Reasons of Preclusion of Living-Related Donor Renal Transplants in Oman

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Abstract

Objectives: Renal transplant, especially from genetically related living-donors, is associated with excellent results. The security and free will of the donor are of paramount importance. A significant percentage of such transplants are not accomplished for both medical and nonmedical reasons.

Materials and Methods: We looked retrospectively into the causes of nonaccomplishment of renal transplants from living-related donor transplants at our center from January 2006 through June 2008.

Results: During this period, 69 and 99 potential renal transplant recipient and donors were investigated. Transplants could be performed only in 35 patients (51%). About 59% of the donors were rejected or declined. Reasons for exclusion were immunologic in 14 donors (14%). Medical and nonmedical conditions precluded donation in 35 donors (35%) and 12 donors (12%). Medical reasons consisted mainly of undiagnosed hypertension, obesity, diabetes mellitus, and renal anomalies. In the recipients, the major reason was option for transplant tourism, occurred in 11 cases (16%).

Conclusions: A substantial number of investigated recipients and donors for living-related transplant are not accomplished. The major reasons are medical for the donor and transplant tourism for the recipient.

Key words: _Living-donor, Exclusion, Selection_

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**Acknowledgements:** Part of these data were presented at the 9eme Congrès de la Société Francophone de transplant, December 8-11, 2009, Nice, France.

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Experimental and Clinical Transplantation (2010) 4: 303-306

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Renal transplant is the best modality of treatment for patients with end-stage renal failure. Living-related renal transplants offer the best outcome for these patients (1, 2). There are no material benefits for the altruistic-related living donors. Nevertheless, the psychological benefit is often great and should outweigh the potential risks (3). The incidence of end-stage kidney failure in kidney donors in good centers is not increased in comparison to the general population (4-8). Some have even shown a better survival of such donors (9). The safety and the free will of the donor are of paramount importance. For this purpose, the donor and the recipient must undergo extensive investigations and should be properly interviewed and counseled (10, 11). Nevertheless, many of these transplants are not accomplished for both medical and nonmedical reasons (12-14).

Materials and Methods

We analyzed retrospectively the clinical data and the investigations of all the potential living donors with their recipients at our center, which is the only renal transplant center in the country at the moment, from January 2006 though July 2008.

During this time, 69 and 99 potential recipients and donors (1.4 donors per recipient) came to our center. The relationship of the donor to the recipient was a sibling in 34, an offspring 30, and a parent in 14 cases. In the remainder cases, the donor was a cousin, a nephew, a niece, an uncle, or an aunt. The mean age of the recipients was 42 ± 16 years, and that of the donors was 35 ± 9 years (Table 1).

Results

Transplants were performed in only 35 out of 69 potential recipients (50.7%). Fifty-eight out of 99 potential donors (58%) were found unsuitable or

Table 1. Demographics.

Number of initial potential recipients	69
Number of initial potential donors	99
Number of donors per recipient	1.4
Relation of the donor to the recipient	
Sibling	34 (34%)
Offspring	30 (30%)
Parent	14 (14%)
Mean age of the recipients (y)	42 ± 16
Mean age of the donors (y)	35 ± 9

Table 2. Number of transplants.

Number of accomplished transplants	35
Accomplished transplants/potential recipients	50.7%
Number of rejected or declined donors	58 (58.6%)
Donor having >1 reason for rejection	6 (6%)

declined from donation. Six donors had more than 1 reason for rejection (Table 2).

Immunologic causes were found in 14 donors (14%) consisting in positive cross-match and ABO incompatibility in 10 cases (10%) and 4 cases (4%). Major medical causes in the donor that precluded donation were hypertension in 10 donors (10%) and obesity in 5 donors. Urologic anomalies, proteinuria, and diabetes mellitus were present each in 4 donors (Table 3). Twelve donors (12%) declined because they changed their mind (7%) or were pressured by a parent or a husband to decline (5%). Eleven of 69 potential recipients (16%) declined because they opted secondarily for transplant tourism (Table 4). Medical causes consisting on cardiomyopathy and obesity precluded transplant in 3 recipients

Table 3. Medical causes in the 99 donors (35%).

Hypertension	10
Obesity	5
Urologic anomalies	4
Proteinuria	4
Unknown diabetes mellitus	4
High liver enzymes	2
Viral hepatitis	2
Others	5

Table 4. Nonmedical causes in the recipients (20%).

Transplant tourism	11 patients
Change of mind	1 patient
Others	3 patients

Discussion

The renal transplant program in Oman is based almost exclusively on related living-donors. Relation is defined by blood and marriage. Organ vending and buying is prohibited. Transplants from the living-related donor offer the best outcome for the patient.

