

DIALYSIS/TRANSPLANTATION ΑΙΜΟΚΑΘΑΡΣΗ/ΜΕΤΑΜΟΣΧΕΥΣΗ

History of renal transplantation in the Arab World

The history of renal transplantation from 18 Arab countries will be highlighted. In Egypt, Mansoura led the transplantation program by performing the first two transplants in 1976. The Egyptian experience exceeds 19,000 transplants in 39 centres. Cairo University performed the first unrelated donor transplant in 1980 and the first deceased-donor transplant in 1992. In Algeria, the first two transplants were performed in 1986 and 1987. In total 220 transplants have been performed using live donors and 4 using deceased donors. In Sudan, the first case was in 1974, while overall experience exceeds 1,600 cases. In Iraq, the first case was in 1973 with overall experience of 5,000 cases. In Morocco, transplantation started in 1985. In 2015, they performed 56 transplants. In Saudi Arabia, the transplantation program was initiated in 1979. In total 6,939 transplants have been performed using live donors and 2038 using deceased donors. In Yemen, the first transplant was in 1998 with a total number of transplants exceeding 400 cases. In Syria, the first transplant was in 1979 while in Tunisia, transplants using live donors and deceased donors were performed in 1986 and 1988 respectively. In Jordan, transplantation started in 1972 using deceased donors and the total number of transplants is currently 4,500. In the United Arab Emirates, 160 transplants have been performed using live donors and 2 using deceased donors. In Libya, the transplant program started in 1989 and resumed activity in 2004. In Lebanon, the first transplant using a deceased donor was performed in 1990 while the first transplant using a live donor was in 1992. In Oman, 60 transplants had been performed up to 1998. In Kuwait, the program started in 1979. In total, 2,500 transplants have been performed. In Palestine, the first transplant was performed in 2003 in Nablus, while total experience covers 300 cases. In Qatar, the first transplant using a live donor was performed in 1986 and the first transplant using a deceased donor in 1996. In Bahrain, the first transplant using a live donor was performed in 1995 and a deceased donor in 2001. In total 100 transplants using live donors had been performed and 25 using deceased donors up to the end of 2017. I hope that in the near future, an Arab transplant committee will be established to supervise organ distribution, set up a regional database, raise funds for less privileged centres and support research.

1. INTRODUCTION

Arab physicians became interested in transplantation since the first transplant in 1954 in the USA. We will try to highlight the history of renal transplantation from 18 Arab countries.

1.1. Egypt

The first transplant was carried out in 1964 in Alexandria for a Greek woman who received a kidney from

an Egyptian donor; the surgery was performed by an American surgeon. Mansoura University led the transplant program as Ghoneim performed the first two transplants, in March and August 1976. Arrangements took place at Kasr-El-Aini where Barsoum under the supervision of Hassaballah prepared one of his private patients who received a transplant in October 1976 with an uneventful post-operative period. Cairo University carried out the first unrelated transplant in 1983 after a long ethical discussion. The Mansoura team insisted on transplants using only living related donors.¹ Then, the Egyptian Society of

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Ιστορία της μεταμόσχευσης
νεφρού στον αραβικό κόσμο

Περίληψη στο τέλος του άρθρου

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Nephrology held an extraordinary General Assembly that banned transplants using unrelated donors. In 1992, the Egyptian Attorney General approved the harvesting of kidneys from two executed criminals after obtaining their consent prior to their execution. Vigorous public debate ended in banning the use of transplants from executed prisoners. Moreover, other universities, military, general and private hospitals (39 centres) entered the field with an overall experience of 19,079 kidney transplants up to the end of 2018 and 1338 transplants during the last year. The 10-year patient and graft survival rates of the Mansoura experience were 77.8% and 65.5% respectively.² The Egyptian society of nephrology and transplantation set the trend for many Arab and Middle East societies. One of the authors, Prof. Bakr was member of the Istanbul declaration steering committee and then of its summit³ and a member of the KDIGO living donor transplantation working group.⁴

1.2. Algeria

The Algerian Society of Nephrology was established at Beni-Messous Hospital in 1979. The first and second kidney transplants were performed in 1986 and 1987. Up to now, 220 transplants using live donors have been performed in 13 centres. Four transplants using deceased donors were carried out but they all failed. The Algerian kidney foundation was established on 13th April 2015.

1.3. Sudan

The first transplant was performed in 1974. Up to 1989, 30 transplants had been performed. From 2001 to date, 1084 transplants using live related donors were carried out at Ahmed Gasim Centre with ten-year patient and graft survival rates of 67% and 54% respectively. Overall experience exceeds 1600 cases and the acute rejection rate is 15%.

