaking, the success of the transplants has grown significantly in recent years. The survival of renal transplanted reaches today 90% to 95% in the first year; 86% in pancreas transplants, 85% in liver transplants and heart and 78% in lung transplants, according to figures from the Brazilian Association of Transplantations (ABTO) [5].

The organs and tissues for transplants represent, therefore, the chance of recovery, either through remarkable improvement of quality of life (as in the case of corneal transplants in blind patients

and kidneys in dialysis patients), either as evidence of a future for those who foresaw death as am imminent perspective, confirming them as precious resources to be allocated.

Types of scarcity and the argument of reserve of possibilities in relation to human organs and tissues, as resources for health assistance

From the recognition of organs and tissues for transplants as relevant resources for the promotion and recovery of health, which otherwise cannot be perfectly provided, and also discuss their condition of supply and scarcity, in the context of allocation of goods in the sector.

Initially, speaking in types of scarcity, Elster [6] categorized them as *strongly or weakly natural, almost natural and artificial*. The strongly natural scarcity, according to the author, is one in which there is nothing that anyone can do to provide it and may be exemplified by the number of Rembrandt paintings. In scarcity called *weakly natural*, there is nothing that anyone can do to ensure its provision to satisfy everyone, as is the case in terms of compatible organs. In scarcity called *almost natural*, explains Elster, the provision can be increased, even the satisfaction, but through actions of individuals, as in the availability of children for adoption or sperm for artificial insemination or blood for transfusion. Finally, the artificial scarcity considered depends on Government decisions, as reflected in budgetary matters arising therefrom, and in situations in which the author cites the space in preschool.

Berlinguer [7] also classifies scarcity as *absolute and relative*, suggesting that the first one reports to material aspects, the in fact scarcity; and the latter refers to formal aspects in the allocation of resources. The conditions of scarcity also associates the argument of the so-called *reserve of possibilities*, from German law and according to which, even though the right exists as there is, in fact, the announcement of a constitutionally guaranteed right to health, and all that entails, the fair expectation of having access to resources therefore finds limits on actual possibilities of its implementation, according to the existence and availability or not of the required resources.

The first three above mentioned categories of scarcity join the reservation possibilities *material*, *factual* or *real*; and the fourth way is the artificial scarcity and refers to the reservation of the possibilities *formal*. Canotilho [8] talks about reservation of the factual and legal possibilities, referring to factual reserve that related to the limitation of material resources, with its real and concrete finitude. On the other hand, the legal reserve is associated to the ability, the power or the jurisdiction of provision of existing resources. What is called sometimes budget reserve or parliamentary reserve regarding budget, relating

generally to financial and organizational aspects simultaneously

Regarding the reservation of the formal possibility, it can occur that the political and budgetary discipline, within the discretion ascribed thereto, did not prioritize a given resource for a given case, it being understood that the same cannot be granted for that purpose, under penalty of interfering in the legally established availability, even though the resource (or financial means to get it) exists materially. It should be investigated, in that event, the reasonableness of legal or administrative criteria used and the submission of the conduct discretionarily alleged to constitutional mandate. It is noticed, however, that in both cases the obstacle is formal, usually away when priority is defended for the minimum compliance with the minimum existential.

In turn, the reservation of possible material joins to the effective absence of financial quantitative or, more commonly, by the real lack of non-economic, durable, resources, characterizing the so-call *non-equity scarcity*, represented, for example, by human resources, being considerably more difficult or even impossible to circumvent this obstacle by through a judicial decision that recognizes the right and orders its fulfillment. In this line, it is not enough to determine the State to increase in thirty days the number of beds for neonatal intensive care units (ICU) or space in surgical centers, and that, if required and due to the evidence of the need to allocate funds for this purpose, if there is not a sufficient number of trained.

professionals to assist them, and if it takes a greater time to properly prepare the teams.

Disregarding limitations that are phatic is running the risk of converting the decisions and the legal discourse in the famous "*make believe*", which would thus be delivered by the Law as if was by Emilia of Monteiro Lobato: *a make believe that the hospital does exist, and that nothing is missing; that there are space for everyone; that professionals are trained and in a sufficient number; that all have housing; that schools are appropriate and that the minimum wage meets all needs.* There are resources though, that cannot be produce in an instance, even with the court order and with constitutional backing. The reservation of the possibility can, then, in fact, restrict Law, when it represents a *real limit of scarcity* [9], which can be easily realized in the insufficiency of non financial resources.

