# Organ Donation in the Middle East Countries

Faissal A. M. Shaheen, MD

More than 29 countries have membership of the Middle East Society for Organ Transplantation (MESOT), and collectively these countries have a population >600 million. These include all Arab countries, Iran, Turkey, Pakistan, and countries of central Asia. There are common features of organ transplantation in the Middle East countries that include inadequate preventive medicine, uneven health infrastructure, poor awareness in the medical community and public at large of the importance of the organ donation and transplantation, and poor government support of organ transplantation. In addition, there is lack of team spirit among transplant physicians, lack of planning for organ procurement and transplant centers, and lack of effective health insurance. Patients seek commercial transplantation most of the time. The number of patients on waiting lists for organ transplantation increases with time, and the gap is growing between supply and demand of organs in the MESOT countries. Living organ donation is the most widely practiced type of donation in the Middle East and includes kidney and partial liver. Cadaveric organ donation has great potential in the Middle East. Nevertheless, this source is still not used properly because of the continued debate in the medical community about the concept of brain death and inadequate awareness of the public of the importance of organ donation and transplantation in many countries in this region. There are 3 dominant and distinctive models for practice: the Saudi, Iranian, and Pakistani models. The Saudi model includes a national organ procurement center as a governmental agency to supervise organ donation and transplantation. The Iranian model consists of renal graft donation from living people. The Pakistani model is a funding model for management of end-stage organ failure in developing countries. Organ donation and transplantation are hampered with obstacles in MESOT countries. Solutions need continuous work on many fronts. Local experiences can be implemented into new improved models that can help overcome current obstacles. (*Ethn Dis*. 2009;19[Suppl 1]:S1-16–S1-17)

**Key Words:** Donation, Organ Transplantation, Saudi Arabia, Iran, Pakistan

From the Saudi Center for Organ Transplantation, Riyadh, Saudi Arabia (FAMS).

Address correspondence and reprint requests to: Faissal A. M. Shaheen; The Saudi Center for Organ Transplantation; PO Box 27049; Riyadh, 11417 Saudi Arabia; famshaheen@yahoo.com

## Introduction

The Middle East Society for Organ Transplantation (MESOT) was established in Turkey in 1987 as a nonprofit international scientific society to promote and encourage education, research, and cooperation in the field of organ transplantation between the medical centers, societies, and public and private organizations in Middle East countries. Furthermore, the society would create a scientific forum for discussion of all problems related to transplantation. The MESOT has organized meetings, symposia, and congresses to implement its goals. There have been 9 major congresses so far held in different countries in the Middle East. The last one was in Kuwait 2006. More than 29 countries have membership of the MESOT, and collectively these countries have a population >600 million. These include all Arab countries, Iran, Turkey, Pakistan, and countries of central Asia.

## Organ Donation and Transplantation in the MESOT Countries

Transplantation is an expensive modality of treatment. There seems to be a correlation between the activities of organ transplantation and the gross national income in the MESOT countries in comparison to the world.

There are common features of organ transplantation in the Middle East countries that include inadequate preventive medicine, uneven health infrastructure, poor awareness in the medical community and public at large of the importance of the organ donation and transplantation, and poor government support of organ transplantation. In addition, there is lack of team spirit among transplant physicians, lack of planning for organ procurement and transplant centers, and lack of effective health insurance. Patients seek commercial transplantation most of the time.

## Volume of End-stage Organ Failure in Middle East Countries

The number of patients on waiting lists for organ transplantation increases with time, and the gap is growing between supply and demand of organs in MESOT countries. There is an estimated average of 200 patients per million population (pmp) in need for renal transplantation, and the death rate of people on dialysis is 10%–15% per year. Furthermore, 15–20 patients pmp are in need of hearts, and 40–50 pmp are in need of livers; most patients in MESOT countries die while waiting for these organs. Corneas are also in great demand (100 pmp). However, insufficient organs are available to match the demands.

## Sources of Organ Donation in the Middle East

Living organ donation is the most widely practiced type of donation in the Middle East and includes kidney and partial liver. Donors are predominantly genetically related to recipients; however, genetically unrelated and commercial living organ donation exist. Cadaveric organ donation has great potential in the Middle East because of the rate of accidents. Nevertheless, this source is still not used properly because of the continued debate in the medical community about the concept of brain death and inadequate awareness of the public of

the importance of organ donation and transplantation in many countries in this region.

