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Kidney transplantation in Afghan refugees residing in Iran: The first report of survival analysis

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Summary

Background:	We report, for the first time, the data on the outcome of kidney transplantation activities in the Afghan population from Iran.
Material/Method:	We extracted the demographic, clinical and the outcome related data of all Afghan kidney transplanted patients, from 1998 to April 2006, from the United Nations High Commissioner for Refugees (UNHCR) and the Dialysis and Transplant Patients Association (DATPA) databases.
Results:	During this period 103 Afghan patients (70.9% male, 29.1% female) underwent renal transplantation in Iran. The mean age at transplantation was 32.7 years. The kidney sources were living unrelated donors (LURD) in 82.5%, living related donors (LRD) in 15.5% and cadaver in 2% patients. The graft and patient survival rates for 1, 3 and 5 years were 97 and 98, 86 and 95, 73 and 95 percent, respectively.
Conclusions:	Both graft and patient survival rates were good and comparable to those reported previously in Iranian patients.
Key words:	kidney transplantation • refugees • survival analysis • outcome

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BACKGROUND

Afghanistan is one of the Middle East countries, with a land area of 652,225 sq km and the population of about 27,756,000. Due to more than 20 years of war, many people left their homes and resided outside their home country. The number of refugees is estimated to be more than 3.5 million; the majority now reside in Pakistan (2 million) and Iran (1.5 million) [1]. The war also destroyed much healthcare infrastructure of Afghanistan. These facts make Afghan people dependent on the other countries' healthcare systems.

One of the most demanding health problems is End Stage Renal Disease (ESRD) [2]. Kidney transplant or dialysis for these patients is expensive and needs trained personnel [3]; therefore Afghan patients with ESRD cannot receive these services in their home country. These factors caused a lack of information on kidney transplant activities in the Afghan population up to now.

Ghods et al. (2005) reported the prevalence of ESRD and the number of kidney transplantation in the Afghan refugee population residing in Iran [4]. In another study, he approached the ethics of kidney transplantation in refugee population in Iran, including Afghan patients [5]. No studies have ever investigated the outcome of kidney transplantation, such as patient or graft survival rates.

With the approach of renal transplantation from Afghani donors to Afghani recipients in Iran, a storey seems very interesting, worthy of publication in 2010. The story reports a case of a brain-dead Afghan refugee whose kidneys were transplanted to 2 of his compatriots in Iran after consent had been obtained from next of kin in Afghanistan thanks to the resolve of an Iranian organ procurement unit and the assistance of the Iranian Embassy in Kabul in exploring the necessary diplomatic avenues [6].

Due to a lack of such information and considering the global growing trend of kidney transplantation in Iran and other countries, despite some shortcomings in the research design and data, we decided to report, for the first time, the outcome analysis of the Afghan kidney transplanted patients in Iran.

MATERIAL AND METHODS

This was a retrospective study using national data from the United Nations High Commissioner

for Refugees (UNHCR) and the Dialysis and Transplant Patients Association (DATPA). DATPA is a government controlled non-profit organization, responsible for the registration of kidney transplantation activities in Iran from 1988 [7]. It also records and stores the follow-up information for the graft and patient status. The regulations say that all transplantation activities in the country must be registered here, but in some border provinces with high population of refugees it might not be complied with thoroughly.

We retrospectively collected data which belonged to national data between January 1998 and 30 April 2006. First, we checked UNHCR for any further kidney transplanted patients. We then extracted the following information from DATPA database: demographic information, the cause of ESRD, the source of the kidney and the outcome of the graft and patient at last follow-up.

Using survival data, we entered the last registered status of the outcomes, and we did not investigate the status of the graft and patient or the time of data collection.

For data analysis, we used SPSS for windows (version 13). We reported the relative frequency or the mean, based on the variable type. We also used Kaplan-Meier method for calculating the patient and graft survival rates.

RESULTS

The first registered kidney transplant in Afghan patients dated back to 1991. From that time to 30 April 2006, 103 patients underwent kidney transplantation in Iran. Figure 1 shows the registered number of kidney transplantation in Afghan patients over time in Iran. It shows that the number of kidney transplant per year gradual increased over time.

