
Editorial comment

Renal Transplantation in Croatia: A Personal View

Basic-Jukic Nikolina i Kes Petar

Department of nephrology and dialysis, Clinical Hospital Centre Zagreb, University of Zagreb, Zagreb, Croatia

History of renal transplantation in Croatia

Renal transplantation in Croatia has a long history. First transplantation from the living donor was performed in Rijeka in 1971 by Professor Vinko Franciskovic. Next year, first renal transplantation from deceased donor was also performed in Rijeka. University hospital centre Zagreb started with renal transplantation in 1972. First combined kidney-pancreas transplantation was performed in Rijeka in 1993, while the first kidney-liver combined transplantation was done in University hospital Merkur in Zagreb in 2005.

Patients on renal replacement therapy in Croatia

According to the data from Croatian registry for renal replacement therapy 4009 patients had been treated with renal replacement therapy on December 31st 2008. Out of this number (prevalence of 904 per million population), 68% were treated with hemodialysis, 6% with peritoneal dialysis and 26% of patients had functioning renal allograft. The most common primary renal disease was diabetic nephropathy (31%), followed by vascular diseases (22%) and glomerulonephritis (15%) [1].

Transplantation centers

There are currently 4 renal transplantation centers in Croatia: two in Zagreb (University hospital centre Zagreb and Clinical hospital Merkur), one in Rijeka and Osijek. Tissue typing centers are situated in Zagreb, Rijeka and Split.

Establishment of renal transplant program

Significant efforts were needed to establish a successful renal transplant program. A well trained and experienced personnel was already available, but as all surrounding countries, Croatia suffered from lack of donors. In 2003 Ministry of health of Republic of Croatia recognized the importance of renal transplantation for the benefit of patients but also of the whole society and started with strong support for organ donation. Previous isolated efforts (donor network, donor cards, renal transplant personnel efforts...) get additional strength. Promotion in different

media like television and magazines, series of lectures held for medical doctors resulted in increasing number of donors. It is well known that positive stories in media result in increase of organ donation, and Croatia succeeded to avoid any possibility of wrong interpretation of organ allocation. All decisions were brought by a team consisted of a nephrologist, transplant surgeon and immunologist. Organ allocation was primarily based on HLA matching.

One of the most important measures in favor of transplantation occurs when Ministry of health decided to financially cover renal transplantation separately from the usual hospital limits. These measures enable introduction of novel immunosuppressive drugs and protocols in renal transplantation, as well as performance of immunologically „high risk“ transplantations which need more intensive and thus more expensive immunosuppressive treatment.

From the point of organ donation, very important measure was introduction of national and hospital coordinators for organ donation who are responsible for identification and further processing of potential donors. Larger hospitals have dedicated transplant coordinators, while in smaller hospitals this function is usually performed by intensivists or anesthesiologists. It is interesting that the second most active hospital is small general hospital in Varaždin, city on the north of Croatia. This situation clearly demonstrates the importance of the so called „human factor“ in success of any process.

Clinical coordinators for renal transplantation work in renal transplant centers and are responsible for the maintenance of the waiting-list and for cooperation with Eurotransplant. They coordinate evaluation before wait-listing and reevaluations of the patients during their waiting for renal transplantation. These are nephrologists who work in close collaboration with transplant surgeons.

Based on the previous actions Croatia succeeded to establish a solid renal transplant program and to increase number of donors, thus becoming interesting for other countries in the region for organ exchange. Eurotransplant is organization for organ allocation which allocates organs in 7 different European countries. Croatia joined Eurotransplant in June 2007, and from August 15th 2007 first organs were transplanted via this organization.

From that point of time significant changes have occurred. First of all, a stringent administrative support was necessary to maintain the whole structure, starting from the Ministry of health with a national coordinator, across the hospital coordinators, clinical coordinators, finishing with doctors working in dialysis centers, and finally with a renal transplant recipient. Thus, excellent organization available 24 hours per day was necessary for this project. Once when this organizational scheme was established, everyday work becomes much easier than before.

