

Cadaveric Kidney Transplantation in Iran: Behind the Middle Eastern Countries?

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In the Middle East, transplantation practice was started in 1967 by the first kidney transplantation in Iran.¹ However, it did not reach to a routine practice until the second half of the 80 decade, when appropriate legislations were enacted in most countries in the region. At present, kidney transplantation is active in most countries in the region including Saudi Arabia, Lebanon, Kuwait, Jordan, Syria, Libya, Egypt, Sudan, Qatar, Oman, Turkey, and Iran. Kidney transplantation is also limitedly done in Yemen, Algeria, Tunisia, United Arab Emirates, and Bahrain.²

Cadaveric transplantation, however, is not well established in the region. Egypt has no legislation for organ procurement from deceased donors; hence, out of 3000 kidney transplant procedures performed in this country, there were just 4 kidney transplantations from deceased donors. All the allografts in Algeria and Tunisia, with limited experience though, have come from living donors.² Organ procurement in Iran is carried out from deceased and living donors; however, the practice in this country is mainly known by its governmental regulated and compensated organ acquisition from living unrelated donors.

CADAVERIC KIDNEY TRANSPLANTATION IN IRAN

Deceased kidney donation system in Iran is almost similar to that in most other countries.³ It is organized and managed centrally by the Ministry of Health. Organ retrieval requires either an informed consent in any form (written will, donor card) or family consent. Organ procurement units and brain death identification units identify potential donors and procure organs, ensuring transparency in the process of matching donors and recipients. In university hospitals, each case of brain death is determined and certified by 5 physicians. A neurologist, a neurosurgeon, an internist, and an anesthesiologist, none of whom can be member

of a transplantation team, are authorized by the Minister of Health for this purpose. Moreover, a specialist in forensic medicine is also involved in brain death determination process. The deceased donation program is "purely altruistic" with no money given to the families, except funeral expenses in a few cases.³

Following the first living donor kidney transplantation in Shiraz in 1967, two deceased kidneys were transplanted in Shiraz and Tehran. Fourteen kidneys from deceased donors were also imported from the Eurotransplant Network and were transplanted between 1968 and 1980.⁵ In June 2000, the Organ Transplantation Brain Death Act was legislated by the Parliament followed by the establishment of the Iranian Network for Transplant Organ Procurement in 2002.^{4,5}

By the end of 2006, 21 359 kidney transplants were performed in Iran from living related donors (15.2%), living unrelated donors (79.6%), and deceased donors (5.2%).⁶ Furthermore, the annual number of kidney transplantation was steadily increasing from fewer than 100 in 1986 to 1858 in 200, reaching the whole activity to 26.5 kidney transplants per million population per year. Deceased kidney transplantation has also increased from less than 1% of all kidney transplants in 2000 to 13% in 2006.⁶

All Middle Eastern countries except Egypt passed laws allowing deceased organ transplantation and regulate living donations. Iran, Turkey, Saudi Arabia, Kuwait, Tunisia, Jordan, and Lebanon all have currently active deceased programs and perform liver, heart, pancreas, and lung transplants, as well. Although cadaveric organ donation programs have been active for more than 10 years, deceased donors in the region constitute 15% of the total kidney allograft donors.¹ Some countries such as Turkey, Kuwait, and Saudi Arabia have a higher rate of cadaveric kidney transplantation than that of Iran. Deceased donor kidney transplantation

in Iran comprises about 13% of the whole annual experience,⁶ compared with 25%, 30%, and 25% in Turkey, Saudi Arabia, and Kuwait, respectively.^{2,7,8} On the other hand, the practice in Iran is about 3 times larger than that of Turkey, which makes Iran having a greater number of allografts from deceased donors per million population. Until April 2000, when the parliament passed the law justifying deceased donor organ procurement after brain death,⁵ less than 1% of kidney transplants came from cadavers. Despite the religious permission, especially Imam Khomeini's *fatwa* (Islamic edict), there were only sporadic cadaveric transplantations before passing the law. At present, cadaveric kidney transplant accounts for about 13% of the annual transplantations in Iran (243 cases in 2006).³

BARRIERS TO DECEASED TRANSPLANTATION IN IRAN

Despite its vast potential, deceased organ donation in Iran is and will remain underutilized unless the following major barriers will be removed: (1) inadequate public awareness, (2) wrong attitudes of the medical community, (3) frequently held misconceptions about Islamic precepts, (4) different conceptions of brain death, and (5) a substandard network for cadaveric transplantation. It is also worthy of note that the other Middle Eastern countries are reported to face almost similar problems.⁹

We do not subscribe to the notion that religious and legal laws inherently stymie the propagation of cadaveric transplantation in Iran, especially after a groundbreaking fatwa by the founder of the Islamic Republic of Iran in 1989 that prompted the Iranian parliament to finally lift major legal impediments to cadaveric transplantations in the year 2000.¹ The prospect of kidney transplantation in the Middle

East region is promising. Countries had encouraging movements towards using advantages of different types of kidney transplantation programs. Health authorities as well as professionals should do their best for their nations. Countries can also help each other in this issue. So, the future seems promising.

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