This is exactly the situation of compatible organs for transplant, classical configuration of equity scarcity that no court decision could ensure full condition able to meet everyone who needs. Indeed, it is not enough the undeniable recognition of the right to life and health and the command of organ allocation available to the applicant. These are hypotheses in which it shows inescapable to appeal to selection and exclusion criteria and the so-called *trade offs* [10], considering that the solution to be given will never be truly individual, but it always represent the real exclusion by another interested person, in addition to the very issue of biological compatibility of the organ being a real factor that the judiciary cannot suppress or ignore.

Legally, the circumstances would be the required hinder, following the example that occurs in public selections, determining to be called upon to integrate the process that would eventually be deleted by judicial decision favorable to the applicant. The problem is that the conformation here is, undoubtedly, far more serious and irreversible, and also has the additional difficulty of extreme time limitation, not only by the seriousness of the state of health of those involved, but mainly by the short visceral vitality after its withdrawal from the body. Additionally, there may be more than a request for the same organ, allowing several litigations that cannot be circumvented even by the determination that more copies of the claimed asset are made available, due to the evident factual impossibility.

In an eventual multitude of litigations, of applications on the same asset, the survey of any of the applicants generates a new impasse, not only with the eventual licensors in the process, but also with the other authors in plaintiffs in other litigations, causing a true web of claims absolutely inconsistent and irreconcilable. It is noted the relevant risk of conflicting court orders for the same team and on the same organ, with a too short space of time for the resolution, through the broad comparison of the rights involved, which, ultimately, has a similar repercussion in human dignity and on equality of recognized rights. It is a situation of true impossibility.

Luis Roberto Barroso [11] speaks, in such cases, of a *material impossibility of fulfillment of the rule,* generating its *non-enforceability*. In a similar sense, analyzing both the issue of efficiency and effectiveness of the rights involved, Ana Cristina Meireles [12] states categorically that the *scarcity of resources may not be obstacle to the recognition of the right*, but emphasis that it can be an impediment to its practical effectiveness, in case of material impossibility, that is, when the scarcity cannot be supplied due to the of real impossibility of creating the required resources, as in the case of compatible organs for transplants.

The fact is that ignoring the elements of reality that weigh upon the allocation of resources and incurring what Amartya Sen[13] calls naivety around human rights discourse. Thus, the question if the implementation of the right to healthcare is submitted to the reservation of the possible, it should be answered, for most shocking as it sounds: it depends. Considering that the reservation of the possible is associated, ultimately to some sort of scarcity, it is necessary to define which kind of scarcity is opposed to the claimed right, in order to ascertain whether she is or not avoidable by the assertion and judicial recognition of its existential minimum primary. In this case, it is highlighted the need for knowing the mechanisms of *trade off* and use of a rationalizing parameter of choice, even in the review of individual cases.

It should be recognized that the legal affirmation in relation to an applicant may,

in fact, dramatically affect individuals who are not part of the litigation, at least in cases of actual shortages, and the judiciary may escape of consciousness of that repercussion and the requirement for further rationalization of the choices in these situations, encouraging the most typical tragic decisions. It may deducted, then, that the reserve of possibility, especially when real, obliges the allocation and knowledge and analysis of its criteria, to effect them, in which case is the allocation of organs and tissues for transplants.

Main allocation criteria applied to the issue of transplantations

In view of the need of allocating organs and tissues existing for transplants, and their unlimited personal availability, including for ethical matters, it is important to know some of the criteria for the allocation of resources applicable in the hypothesis.

Among those ethically enrolled for the allocation of scarce resources in health, four are more commonly suggested, to wit: *the queue, effectiveness, necessity-seriousness*, and occasionally the merit. Eister [6] calls the first as procedures and the following as criteria, a distinction that herein will not be made, since they are intended to the same purpose.

The chronological criterion or queue questions: *who arrived first?* It is, with the lottery criterion or drawing, an example of random directives for allocation [14]. The advantage of these parameters is their impartiality, since they dismiss any personal evaluation. This is also one of its disadvantages, since they do not consider differences that may be needed reparation. Therefore, even in the use of the criterion of the queue in the order of transplants, compatibility technical elements are taken into account in order to assure a degree of effectiveness, avoiding not only the random waste of resources, but also of hopes and lives. Legally, as from 5/29/2006, through Ordinance 1160 of the Ministry of Health (MS) [15], the liver transplants order also started following the criteria of seriousness, through a points system, which seeks, based on technical marks, to evaluate the urgency in such cases.