1.4. Iraq

The first renal transplant was performed in June 1973 at Al Rasheed military hospital, by surgeon Alkayal and nephrologist Al-shamaa. The Iraq-Iranian war (1980) and the ensuing sanctions had a negative impact on health services. The first transplant in MOH was carried out in the Medical city teaching hospital in March 1985 by surgeon Rifaat and nephrologist Zaki. Then the government concluded a contract with an Irish team in Ibn Al Bitar hospital, which performed one transplant a week up to 1990. Many hospitals and centres were engaged in transplantation at

different times, Karrama (1980), Chazala (40–50 transplant/year) surgical specialties (1991, 261 LDT), Neinava and Erbil (2001), Sulaimaniya (2008), Duhok and Najaf (2009), Nephrology-renal transplant (2009), Basra (2015) and lastly Karbala (2018). As regards private contribution, Al Khayal hospital started its program in 1976 and another five hospitals provided transplantation in the 1980s–1990s. Currently there are seven programs with the central committee in MOH for accepting donors; the overall experience is 5000 transplants with 5-year patient and graft survival rates of 91% and 87%, respectively.

1.5. Morocco

Transplantation experience in Morocco went through four stages. The first stage (1985 to 1990) with the first renal transplantation was in Casablanca in 1985. The patient and graft survival exceeded 27 years. The second stage (1990–1999) included 45 transplants and the 1st private case was in 1997. The third stage (2000–2009) included transplantation at Ibn Rochd University hospital of Casablanca, starting with transplantation in Sheik Zaid hospital in Rabat, and a national registry with 5-year graft and patient survival rates were 95%. The fourth stage (2010–2016) showed the first transplant of a brain from a deceased donor in Casablanca in 2010. The Fes and Marrakesh programs were also initiated. In 2015, 56 transplantations were performed and the first paediatric transplant was carried out one year later.⁷

1.6. Saudi Arabia

Transplantation in Saudi Arabia went through 5 phases. Phase 1 (1970–1979) included a transplant abroad. In phase 2 (1979–1981), a transplant program using live donors was initiated in Riyadh military hospital by a visiting team from the UK. During phase 3 (1981–1984), Euro transplant shipped extended criteria donors (ECD) to KSA. In Riyadh military hospital 64 kidney transplants were performed. The law for transplants using deceased donors was approved in 1982. In phase 4 (1984–1985), the local retrieved DD program was started. During phase 5 (1985 to now), the National Kidney Foundation was established then was transformed to the Saudi Centre of Organ Transplantation in 1993.⁸ Currently, 6939 transplants using live donors and 2038 using deceased donors have been performed including de-sensitisation, kidney paired donation and ABO incompatible transplantation.⁹ KSA was the first to adopt the brain death principle and deceased donor transplants.

1.7. Yemen

The first transplant was performed in 1998. Transplantation faced numerous problems (non-equipped labs, immunosuppression etc.). The regular program of Al Thawra Modern General Hospital started in 2005 with increased growth and an overall experience of 440 cases. Transplants using deceased donors were approved but the final agreement from the parliament's Supreme Health Committee was delayed because of the war.

1.8. Syria

The first transplant was performed in 1979 by Dr M. Housami; following that, transplants were performed at various academic and non-academic centres. In the eighties, an agreement was made with the Soviet Union to treat one thousand patients for free, including transplantation. A law in 2003 recognised the concept of brain death and permitted transplant using deceased donors. In 2009, the Syrian national centre for organ transplantation was established aiming to initiate a registry (DD program and logistic setup). The war had a disastrous impact on all aspects of life (the health sector in general, and the management of CKD in particular). Transplant centres in Aleppo, Homs were closed while the Dam centre continued its activities. Massive internal displacement, including labour force migration, strained healthcare resources in major population centres. Many patients are not sufficiently dialysed due to the ability to maintain or buy new equipment. The MOH issued an order in 2016 to form a national council for organ and tissue transplantation.³

1.9. Tunisia

The first transplants using live donors and deceased donors were performed in 1986 and 1988 respectively at Charles Nicole hospital. Then transplantation was also established at the Military hospital (1992), Sfax (1994), Monastir (1995) and Sousse (2007). The law on transplantation and decentralisation was released in 1991, regulating organ procurement and transplantation, while the national centre for the promotion of organ transplantation was established in 1995.¹⁰

1.10. Jordan

Transplantation started in 1972 with a transplant using a deceased donor. Transplantation rates were 16 cases/million Jordanian citizens. In 2010, a kidney transplantation centre was established at Prince Hamza hospital. In total

200 transplants per year were performed, and around 40 using deceased donors.