Second, a significant change in organ allocation was implemented. From the HLA based organ allocation we swit-

ched to Eurotransplants' scheme of allocation which counts waiting time, HLA matching and country balance (export and import of organs between the countries). This allocation scheme resulted in high number of renal transplantations being performed in the long-term dialysis patients who gained lots of points for the waiting-time. During the first three days in Eurotransplant, 9 transplantations were performed just in Clinical Hospital Centre Zagreb.

Statistics

Based on increased organ donation (Figure 1), from 1998 to 2008, significant increase in number of renal transplan-

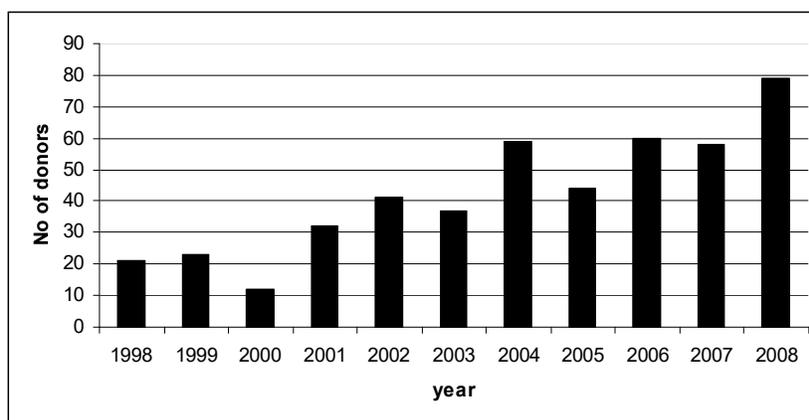


Fig. 1. Number of deceased donors from 1998 to 2008

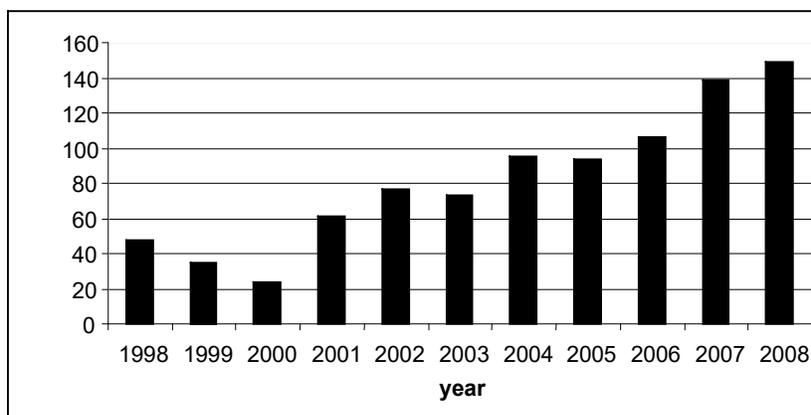


Fig. 2. Number of renal transplantations in Croatia from 1998 to 2008

tations was recorded (Figure 2). Number of living donors ranged from 7 to 24 per year (11-28 % of all transplantations), what demonstrates that there is still possibility to increase number of renal transplantations in Croatia by promotion of living organ donation. In 2009, University hospital centre Zagreb performed 105 renal transplantations thus becoming the 6th biggest centre in Eurotransplant.

Changing trend in characteristics of renal allograft recipients

First year in Eurotransplant was characterized by renal

transplantations performed in very long-term dialysis pati-

Table 1. Changing trend in characteristics of renal allograft recipients. HBV – hepatitis B, HCV – hepatitis C

	2007	2008	2009
HBV +	0	2(2.19%)	0
HCV +	8(20.5%)	17(18.68%)	2(2.7%)
Age	48	47	48
Years on dialysis	12	8	6
Second transplantation	0	6	7

ents (Table 1). High proportions of patients were hepatitis C or B positive. In the succeeding years, “normalization” of renal transplantation had occurred, while most of the long-term dialysis patients received kidney allograft during the first year.

Conclusion

Pathway for establishment of deceased donor renal transplant program is hard with inclusion of all society. Promotion of organ donation, transparency of allocation,

devotion of transplant staff and financial support are all necessary for successful transplantation.

Conflict of interest statement. None declared.

References

1. Croatian registry for renal replacement therapy. Annual report. Available at: <http://www.hdndt.org/registar-forward-2005.htm>. Approached on January 27, 2010.