The queue criterion, although more rational than the random drawing, is not always well accepted by those who believe to have a greater right to the resources under discussion, according to other criteria, or only because they do not accept the fact of being left behind on their conditions. In that sense, Amarai [16] quotes a news, very common in legal actions, of a bearer of a bladder cancer who, being the forty-ninth in the waiting list for surgery, he managed to be the first one to be assisted, through a restraining order, in detriment to the other forty-eight. The same author, however, criticizes the queue criterion, when it does not take into account the urgency.

Likewise Caiabresi e Bobbitt [17], by quoting the example of kidneys allocation and dialysis' in Italy, done through a strict queue criticize the fact of not taking into account efficiency; but, simultaneously, then criticize the position of England where the excessive attachment to the

efficiency encourages the *in limine* exclusion of certain groups, as the elderly. Such authors also indicate that in the North-American model efficiency has priority, together with other considerations, such as the need and even social criteria.

The criterion of *effectiveness or prognostic* has a greater *utilitarian lode*, since it came to assure the greatest possible use of the available resources, through the investigation of the real probability of advantage in their use. By such criterion, it is questioned: *who has a greater possibility of success with the use of the resource?* Justice will be done, then, by maximizing the collective asset through the allocation of the resources to those who have better chances of enjoying them, thus favoring those benefitted ad avoiding the bad or vain use and the waste of assets, collectively. In effect, it is not suggested to not considering minimum effectiveness criteria that assure the advantageous application of precious resources, resulting useless for those who receive, to the detriment of those who with him would have a better chance of success.

Let us imagine, *verbi gratia*, to allocate organs for transplant without paying attention to the minimally essential compatibility essential between the organ and the receptor that would allow to safely supposing the feasibility of the procedure.
The priority, in this case, not only would not solve his problem with the reception of the organ, which could better serve another person, as he could suffer more serious problems, with the risk of losing the organ and the two lives. Although it is not measured, as a criterion of unique allocation in the species, who, among all awaiting transplantation, present greater compatibility with the available evaluation implausible in practice, there is, naturally the essential care to analyze the minimum compatibility (such as weight, age, blood type etc., the example of what provides, in Brazil, art. 37, § 2 of the Ordinance 3,407 GMMS) [18] between the donor and the first candidate to receiver, obviously waits not for an any organ, but one that is biologically capable of incorporating.

The *necessity* criterion questions *who needs most*? aimed at defining to whom allocate scarce resources. This greater need when understood in the sense of *seriousness*, is one of the most natural sounding criteria used, which satisfies the first patient in a situation of greater urgency. In disfavor of that criterion, it is noted the risk (abominated by utilitarians, but that either ceases to be a disadvantage for non utilitarian) of wasted resources - already per se scarce - devoted to patients who, so serious they are, no longer have real hope of recovery.

Another implicit risk to this criterion is the subjectivity in the assessment of urgency, which attempts circumventing by using objective criteria, such as technical markers in severe points systems, like the parameters currently used in the allocation of livers for transplantation in Brazil.

The priority, in this case, not only would not solve his problem with the reception f the organ, which could better serve another like the parameters currently used in the allocation of livers for transplant in Brazil.

A bioethical allocation criterion sometimes considered in the hypothesis *merit*. It wonders *who deserves more priority, by his history, his way of life or contributions to society*? The merit takes into account the contributions of the individual to society or his possible contribution to the pathological condition, in view of his conduct of life. Such criterion envisages two main risks: initially, the danger of seeing people from their usefulness to society, and not their intrinsic value [14]. In addition, there is the risk of inciting prejudice against the so-called stigmatizing diseases or incurring in dangerous subjectivity of moral judgment. However, one of the most difficult criteria to displace, in human assessment of allocation demands, is of those who more evoke the intuitive notion of justice.

> Question would be, in this case, for example, whom assist with priority between a scientist in the process of discovering a cure for cancer, who suffered a heart arrest, and an unemployed, drug user, after overdose; between the bearer of alcoholic cirrhosis and the child who was born with atresias (important stricture or occlusion) of bile, both needing a liver; between the outlaw shot by the police in shootout and the victim shot by him. The issue of criminals, by the way, deserves particular mention since considering this condition as an isolated element of infringement in the allocation of resources, although under the merit criterion is in the sense that the candidate generated damage and no benefit to society, would give it a kind of accessory penalty [14], not provided for by law.