The mean age of patients at transplantation was 32.7 (± 12.5) years. The oldest patient was 79 and the youngest patient was 12 at transplantation. Seventy-three patients (70.9%) were male and 30 (29.1%) were female.

The causes of ESRD in patients undergoing transplant were glomerulonephritis (12 cases – 11.6%), hypertension (12 cases – 11.6%), urologic problems (10 cases – 9.6%), polycystic kidney disease (3 cases – 2.9%), diabetes (1 case – 1%), congenital disorders (1 case – 1%) and 4 (3.9%) cases due to other problems. The cause in 42 (40.9%)

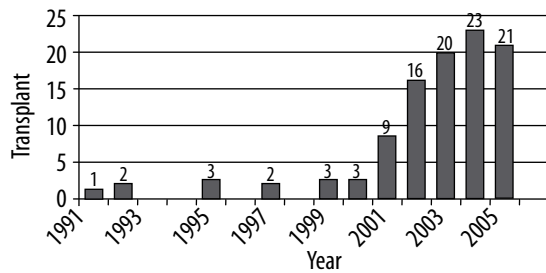


Figure 1. Transplant rate per year for Afghani refugees in Iran.

cases remained unknown and in 18 (17.5%) patients it was not available. Eighty-five patients (82.5%) received the graft from living unrelated related donors (LURD), 16 (15.5%) from living related donors (LRD) and 2 (2%) from cadavers.

The graft survival rate for 1, 3 and 5 years were 97, 86 and 73 percent, respectively (Figure 2). The patient survival rate for 1, 3, and 5 years were 98, 95 and 95 percent, respectively (Figure 3).

DISCUSSION

We found that both patient and graft survival rates for Afghan patients who underwent kidney transplantation in Iran is good. Despite the fact that the shortcoming of our study prevents us from having a direct comparison between native Iranian and Afghan refugee patients, the patient and graft survival rate of Afghan transplantation in Iran is not as good as the survival rates in Iranian people [8]. Several factors may explain the poorer outcomes of Afghans. These include recipient variables such as socioeconomic status, transplantation data such as skill of surgeon, or donor and recipients factors such as HLA matching, and post-transplantation data such as care and prescribed medications, and compliance [9–15].

We also observed an increasing trend in the rate of kidney transplantation of the Afghan refugee patients over time. This increase is parallel to the general trend of increasing number of total kidney transplantations in Iran [8]. In addition, the transplantation rate is 14 per million Afghan refugees in Iran per year, which is comparable to the 24 transplants per million per year for Iranian patients [8].

Such good achievements could be considered as the results of the implementation of Iranian model of kidney transplantation. This model allows patients from the same nationality to act as

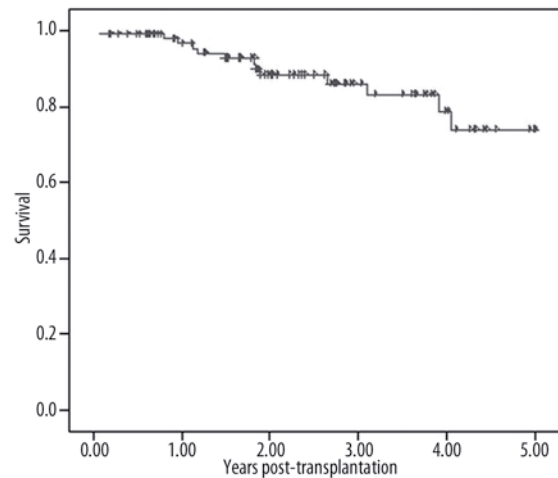


Figure 2. Five-year graft survival rate for afghan refugees undergoing kidney transplantation.

