Renal Transplantation

Renal transplantation in Greece

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Introduction

The substitution of human tissues by similar material obtained from other humans or animals has been one of the most ancient dreams but has only recently become a reality. The actual clinical application of renal transplantation started at the beginning of the 1960s with the discovery of azathioprine which, in combination with steroids, constituted the basic immunosuppressive regimen for almost 20 years [1]. We arrive now at the start of the 21st century when kidney transplantation has become the treatment of choice in the management of most cases of end-stage renal disease. The main limitation to the implementation of this procedure is the adequate supply of grafts.

In Greece the first attempts in the field of transplantation were undertaken early in the course of this worldwide activity. In 1968, the first cadaver kidney transplant was performed at the AHEPA Hospital in Thessalonika. The recipient survived with a functioning graft for 10 years and finally died in a traffic accident. In Athens, the first cadaveric renal transplant was performed at the Laiko Hospital. Renal transplant centres functioning in Greece since then are at the Laiko, Areteion, Tzanion, and the Evangelismos hospitals in Athens, the AHEPA and the Hippocration in Thessalonika and the University Hospital of Rio in Patras.

According to information obtained from an earlier survey and from the records of the Registry of the Hellenic Dialysis and Transplantation Service, the number of renal transplants performed between 1968 and 2000 is 2411, of which 1483 (61.5%) originated from living donors, usually relatives of the recipients, and 903 (38.5%) from cadaveric donors [2]. At the end of 2000, 1444 patients were recorded as living with a functioning transplant. Greece has a population of 10.5 million and the incidence of end-stage renal disease in the year 2000 was 136 cases per million, with 6985 patients being on dialysis while 1180 (16.9%) are waiting for transplantation [3].

Figure 1 shows the evolution of renal transplantation in Greece as a whole, as well as that of cadaveric and living donor transplants for the period from 1985 to 2000. This evolution is disappointing and the lowest numbers are for the year 2000, when only 32 cadaveric transplants were performed. In comparison with other European countries, Greece is at the lower end of the range observed between various countries. In Greece there were 4.5 cadaveric donors per million in 1999, in Spain the ratio was 33.6 while the ratio for the European countries is three times that of Greece [4]. This low ratio occurs despite the fact that during 1997, Greece was the first country within the European Union with a number of deaths in traffic accidents 3.4 times higher than the mean European figure. Even worse, between 1980 and 1997 the number of deaths in traffic accidents increased in Greece, while it decreased by 30% in the European Union. What are the possible reasons accounting for such a low level of transplantation activity in patients with end-stage renal disease in Greece?

The first transplants were performed early on in Thessalonika and Athens and there is no shortage of trained surgeons, nephrologists or other disciplines for carrying out this procedure. An increased scientific activity is notable over the ensuing years under the auspices of the Hellenic Society of Nephrology and the Hellenic Society of Transplantation which are disproportionately large in comparison to the number of transplants actually performed.

There was no delay in setting up the legislation concerning transplantation. With law 821 of 13–14 October 1978 ‘Removal and transplantation of biological materials of human origin’ the foundation was laid for, among other things: (i) the criteria for recognition of brain death; (ii) transplantation from live immunologically compatible donors; and (iii) The expressed consent of a potential donor and the need for the permission of the immediate family for cadaveric donation.

On 5 August 1983, law 1383 was issued, which concerned ‘Removal and transplantation of human tissues and organs’. There were no significant changes.
from the previous law and the main consequence was
the ministerial decision A2y, 1468 of 2 March 1985
concerning ‘The creation, at the General Hospital of
Athens, of a coordination and control service pro-
gramme for end-stage renal failure and transplanta-
tion’. This was the first effort to create a service that
would apply and promote the policy concerning
transplantation.

The third law 2737 was issued on 27 August 1999
and was about ‘Transplantation of human tissues and
organs and other regulations’. With this law, either
agreement or refusal of the potential cadaveric donor
or the permission of the family is required for the
removal of the organs. Legislation was also formulated
concerning fining and disciplinary actions against
medical staff of intensive care units for not terminating
the mechanical life support systems of patients who are
brain dead and for whom permission was not given for
organ use. Transplantation from a living donor was
only allowed among relatives. In addition the applica-
tion and promotion of transplantation was transferred
to a newly created legally recognized independent
organization ‘The National Transplant Organisation’.
There was an immediate outcry against certain points
of the new legislation and demands for its withdrawal
came from those involved in transplantation including
scientists, social organizations, and the church. This
intense negative reaction, combined with the adminis-
trative weaknesses of this new body, led to the almost
vertical decline in the already relatively small number
of transplants being performed and, unfortunately, the
battle still rages.

Relatively recently, the ministerial decision 973 of 25
October 1996, the ‘Central system for the registration
and selection of patients and the allocation of kidneys
for transplantation’, came into force. As a result of this
decision, the system for registration and selection of
patients, which until then was transplant unit-oriented,
became patient-oriented, as is indeed internationally
the case [5,6]. Among other things the main allocation
criteria are time on the waiting list and HLA matching.
Thus, according to the data of the Registry of the
Hellenic Dialysis and Transplantation Service, the
patients who at the end of year 2000 were waiting for
kidney transplants are distributed as follows: Laiko
Hospital 646, Evangelismos Hospital 131, Hippocration
Hospital 337, and Rio-Patras Hospital 66 and the
distribution of renal grafts as they become avail-
able is proportional to these numbers. Unfortunately
the effectiveness of this decision is partly offset by
the small number of kidneys available, which leads to
exceptionally long waiting times for the recipients.

Another undesirable result of the small number of
transplants performed in Greece is its effect upon the
transplant units’ function. It has been found that the
graft survival rate increases when the annual number
of transplants performed at the unit is greater than
35 and the experience of the nephrologists working in
the unit is greater than 15 years [7,8]. Patient survival
has also been shown to be favourably improved when
the experience of the nephrologists exceeds 15 years
and when that of the surgeons exceeds 500 transplant
interventions. At Laiko Hospital in Athens where
during the decade 1990–1999, 47.9% (669/1398) of all
renal transplantations in Greece were performed, the
1 and 5 years cumulative patient survival was 96.2 and
88.0% for cadaveric transplants and 98.8 and 96.8% for
living transplants. Regarding graft survival the 1 and
5 years cumulative survival was 93 and 85% for living
and 83 and 66% for cadaveric transplants, respectively.

In summary, it can be stated that renal transplantation
in Greece started at an acceptable period of time.
The State also introduced timely legislation and created
the necessary infrastructure for centralization of the
control but left significant gaps concerning both the
function of the transplant units and the organization of
a supply of cadaver organs. These problems remain
unresolved today and their chronicity has resulted in
the fact that transplantation is at present and
numerically at least at its nadir for the last decade.
References