On the transplant list, mention is also made to Israel and Singapore's legislations [6], combining this allocation criterion with the queue criterion, when setting that will only be admitted in the list of recipients who are also donors of organs and tissues, prioritizing, among these, those who offered to be donors. This measure, however, would have little value in Brazil, considering that even when the individual includes in his documents the intent to be a donor the last word and the family, after the modification of the original writing of Law 9434/97 [19], which provided for the alleged donation. Understandably, such law was poorly received by the population who was not even been informed (as, until now, is) in relation to proceedings and the importance of the diagnosis of brain death and organ transplant procedure.

In the case of the patient with alcoholic cirrhosis, the reasoning used is that there are situations in which the patient himself, by his conduct, exposed to the risk of damage that afflicts him, thus ascribing him lower priority in attendance than those considered innocent as to their pathology. This refers to a kind of *moral accountability* of the individual for hi health. Accordingly, Beauchamp and Childress [20] advocate that the equitable opportunity rule applies when the unfavorable elements in life are not the

responsibility of the agent, since, for these authors, as well as people lose their right to freedom by antisocial behaviors may lose their right to assistance by not acting on a responsible way. It would not mean leaving them without assistance, but to prioritize others, whose necessity does not derive from his participation.

Against this, are the arguments on favoring social preconceptions and the inconvenience of moral judgments son preterit behaviors, against merit (or a supposed non-merit) and real need. Many other alleged behaviors are not even sanctioned by the State, as in the case of use of alcohol beverage or smoke causing cancer and other pathologies that may require transplants.

With the intent of balancing that criterion with the effectiveness itself and avoiding the resources to be lost by the maintenance of the risk performance of the patient, it is suggested a kind of *intermediate accountability*, exemplified with the requirement that the candidate to liver transplant is abstemious for some time before the transplant which also provides him better chances of prognostic [20]. The defenders of such thesis recall that although alcoholism is also a pathology, it should be questioned if there would be justice in prioritizing eventual revel patients to give them a third or even a fourth healthy liver, to the detriment of a baby with biliary atresias, a pathology with a good prognostic in case of transplant, awaiting for the chance of having his first normal organ. In this aspect, even if considering that *all have the right to s second chance*, it is a subject of discussion if they would have the right to a third or fourth one, with equal priority. An adverse picture is that in which the following needs are involuntary, n the sense of a risk not assumed by the agent, like in the hypothesis of rejection of transplant due to immunological issues.

Thus, the cases of re-transplantation, indicated up to forty-eight hours from the previous transplant (or up to seven days, for the liver, according to annex to Ordinance MS 1,060/06 [15]), and corneal graft failure are considered of priority and urgency (according to art. 40 of Ordinance MS/GM 3.407/90) [18], unlike the allocation criterion based on the obtaining of the largest number of beneficiaries, refuting, in this case, those who *already had their second chance*. Also in similar sense, denying the criterion of the number of beneficiaries, art. 3° of Ordinance 935/GM, of July 22 1999, according to which *the pancreas and one kidney being offered preferentially to the receiver of combined transplant, when the donor meets the following minimum criteria a) age between 10 and 45 years; b) weight between 30 and 90 kg, and c) lack of personal or first degree relatives history with Diabetes mellitus* [21].

It should be emphasized that the orientation prevailing in bioethics is to antagonize discrimination against the so-called socio-behavioral pathologies,

although there are those who consider correct the personal accountability, in opposition to what is considered an excessive *social victimization*, which removes the individual's voluntary principle even in the case of illegal conducts, such as the consumption of drugs and criminality [22].

The availability or non-availability of the own organs and tissues, as part of the physical integrity

Regarding the allocation of organs for transplants and in order to raise the offer, some argue, especially among liberals, a supposed ethical and legal possibility of selling one of his double organs such as kidneys and corneas, by living donor, or, as accepted in other countries, the remuneration for raising the offer of renewable tissues such as blood and sperm. It would be, after all, a *free and informed* choice, made by a major age, lucid and capable person, in full exercise of his autonomy, as if selling work and labor, which also somehow debilitate the individual [23,24].

