CORRESPONDENCE

Sex imbalances in kidney transplants in Iran

Kidney transplantation is generally considered the treatment of choice for end-stage renal patients who require renal replacement therapy (1). Renal transplantation from deceased donors is the most ethical and preferred method of kidney transplantation for treating end-stage renal failure. However, as the method becomes more widely used, a shortage of kidneys for transplant is growing. Since December 23, 1954, when the first kidney transplantation from a living donor was performed in the US between identical twins, this method has become increasingly common as a way to address the gap between demand and supply for kidney transplants worldwide.

Discussions on the sale of organs are overshadowed by reports of coercion and exploitation. It is also argued that organ markets reduce transplantation from cadaveric sources and altruistic donation.

A number of studies from all different countries have reported the existence of a profound sex imbalance among kidney recipients and living donors; men are in the majority among kidney recipients but women constitute the predominant source for living kidney donations, both in industrialised and non-industrialised countries (2-9). At least one author has stated that this is true for the kidney transplantation programme in Iran as well (3).

The reasons behind these disparities remain obscure. Economic and cultural factors may contribute to gender disparity, especially among living unrelated kidney donations (LURD) (4). We looked at sex differences between recipients and living unrelated donors in what is termed as "the Iran model of kidney transplantation" (1, 5).

All kidney transplants performed from a living unrelated kidney donor from 1992 to 2006 at Baqiyatallah hospital, a university-based kidney transplantation centre and a major transplantation centre in West Asia, were included in the study. We analysed the sex distribution of our LURD donors and recipients.

A total of 2,414 kidney transplants were conducted at our centre. Of these, 2,172 were from a living unrelated donor. The sex of 1,947 (85.4 per cent) of our LURD kidney donors was reliably documented in our data registry: 1,679 (86 per cent) were male and 268 (14 per cent) were female. Of the 2,172 kidney recipients, 1,397 (64.3 per cent) were male and 851 (35.3 per cent) were female.

The term "Iran model of kidney transplantations" refers to a government-controlled and compensated living unrelated kidney donation programme that has been in operation in Iran since 1988. Volunteers who are willing to donate register at the Society for Supporting Dialysis and Transplantation Patients, a liaison agency between potential donors and recipients. They then undergo various evaluations. The donor is paid a reward from government funds and may receive a gift from the recipient as well. Foreigners may not come into this programme, though they may undergo kidney transplantation from a non-Iranian kidney donor (1).

A number of previous studies suggest that kidney allograft from a male donor represents higher survival and lower rejection episodes compared with kidneys donated by females (10,11). However, studies from different parts of the world document that women constitute the majority of living kidney donors despite the fact that men are more likely to receive a kidney allograft. This imbalance is more prominent in developing countries (4), though developed countries such as Norway (2) Canada (6), USA (7,8) and Switzerland (9) also have documented female predominance in living kidney donation.

The reason for these discrepancies is not fully explained. It is possible that such disparity among living kidney donors may reflect coercion, a higher proportion of donations from wives to husbands (compared to from husbands to wives), and a higher priority given to the health of the man for his income-earning role in the family (2,4,6). Simmons et al reported that a significant number of potential donors experienced direct or indirect pressure to donate, although this was not communicated to the medical staff (12).

The sex distribution in our kidney transplant recipient population is comparable with other parts of the world and may reflect the higher proportion of males with end-stage renal disease compared to females (4-8). However, in contrast with reports from almost all over the world, we also noticed a different sex distribution among our living kidney donors.

The reason for such a difference is unclear. The unique LURD renal transplantation programme of Iran may provide an explanation. Because of the incentives paid to living unrelated donors by the government (as well as the gift from the recipient), kidney donation may be a more attractive option for men than for women. As the income earners of families, men are more likely to be potential donors for a compensated kidney donation. Moreover, in Iranian culture the man as the family head will not agree to let his wife to donate her kidney for a reward because it is a social taboo. Finally, surgical scars are not acceptable, especially for young girls. Our data may suggest that in Iran there is no coercion on females to donate a kidney to an unrelated recipient.