Nevertheless, safety, autonomy, and lack of coercion of the donor are paramount (11, 15, 16). Indeed, the donor does not benefit materially, and the undertaken risks, even minimal, are meant to solely for the recipient. Nevertheless, the donor should enjoy psychological and moral benefit, which should justify the donation process (3, 6, 14, 16). This necessitates that the donor is well-informed, and has investigated his/her safety, and his/her free will has been guaranteed to the best of his/her knowledge.

The donation decision may seem straightforward in some donors. Nevertheless, it is often more sophisticated and subtle and may involve a relative, a friend, or several family members. The decision may be taken independently by the donor; but in some situations, it is shared, or even taken on behalf, of the donor by another family member (14, 16).

Our results show that many potential donors and recipients do not complete the process of donation or transplant. About 59% of our donors are precluded for medical and nonmedical reasons. Similar high rates of exclusion of potential living-kidney donors have been reported by other authors. Beekman and associates from the Netherlands (12) excluded 66% of their 139 potential living donors. In their report 27 donors (19%), 32 donors (23%), and 12 donors (9%) were rejected for medical, immunologic, and socio-psychological reasons. The medical reasons were essentially related to renal diseases (14 out of 27), which consist mainly of low glomerular filtration rate, hematuria, and proteinuria. Mokotedi and associates from South Africa (13) excluded 34% of their 134 donors for medical reasons. These consisted essentially on ABO incompatibility, hypertension, and HIV infection, which were encountered in 19, 11, and 10 of their potential donors. The rate of declined donors, for both medical and nonmedical reasons, is also high or even higher in the case of living liver transplant. In some reports, only 36% and 13% of the initial potential donors were found acceptable for liver donation (17, 18).

The criteria for the physical assessment of the donor may vary between programs; nevertheless, they usually follow the same principle pathways. The Amsterdam Forum for the care of the living donor has set guidelines that are universally acceptable and applicable for evaluation of a living donor (11).

The major medical cause of rejection of the donor is detection of hypertension some times in young

donors. In 1 family, 3 brothers, aged between 19 and 22, were found hypertensive, with some cardiac echographic changes. Unlike other programs, we do not accept donors in whom the blood pressure is controlled with 1 or more drugs (10). We measure the blood pressure manually and, in case of doubt, we request the 24-hour automated blood pressure monitoring (ABPM). The blood pressure should be less than 140/90 mm Hg. High blood pressure also was a major preclusion in other reports (13).

Obesity in the donor is another factor. The problem is a challenge because obesity rate is high in Gulf countries including Oman. The prevalence of obesity with a body mass index > 30 is around 19.1% in Oman (19). The corollary is that many donors will be rejected for this reason. Our cutoff point is a body mass index of > 30, and conforms to the Amsterdam Forum (11). Nevertheless, other obesity measures, such as the hip/waist ratio, also may have been reported to correlate more closely with worse cardiovascular outcome. We should not compromise on this aspect. Obesity increases the immediate operative risks, and is now a recognized factor for hypertension, diabetes, and probably also chronic kidney disease (20). Furthermore, we have a positive experience in at least 3 donors who lost weight for the purpose of donation. This has also been reported by other authors (21). We also encourage actual donors to maintain a good weight.

Some authors advocate that a potential donor should not be declined on the presence of added medical risks, but rather, be fully informed about the potential consequences and uncertainties. The final decision should belong to the donor (22).

Diabetes mellitus is another challenge. About 11.6% and further 7.1% of the Omani population presents diabetes mellitus and impaired fasting glucose (19, 23). We do not accept diabetic donors even if their blood sugars are well-controlled with diet and or medication. Nevertheless, we may accept donors with impaired fasting glucose and those with a family history of diabetes mellitus. It is important to look at the long-term outcome of such donors.

Refusal of the parents or the husband for donation of the adult and competent offspring or wife is a thorny social issue. Although legally, the competent donor can proceed with donation against the will of the parents and the husband, the psychosocial and the cultural implications would be counterproductive. We do not encourage such procedures. The true solution is through education and awareness.

Medical reasons were not encountered in many potential recipients. This is because most were referred to our center after a general screening. Also, there are now only few absolute contraindications for transplant.

Transplant tourism is the major reason for which recipients are declined. The ethical considerations in such transplants are of the highest concerns. The medical outcome is poor in terms of complications and graft survival (24). The Declaration of Istanbul on Organ Trafficking and Transplant Tourism (25) has made clear positions regarding the different aspects of such transplants. The declaration catalyzed and indeed, led to the official interdiction of such transplants in many “organ supplying” countries. This has reflected positively on our local program, with a marked increase in the number transplants at our center, and has led to more confidence of the patients and their families in the local institutions.

Many potential living-related transplants are not accomplished. A substantial number of donors are declined for medical conditions. Many potential recipients opt secondarily for transplant tourism. Efforts are needed to develop an effective deceased-donor program. Other means of increasing transplants include effective desensitization protocols, donor pair’s exchange, and transplants from ABO-incompatible donors. More efforts are needed to deter the patients from transplant tourism.

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