The fact, however, is that, particularly with respect to not repairable organs, it should be assumed that there would be no real autonomy by the seller, whereas in natural circumstances anyone would sell their organs to third parties with no affection, except by pressing financial need or complete ignorance of the gravity of the option, what would undermine the alleged freedom of choice [25, 26]. In Sebastian Mello's fortunate expression [27], as a rule, *nobody desires, as an ideal of happiness, to have parts of his body mutilated, with a serious and permanent commitment to health, even though this representatives feel a financial increase*. Such perspective explores sellers' vulnerability through false exercise of autonomy, transforming these resources into single way merchandise, having the poor as suppliers and the rich as beneficiaries, regardless of the needs of those. In the face of this, the market for human organs and tissues is ethically and legally rejected, at least in Brazil.

Despite the ban, the trade is often announced openly in the international network of computers. Authors such as Thomas Cassuto [28] mention China, India and Brazil as countries with lose control over the trafficking of organs. Berlinguer and Garrafa [26] report serious cases of violations in several countries of the world. Certain renewable parts of the human body have had their trade tolerated in Brazil, as in the case of human hair. There is, in this regard, the relevance of moral acceptance and of the concept of acceptable compliance with morality, shaping the legal and constitutional interpretation in relation to the limits of the autonomy, here worked under the prism of the bioethical principle that bears that name.

The intent with the limitation to such availability is to avoid the performance of the false freedom, of the addicted will particularly by economic necessity, by social pressure, by motivations that come from outside and not of own individual as

as legitimate exercise of self-determination. That said, it would be useless to apply here, superficially, the idea of empowerment and towards the qualification of the individual to the exercise of his autonomy and for making informed decisions about their own health, since even aware of the risks and consequences of his choice, the agent would be imbued with false autonomy, propelled by his social status, about which they do not suffer empowerment and that limits his reality as well as his decision-making freedom, not allowing him to exercise, in fact, a broad power of choice.

In the cases where is allowed the inter vivo donation, which must be exceptional, the rule is the individuality of the donation, addressed to a specific receiver and motivated by reasons of relationship or clear affinity between the donator and the receiver. It refers to situations in which it is supposed to deal with a reasonable option, that any person could do with no offense to his condition of humanity and once respected his capacity of autonomy, preceded by the requirements of obtaining free and informed consent. The objective with these precautions is to restrain the abuse of economic, labor relationships (the asymmetric relationships mentioned by Elster [6], intensifying the vulnerability and rise situations of false autonomy) or the mere camouflage of prohibited trade, under the appearance of donation, besides other care assuring the maximum possible integrity of the donor.

It should be recalled that Law 9434/97 does not include the donation of blood, sperm and ova, objects of specific regulation. Within such context, especially in the case of blood donation the so-called *directed donation*, i.e., directed to a specific person, is usually the most frequent one for most donators, who thus feel encouraged to help a known person under a difficult situation. Also object of separate discipline the situations of a replacement mother ((surrogacy) bring requirements regarding who can be a candidate to the function of gestating other's embryo, with emphasis to the gratuity and parenthood or intimate friendship of those involved, to justify such offer.

The prohibition of selling in case of dead donors, in turn, relates to the search of equal access to these resources, avoiding that they become mere economic values. Based on the discipline of inter vivo donation, and in order to improve the contribution and the General allocation of organs for transplants, defended by Taciana Andrade [29] the inclusion of the choice of allocation of deceased donor organs, following the same parameters as the possibility of donation in vivo. It is, in fact, that such a measure would facilitate greater supply and would relieve the allocation of scarce resources in the industry, unstinting without representing increased risk of commercialization, if and as they surrounded the living donor requirements in addition to, of course, the verifications of histocompatibility, minimally necessary for the effectiveness of the procedure.

Other authors [30-32] also criticized this kind of *post-mortem socialization*, which converts the cadaver organs in State property, often dissuading donations that could benefit at least partially third parties

since, as a general rule, consent to the donation of organs in general and not just one, so that targeting a particular donation, the other to anonymous receivers. This is not to allowing that, the end marketing, would entail a kind of allocation that would favor the wealthy, denying almost absolutely to the poor access to important health resource that cannot be obtained by other means, but, only, to hear the family and enhance its affection, respect, after all, quite distinct from what motivates the unwanted trade.