There are 3 major factors to organize deceased organ donation that must be fulfilled: religious and social acceptance, legislation for organ donation and transplantation, and government support. There is religious acceptance for organ donation in the Middle East but not for equating brain death to legal death in some countries. Accordingly, legislation does not exist or has not been fully implemented in Egypt, Morocco, Syria, Sudan, and Libya. There are weak health systems and variable infrastructures in most MESOT countries. Organ transplantation and treatment of end-stage organ failure is not a priority in most MESOT countries because of the cost and technology required. Furthermore, resources are inappropriately allocated, and government support is modest at best.

There are very few organ procurement centers in the MESOT countries to supervise the activities of organ donation and transplantation at a national level. MESOT countries lack an active network of organ sharing. In addition, deceased organ donation is still not implemented in 25% of the MESOT countries despite supportive legislation.

## MODELS OF ORGAN DONATION AND TRANSPLANTATION IN THE MESOT

There are three dominant and distinctive models for practice: the Saudi, Iranian, and Pakistani models. The Saudi model includes a national organ procurement center as a governmental agency to supervise organ donation and transplantation (encourages all types of donation, statistics, allocation of organs, ethics). In addition, it coordinates the process of organ donation between the donating hospitals and transplant centers (coordinators, consents, harvesting teams). Furthermore, it applies strategies to increase the awareness of the medical community and public at large to the importance of organ donation and transplantation (training, media, and publications).[1] This organization has considerably improved organ donation and transplantation in Saudi Arabia.

The salient achievements of the Saudi Center for Organ Transplantation (SCOT) in the last 18 years were the consideration of organ donation as a routine practice in almost all hospitals equipped with intensive care units and the considerable increase in the transplant centers and number of organ transplantations in Saudi Arabia.

The Iranian model that started 10 years ago is renal graft donation from living, genetically unrelated people. This program had a high volume for donation (17 pmp/year). The government provided only the expenses for medical services, while the incentive that was usually negotiable was covered by the recipients.[2] This model may not be applicable in countries that have multi national population and is still ethically controversial. The donors were not emotionally or financially satisfied and the transplant community in Iran believed the incentive to donors should have been covered by the government not the recipients.[3]

In Pakistan, the government pays 40%–50% for the renal services and the community pays the rest. Accordingly, there is larger pool of patients to serve and better quality of services. [4]

## POSSIBLE SOLUTIONS TO OBSTACLES TO ORGAN DONATION AND TRANSPLANTATION IN MESOT COUNTRIES

Since the cost of treating end-stage renal disease is the major barrier, MESOT countries may have to adopt a funding system similar to the Pakistani model or medical insurance. Furthermore, organization is needed to improve organ donation and transplantation in any country; efforts should be directed to establish national organ procurement centers similar to the Saudi model. There should be encouragement of a network of organ sharing among the MESOT countries and exchange of the experience of the national programs (coordination of organ donation, scientific expertise, multicenter studies, and registry of organ failure patients). Finally, there should be a consideration for a modified Iranian model as a new source of organ donation (living, unrelated donation).

We conclude that organ donation and transplantation are hampered with obstacles in MESOT countries. Solutions need continuous work on many fronts. Local experiences can be implemented into new, improved models that can help overcome current obstacles.

### REFERENCES

1. Shaheen FA, Souqiyyeh MZ, Attar MB, al-Swailem AR. The Saudi Center for Organ Transplantation: an ideal model for Arabic countries to improve treatment of end-stage organ failure. *Transplant Proc*. 1996;28(1):247–249.
2. Sever MS, Kazanciolu R, Yildiz A, Türkmen A, Ecder T, Kayacan SM, Celik V, Sahin S, Aydin AE, Eldegez U, Ark E. Outcome of living unrelated (commercial) renal transplantation. *Kidney Int*. 2001;60(4):1477–1483.
3. Zargooshi J. Quality of life of Iranian kidney "donors." *J Urol*. 2001;166(5):1790–1799.
4. Rizvi SA, Naqvi SA. Our vision on organ donation in developing countries. *Transplant Proc*. 2000;32(1):144–145.