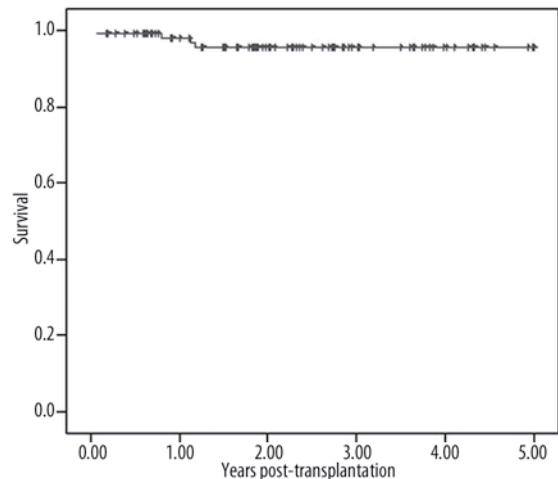


Figure 3. Five-year patient survival rate for afghan refugees undergoing kidney transplantation.

kidney donors and receivers [7]. The regulation also provides some financial incentives for the donors [16]. The model also prevents the people of the low socio-economic class, including refugees, from becoming organ donors in the kidney transplantation black market [5]. The financial incentives also allow low-income people to undergo kidney transplantation. Iran not only allows refugees to receive organs, but also provides some extra services for them, such as paying for nearly all the transplantation procedure and the follow-up costs and immunosuppression, very good insurance coverage and permission for permanent residency and access to employment in Iran. In addition, Afghan patients received organs from cadavers, which demonstrates that

there are good opportunities for refugees in Iran to receive kidney transplantation.

The value of such achievement becomes more prominent when considering some difficulties the Afghan patients, as refugees, may face [17]. These problems include: 1) the refugees are from a low socio-economic class [18], which may interfere with the process of treatment and follow-up; 2) low literacy rate in refugees [19]; and 3) living in remote areas and difficulties in access to health care facilities [20]. All these problems could have negative effects on the outcome of kidney transplantation with sophisticated, prolonged and critical follow-up.

While the outcome of the kidney-transplanted patients showed a good promise in providing the kidney transplantation to this group of patients, the future is uncertain. The main problem arises when the refugees return to their home in Afghanistan. Many years of war has made the healthcare system of the country so incapable that even the primary needs of the people are not met. This problem is even worse in the case of kidney transplantation support. It is a costly disease, which imposes a great burden on the vulnerable health care system [21]. Therefore, providing service to current and future patients is a great challenge for the new government of Afghanistan.

Transplantation policy makers are interested in monitoring the outcome of their efforts by measuring different outcomes such as survival [9–11,22,23] or the pattern of health care use and costs [12–15,24–27], health-related quality of life [28,29] and other morbidity measures [30–36]. These outcome evaluations are used for health systems planning [37].

There are no precise regional or international data available on kidney transplantation in refugees. Among the Middle East Society for Organ Transplantation countries, only Iran, Saudi Arabia, Pakistan, and Turkey have thus far provided data on their kidney transplantation regulations and models. Other countries in the region should follow suit and design models tailored to local needs and conditions. Establishment of an international committee on transplantation in refugees would be of enormous benefit in the long term [38].

Iran has adopted a policy of living unrelated donor renal transplantation in which foreigners can receive transplants from donors of the same nationality – either living related donors or living

unrelated donors. In this system all patients receive a graft from a donor of the same nationality. Afghan refugees cannot donate kidneys to Iranians, an ethical approach to prevent black marketeering. By other means, Iran not only allows refugees to receive organs, but also provides extra services for them, including cost-free follow-up with immunosuppression [4–6,38].

One possible limitation of this study is related to the data source. Despite the fact that the kidney transplantation activities must be registered in DATPA, there also may be some unregistered cases in the database. The same could be true, with a higher probability, regarding the follow-up data. Such problems arise from the migratory nature of the Afghan life and poor access to health care facilities. Such flaws may have affected our results. However, it seems these were not a major problem in our study because the majority of kidney transplantation centers are located in Tehran, the home of DATPA, and both the transplantation centers and the health care providers for transplantations follow-up in these centers are well aware of the data gathering policy.

The main limitation of our study lies in the absence of a control group. We compared our results with previously published results from our country, but having a control group would undoubtedly add to the strength of our results. It should be remembered that some unregistered transplantations might exist, thus our database may be incomplete. However, we could not estimate the rate of non-registered transplantations.

CONCLUSIONS

Despite some shortcomings, we found that the patient and graft survival rate for Afghan refugees who underwent kidney transplantation in Iran is good and is comparable to the previously reported results from native Iranian patients. Supporting these patients in their homeland, however, remains a great challenge.

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