Indeed, it is reasonable to assume that many families would feel encouraged to authorize the donation of organs if they could direct some of them to a loved one in need, exactly awaiting for the transplant. Reversely to the proposal under examination, one can argue that the judicial control required in vivo donation for non relatives, would see here restricted by own limitation of time, due to the scant survival of the dead donor organs, providing the risk of untimely and irreversible injunction that approves situations of irregularity and fraud to the statutory criteria of allocation, perhaps motivated by economic stimuli at a time already particularly delicate for the donor's family.

The fact that the time limitation, in this case, could not allow proper investigation by detailed interview about the knowledge of the history of the deceased by the alleged receiver, presentation of photographs through which would be proven the alleged intimacy, careful examination of witnesses etc., since, unlike inter vivo donation, the perishment of the dead donor's organ is a matter of few hours.

To ensure the non-commercialization, extra care could be taken, such as to restrain the choice of the receiver by the donor family next kinship situations, in a more restricted way than occurs to the living donor, but more objectively verifiable, with the attachment of true copies of the proof of the kinship to donation procedures, maintaining, as to the donations not directed, criteria of chronology (queue) and urgency (need), exceptionally deprived, in kind, by the use of an exercise considered valid and not harmful of autonomy.

Finally, the claim of danger of assassination attempt against the life of the intended donor would not be, in practice, substantial, given the own requirements in the characterization of brain death, necessary for the donation. It refers indeed to a very specific requirement, characterized by a circumstance of difficult voluntary provocation, which should, moreover, have a known and finished cause to be able to be diagnosed.

The discipline of such resources and their allocation in the country

The organs available for transplants are, as seen, clear examples of goods materially scarce on health, whose allocation

demands extreme care and absolute impossibility of control against multiplying them, both for ethical reasons and by ethical and legal obstacles. In the face of this, about 90% of those countries bear the costs of the transplant programs through Government means, in order to grant greater impartiality and universality of access and better control of the matter [14].

Notwithstanding the material scarcity of organs and the inability to manufacture them, it is important to note that the problems of allocation in the sector can be substantially reduced by increasing the supply, by increasing the number of donations involving corpses, which, per se, reduces the interest in the marketing by streamlining the queues. It has been noticed that the information programs to the population about the diagnosis of brain death, encouraging its knowledge and demonstrating its seriousness, as well as appearances in the media, encouraging donations (often motivated by bombastic cases), have represented important occasions of seasonal increases in the number of family concordances familiar donation.

Then it occurred, *verbi gratia*, upon the death of young Eloá Pimentel, murdered in October 2008, after being kept as a hostage by her ex-boyfriend for over a hundred hours, in Santo Andre, Sao Paulo. The crime mobilized the national spotlight, and the gesture of the family of the teenager, who was only 15 years old, in agreeing with the donation of her organs, when diagnosed as brain death, generated a wave of solidarity in the country. A survey conducted by ABT0, relative to the number of donations in the following month, revealed that, of the 21 Brazilian States surveyed, 11 had an astonishing raise in the number of donations compared to the month prior to the tragedy, with increase in the number of family agreements of 50% (Pernambuco) to 266% (Parana). Five States have undergone changes and five had a slight decrease in total number [5].

Similar effect is seen in times of massive campaigns, especially in soap operas or programs of great audience, demonstrating thereby the possibility to engage socially, even in the allocation of non-fungible resources, through information policies and incentive. The ideal is that the campaigns are most active and systematic, not depending only on the occurrence of shocking event; in order to prevent violence and accidents, as well as to prevent, from the incentive to donation, other preventable deaths after everyday tragedies that may be avoided.

Let us see as an example of the greatest importance of information, the resistance noticed in the country to the original wording of Law 9434/97, which provided for the alleged donation, without any preliminary zeal in clarifying the population about the diagnosis of brain death and how the law would be applied. The legal change to include the family consultation favored the reliability of relations in the area, showing much more compatible with the Brazilian cultural environment.

But, in order to get the program to work, one needs to refine the diagnosis, notification, and fundraising systems. Note that the index of brain death is equivalent to approximately 1% of total deaths, also excluding from the potential donations, technical contraindication situations, such as the presence of blood cancers, among others. To maximize the shortage scenario, there are, on the one hand, technical and training conditions for the diagnosis, in order to be accomplished in time and safely; and, another, social diffusion of information and good advice to family, to reduce the number of families' refusals to donate[33-36].