1.11. United Arab Emirates

A Federal Law regulating transplantation was issued in 1993. A ministerial decision on the implementation regulation of the law was issued in 2010. The transplantation program revived in Shaikh Khalifa medical city, Abu Dhabi in 2008. The service is provided to UAE citizens free of charge. Up to now, 160 transplants using live related donors and 2 using deceased donors have been performed with a 3-year graft survival rate of 96%.

1.12. Libya

The transplant program was launched in 1989 and revived in 2004. Only transplants using live related donors were available. Basiliximab was used as induction therapy. Steroids, CSA and MPA were used as maintenance therapy.¹¹

1.13. Lebanon

The first transplant using a deceased donor was performed in 1990 while the first transplant using a live donor in 1992. Lebanon launched its national organ donation in 1999; this became functional in 2009, leading to a (505%) drop in LURD and a (32–86%) increase in LRD as LD regulation resulted in the stop of commercial donation in 2013.

1.14. Oman

The country initially offered care services for patients transplanted abroad. MOH signed an agreement with Oxford University for transplantations to Omani patients using kidneys from their LRD. Sixty transplants were performed between 1983 and 1988. Some of these patients are alive with functioning grafts up to now. Oman's full transplant program was established in 1988. Before the end of 1988, one LD and 2 DD transplants had been carried out. The MOH issued a decree in 1993 forbidding commercial transactions in transplantation. In 2005, a transplant coordination unit and kidney donor clinic were established to follow up donors.¹²

1.15. Kuwait

The transplantation program was started in 1979 by Abouna at the Hamed Al Essa organ transplant centre. The transplant program went through 3 phases. Phase 1

(1974–1990) included 43 transplants using live donors and 13 using deceased donors. During phase 2 (1991–1993) with the Iraq invasion, centres were closed and the staff left the country. The third phase (1994 to now) showed an increased rate of transplants per year (80–100). Up to the end of 2016, 2500 cases had received transplantation. The desensitisation protocol, including 65 cases up to now, was initiated. The overall outcome was excellent with acute rejection rates of 8–12%. In 2018, new centres were constructed.

1.16. Palestine

The first transplant was performed in 19/12/2003 in Nablus at Al-Arabi Specialised Medical Centre in very difficult circumstances. The second transplant took place in 2010 at the Palestine medical complex of the Kuwaiti hospital. In total, 300 transplants have been performed so far (289 in Ramallah and 11 in Nablus). Donors should be first- or second-degree relatives. No mortalities have been reported up to now. Average hospital stay is around 8 days. Post-transplant success rates are more than 98%.

1.17. Qatar

The first LD transplant was performed in 1986 at Hamad Generalised Hospital and the first DD transplant in 1996. The Doha Accord was issued to avoid commercial transplants, establish a transplant centre of excellence and ensure globally accepted high-quality service.¹³ The Qatar Centre for organ transplants (QCOT) was established as a government organisation in October 2011 while the Qatar Organ Donation Centre (HIBA), was launched as a charitable organisation, in August 2012. A new law was issued in 2015.

1.18. Bahrain

The country entered the transplantation field in 1995, performing 57 transplants between 1995 and 1999. Then, transplantation rates decreased and people were forced to seek transplants from Pakistan, Iraq, Iran and Philippines. Transplantation using deceased donors started in 2001. By December 2017, 25 transplants using deceased donors and 100 using live donors had been performed. With the availability of suitable donor and public educational programs, the results became encouraging.

In the end, I hope that in the near future, an Arab transplant committee should be established to supervise organ distribution, set up a regional database, raise funds for less privileged centres and support research.

CONFLICT OF INTEREST

All authors and colleagues from 18 Arab countries declare no conflict of interest.