Mohammad Hossein Nourbala, Vahid Pourfarziani, Eghlim Nemati, Saeed Taheri, Mahboob Lessan-Pezeshki, Behzad Einollahi. *Nephrology and Urology Research Center, Baqiyatallah University of Medical Sciences, Baqiyatallah Hospital, Mullasadra St, Tehran, IRAN Correspondence:* ***Saeed Taheri,*** *e-mail: saeed.taheri.md@gmail.com*

References

1. Einollahi B. Iranian experience with non-related renal transplantation. *Saudi J Kidney Dis Transplant*. 2004;15(4):421-8.
2. Oien CM, Reisaeter AV, Leivestad T, Pfeffer P, Fauchald P, Os I. Gender imbalance among donors in living kidney transplantation: the Norwegian experience. *Nephrol Dial Transplant*. 2005 Apr; 20(4): 783-9.
3. Griffin A. Kidneys on demand. *BMJ* 2007; 334:502-5.
4. Avula S, Sharma RK, Singh AK, Gupta A, Kumar A, Agrawal S, Bhandari M. Age and gender discrepancies in living related renal transplant donors and recipients. *Transplant Proc*. 1998 Nov; 30(7): 3674.
5. Ghods AJ, Nasrollahzadeh D. Gender disparity in a live donor renal transplantation program: assessing from cultural perspectives. *Transplant Proc*. 2003 Nov; 35(7): 2559-60.
6. Zimmerman D, Donnelly S, Miller J, Stewart D, Albert SE. Gender disparity in living renal transplant donation. *Am J Kidney Dis*. 2000 Sep; 36(3): 534-40.
7. Bloembergen WE, Port FK, Mauger EA, Briggs JP, Leichtman AB. Gender discrepancies in living related renal transplant donors and recipients. *J Am Soc Nephrol*. 1996 Aug; 7(8): 1139-44.
8. Kayler LK, Armenti VT, Dafoe DC, Burke JF, Francos GC, Ratner LE. Patterns of volunteerism, testing, and exclusion among potential living kidney donors. *Health Care Women Int*. 2005 Apr; 26(4): 285-94.
9. Thiel GT, Nolte C, Tsinalis D. Gender imbalance in living kidney donation in Switzerland. *Transplant Proc*. 2005 Mar; 37(2): 592-4.
10. Zeier M, Dohler B, Opelz G, Ritz E. The effect of donor gender on graft survival. *J Am Soc Nephrol*. 2002 Oct; 13(10): 2570-6.
11. Kwon OJ, Kwak JY, Kang CM. The impact of gender and age matching for long-term graft survival in living donor renal transplantation. *Transplant Proc.* 2005 Mar; 37(2): 726-8.
12. Simmons RG. Related donors: costs and gains. *Transplant Proc*. 1977 Mar; 9(1): 143-5.

Unpaid hospital bills

A recent case in which a patient died after a heart attack and kidney failure at Hiranandani Hospital in Powai, Mumbai, has raised several ethical issues. The patient was in the hospital for one month. The bill came to Rs 7.3 lakh. When he died, the hospital refused to hand over the body to the family unless the bill was cleared. There was a shortfall of about Rs 4 lakh.

Did the family opt for Hiranandani hospital? Or did a third party administrator (TPA) direct the family? Was the family told at some stage that the bill would run into several lakh rupees? Was a transfer to a cheaper or municipal hospital offered? Did the hospital act correctly in keeping the body till the bills were cleared? Does the hospital have an ethics committee that can decide on such issues rather than force the issue into court?

In my opinion, TPA panels must not include doctors, nursing homes, or hospitals. The insured person must be free to choose her/ his doctor or hospital so long as each is qualified and registered. Hospitals must have a medical audit system. Repeated investigations and procedures, which are often negative and non-contributory, must be avoided. It is better to give the patient the correct treatment irrespective of the cost. At the time of discharge, the hospital can settle the bill with what the patient can pay. The hospital may write off the balance or file a civil suit for recovery of dues.

P Madhok, *surgeon, Ashwini Nursing Home, 15th Road, Khar, Mumbai 400 052 INDIA e-mail: drpmadhok@yahoo.com*

Correction

The July 2007 issue carried an article by Einollahi Behzad, Nourbala Mohammad-Hossein, Bahaeloo-Horeh Saeid, Assari Shervin, Lessan-Pezeshki Mahboob, and Simforoosh Naser. (Deceased-donor kidney transplantation in Iran: trends, barriers and opportunities *Indian J Med Ethics* 2007; 4: 71-3). The correct affiliation of Dr Simforoosh is: Urology and Nephrology Research Center & Shaheed Labbafinejad Medical Center, Shaheed Beheshti University of Medical Sciences, Tehran, Iran.