In such circumstances, Brazil has a extremely low relative number (that is, compared to its population) of transplants, well below its potential and countries such as Spain, also of Latin origin, where there are about five times more transplants than the Brazilian average per million inhabitants [37]. It should be noted that the Spanish legislation, while providing the alleged donation, systematically performs, in practice, the family consultation. The entry list in that country is organized by hospital unit, only looking for an external receiver if there is no interested person compatible in the institution what does not seems, however, to be a decisive factor for the biggest offer or the best allocation, to the extent that the regional aspect is also considered in the Brazilian program, including the vitality of organs. The success rates in capture can be more precisely allocated to what presents itself, efficiency in notification and diagnostic phases and population awareness campaigns, strengthening the system's reliability

It is established in the Brazilian legislation that priority in organ transplantations from dead donor will be nationally given, in a single list set by the order of registration with State agencies, the Centrals for Notification, Capture, and Distribution of Organs (CNCDO), ruled by the National Transplantation System (SNT), after meeting the basic requirements of compatibility with the only exception, to each organ, in legal and objectively set cases pursuant to Art. 24, item 5, of Decree 2,268/97 [38].

Modifications performed in October 2009 in the regulation of transplants shall confer, among its main changes, priority to receivers with less than 18 years, compared to organs of the same age group; children also are entitled to subscribe to the list of kidney transplants before joining in the terminal stage of chronic kidney disease. Moreover, donors with any communicable disease shall be able to donate tissue and organs for patients with the same illness, upon consent from the receiver, and the donation of inter vivo is not akin to donor needs authorization from an Ethics Committee formed by hospital staff, before referred to judicial review. In turn, the willingness to double the amounts paid by the procedures associated with the collection and transplants entails ethical and social discussion. Considering that the amount paid to other health care procedures, more frequent and often ill-paid, is not the greatest hindrance

to procedures, but the diagnosis, authorization and collection deficiency [33,34].

The queue criterion is, therefore, the rule, combined with the effectiveness that, herein, occupies *requirement* space, and not just the requirement of preference and need criterion, under the modality of urgency or severity, to be ascertained through internationally validated points systems, known as the Model for End-stage Liver Disease (Meld), for adolescents and adults, and Pediatric End-Stage Liver Disease (Peld), for children below 12 years of age, based, among other aspects, on the type of Pathology, evolution pace, the amount of injuries viewed, laboratory values presented etc.

The objective is to ascertain the need through parameters that aim to be the most objective ones. However, Andrade [29] makes criticisms to such points systematic, reputed as difficult to be updated, since it requires constant tests. He also criticizes the possibility of fraud to the allocation criteria, through the parallel allocation of organs considered marginal, i.e., not in the ideal conditions for transplants, which would not be orderly offered according to the list of legal priorities.

These are pertinent criticism, without doubt, which do not solve the issue. As noted by the author, the allocation criteria are always subject to failures when they prefer and deprecate, due to inescapable shortage, subjects initially holding an equal right of access to the claimed good. Meld index, even not the ideal, seeks to grant objectivity to the seriousness and urgency criterion, whose failure is pointed out as one of possible injustices of the queue parameter. The issue of irregularities in the distribution of the so-called marginal organs, on the other hand, should be inhibited through the recognition that only the recipient's transplant team, according to the list legally validated, may discard an organ considered inappropriate.

The control should be made, additionally, through transparency and periodical review of the state waiting lists, by updating the data, eliminating duplicities, pursuant to the law, and excluding candidates already dead or those who do not have an effective indication for transplant.

The need to control, however, does not invalidate the legitimate purposes of objectifying and rationalizing the allocation in the area, and it should be recalled the penalties of conduct relating to irregularities in organs' donation, removal, and transplantation procedures, provided for in Law 9434/97, which rules the matter of brain death, organ donation and transplantation of human tissues and organs. Moreover, regarding the criticisms presented in mentioned work, the collection of law cases gathered by the same author revealed that, according to own analysis, at least regarding the legal decisions program has tended to approve the administrative allocation, in view of the danger of individual decision leading

to irreparable injury to other priority stakeholders, according to legally established criteria and considered ethically reasonable and legitimate.

The adopted parameters have the merit of not being based on social aspects, whether in terms of income or supposed merit, evading, in this sense, to mentioned criticisms of subjectivity. In parallel, the problems commonly related to chronological parameter of queue are mitigated by combining with the criteria of effectiveness and necessity, which, in turn, seek to reveal themselves notably objective by being based on actual data, as the immunological system compatibility, weight and age among donors and receivers (with respect to effectiveness, escaping from exclusive analysis forecasts statistics), and the evaluation of laboratory and image data (for the assessment of need, avoiding priority subjective assessments).