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ΠΕΡΙΛΗΨΗ

Ιστορία της μεταμόσχευσης νεφρού στον αραβικό κόσμο

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Παρουσιάζεται η ιστορία της μεταμόσχευσης νεφρού σε 18 αραβικές χώρες. Στην Αίγυπτο, πρωτοπόρος του προγράμματος μεταμόσχευσης ήταν ο Mansoura, ο οποίος πραγματοποίησε τις δύο πρώτες μεταμοσχεύσεις το 1976. Η εμπειρία της Αιγύπτου υπερβαίνει τις 19.000 μεταμοσχεύσεις, σε 39 κέντρα. Το Πανεπιστήμιο του Καΐρου πραγματοποίησε την πρώτη μεταμόσχευση από μη συγγενή δότη το 1980 και την πρώτη μεταμόσχευση από αποθανόντα δότη το 1992. Στην Αλγερία, οι δύο πρώτες μεταμοσχεύσεις πραγματοποιήθηκαν το 1986 και το 1987. Συνολικά, έχουν πραγματοποιηθεί 220 μεταμοσχεύσεις από ζωντανούς δότες και 4 από αποθανόντες δότες. Στο Σουδάν, το πρώτο

περιστατικό ήταν το 1974, ενώ η συνολική εμπειρία υπερβαίνει τα 1.600 περιστατικά. Στο Ιράκ, το πρώτο περιστατικό ήταν το 1973, με τη συνολική εμπειρία να υπερβαίνει τα 5.000 περιστατικά. Στο Μαρόκο, η μεταμόσχευση ξεκίνησε το 1985. Το 2015, πραγματοποιήθηκαν εκεί 56 μεταμοσχεύσεις. Στη Σαουδική Αραβία, το πρόγραμμα μεταμοσχεύσεων ξεκίνησε το 1979. Συνολικά, έχουν πραγματοποιηθεί 6939 μεταμοσχεύσεις από ζωντανούς δότες και 2038 από αποθανόντες δότες. Στην Υεμένη, η πρώτη μεταμόσχευση πραγματοποιήθηκε το 1998, με το συνολικό αριθμό μεταμοσχεύσεων να υπερβαίνει τα 400 περιστατικά. Στη Συρία, η πρώτη μεταμόσχευση πραγματοποιήθηκε το 1979, ενώ στην Τυνησία μεταμοσχεύσεις με χρήση ζωντανού δότη και αποθανόντα δότη πραγματοποιήθηκαν για πρώτη φορά το 1986 και το 1988 αντίστοιχα. Στην Ιορδανία, η μεταμόσχευση ξεκίνησε το 1972 με χρήση αποθανόντα δότη και ο τρέχων συνολικός αριθμός μεταμοσχεύσεων ανέρχεται σε 4.500. Στα Ηνωμένα Αραβικά Εμιράτα, έχουν πραγματοποιηθεί 160 μεταμοσχεύσεις από ζωντανούς δότες και 2 από αποθανόντες δότες. Στη Λιβύη, το πρόγραμμα μεταμοσχεύσεων ξεκίνησε το 1989 και συνέχισε τη λειτουργία του το 2004. Στον Λίβανο, η πρώτη μεταμόσχευση με χρήση αποθανόντα δότη πραγματοποιήθηκε το 1990, ενώ η πρώτη μεταμόσχευση με χρήση ζωντανού δότη το 1992. Στο Ομάν, μέχρι το 1998 είχαν πραγματοποιηθεί 60 μεταμοσχεύσεις. Στο Κουβέιτ, το πρόγραμμα άρχισε το 1979. Συνολικά, έχουν πραγματοποιηθεί 2.500 μεταμοσχεύσεις. Στην Παλαιστίνη, η πρώτη μεταμόσχευση πραγματοποιήθηκε το 2003 στην Nablus, ενώ η συνολική εμπειρία καλύπτει τα 300 περιστατικά. Στο Κατάρ, η πρώτη μεταμόσχευση με χρήση ζωντανού δότη πραγματοποιήθηκε το 1986 και με χρήση αποθανόντα δότη το 1996. Στο Μπαχρέιν, η πρώτη μεταμόσχευση με χρήση ζωντανού δότη πραγματοποιήθηκε το 1995 και με χρήση αποθανόντα δότη το 2001. Συνολικά, μέχρι το τέλος του 2017, είχαν πραγματοποιηθεί 100 μεταμοσχεύσεις με χρήση ζωντανού δότη και 25 με χρήση αποθανόντα δότη. Ελπίζω ότι στο εγγύς μέλλον θα δημιουργηθεί μία αραβική επιτροπή μεταμοσχεύσεων που θα επιβλέπει τη διανομή οργάνων, θα δημιουργήσει μία τοπική βάση δεδομένων, θα συγκεντρώνει κεφάλαια για λιγότερο προνομιούχα κέντρα και θα υποστηρίζει την έρευνα.

Λέξεις ευρητηρίου: Μεταμοσχεύσεις από αποβιώσαντα δότη, Μεταμοσχεύσεις από ζώντα δότη, Μεταμοσχεύσεις αραβική Χερσόνησο, Μεταμοσχεύσεις βόρεια Αφρική

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