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The fact is that the fewer resources there are, more and more harsh allocations must be done, with all criticisms to which are susceptible the existing criteria, leaving uncovered the regrettable gap between the constitutional right to health assured to all and the lack of fulfillment that the shortage triggers and that neither the Judiciary branch, as the ultimate guardian of fundamental rights, can circumvent. To try to change this panorama and the resulting disparity between the legal discourse and the factual plan, is not very useful to intervene in the law if not if acts in social reality, one of the rare cases where this is concretely possible, especially to see the population that the donation made by the death allows you to save many lives, from a life that could not be saved.

Final Considerations

When analyzing the possible and adopted criteria, it is seen that they are parameters collectively deemed as the best expression and most reasonable means found until then for equity promotion, representing a valid manifestation of approach that ethically contemplates the constitutional health protection and the reality of scarcity and inescapable need for allocation.

It is refuted, then. in this context, its individual modification, except in the case of apparent irregularities in the compliance with the legal provisions, under the penalty of infringement of legitimate stakeholders with equal backing in the constitutional

rights to life, health and equality, and who, by the criteria legally in force, held the primacy at the time. A timely suggestion for a bill seems to be the inclusion of the possibility of directed donation, in the case of the dead donor, when the beneficiary is a kin and technically compatible, who is awaiting for transplantation.

These are not, yet, the optimal parameters, if one day they are achieved. The ideal would be not needing to deny anything to anybody, especially when it comes to expectations as noble as the guarantee of life and health recovery, designs so arduous and beautifully reflected in the catalogue of human and fundamental rights, legally based on the recognition of the undeniable equity among all people. The shortage is, however, a fact not always surmounted, albeit against it one should tirelessly fight.

The best thing to do, then, is to seek to improve the mechanisms for optimizing the organ and tissues donation and transplantation system, reinforcing its seriousness and reliability, in order to promote the legal and ethical magnification in providing facilities and making the naturally tragic process of searching for a fair allocation of these admittedly scarce health resources less painful and poignant.

Resumo Órgãos e tecidos humanos para transplante são exemplos de recursos escassos em saúde, que não podem ser produzidos nem aumentados financeiramente. O comércio de órgãos e tecidos humanos é eticamente reprovável, pois não se relaciona ao exercício da autonomia, mas é comumente uma decisão motivada por dificuldades econômicas. No intuito de avaliar a aplicação da justiça distributiva este artigo analisa: os tipos de transplantes; os de escassez e a aplicabilidade do argumento da reserva do possível ante essa circunstância; os principais critérios de alocação aplicados a matéria; a disponibilidade ou indisponibilidade dos próprios órgãos e tecidos e a disciplina do tema no país. Concluiu-se pela dificuldade de se modificar, judicial e pontualmente, critérios de alocação preestabelecidos no setor, embora se possam sugerir novas perspectivas para abordagens legais futuras, visando a ampliar, de maneira ética, justa e segura o aporte de órgãos disponíveis para transplante, especialmente os provenientes de doador cadáver.

Palavras-chave: Transplantes de órgãos. Alocação de recursos. Dotação de recursos para cuidados de saúde.

Resumen

Destino de órganos y tejidos y la disciplina de los trasplantes

Órganos y tejidos humanos para trasplante son ejemplos de recursos escasos en salud, que no pueden ser producidos ni aumentados financieramente. El comercio de árganos y tejidos humanos es éticamente reprobable, pues no se relaciona al ejercicio de la autonomía, pero es comúnmente una decisión motivada por dificultades económicas. En el intuito de evaluar la aplicación de la justicia distributiva este artículo analiza: los tipos de trasplantes; los de escasez y la aplicabilidad del argumento de la reserva del posible ante esa circunstancia, los principales criterios de destino aplicados a la materia, la disponibilidad o indisponibilidad de los propios árganos y tejidos y la disciplina del tema en el país. Se concluye por la dificultad de modificarse, judicial y puntualmente, criterios de destino preestablecidos en el sector, aunque se puedan sugerir nuevas perspectivas para abordajes legales futuros, visando a ampliar, de manera ética, justa y segura la aportación de árganos disponibles para trasplante, especialmente los provenientes de donante cadáver.

Palabras-clave: Trasplante de árganos. Asignación de recursos. Asignación de recursos para la atención de salud.

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