



Renal Transplantation Data: A cross-sectional study

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ABSTRACT: This study aims to compile data that belongs to 654 renal transplantation patients whose operations were realized at a training research hospital located in the west of Turkey. The archives of 654 renal transplantation between October 1994 and February 2013 were analyzed retrospectively. Demographic data, the causes of chronic renal failure (CRF), donor type, donor gender, donor relationship, the duration and type of dialysis prior to transplantation were evaluated. While 263 (40.2%) of the 654 patients were female, 391 (59.8%) were male. While 438 (67%) patients have had hemodialysis, 59 (9.0%) have had peritoneal dialysis prior to the transplantation. It is observed that 372 (56.90%) transplantations were from alive donors, 271 (41.40%) of them were from cadaver donors and 11 (1.7%) of them were from cross donors. When the donor relationships of 372 transplantation cases made from alive donors were analyzed; it is determined that 134 (36%), 70 (18.80%), 65 (17.50%), 65 (17.50%), 5 (1.34%) organs were taken from mothers, fathers, sisters/brothers, spouses or other relatives and children respectively. When reasons of CRF at the patients who had organ transplantation is analyzed, various reasons are observed in the frame of the study.

Keywords: Cadaver, renal insufficiency, transplants

I. INTRODUCTION

Chronic renal failure (CRF) is a disease seriously causing morbidity and mortality, which is increasing in prevalence. In Turkey, there are almost 70000 patients having renal failure and continuing their lives with dialysis or transplantation. Approximately, 13% of these patients are living with renal transplantation while 87% of them are living with hemodialysis [1]. Although legal and organizational arrangements have followed the medical developments on this subject; the biggest hindrance to these developments is the inadequacy of organ donation. The dimension of this problem is much greater in a developing country such as Turkey [2]. Although 83.7% of the total patients awaited kidney transplantation in Turkey in 2001, only 10.8% received a graft [3].

There are many reasons for CRF. The most common reasons are unregulated diabetes mellitus and hypertension. Along with the regulation of only these two illnesses, 50% decrease is foreseen in the number of patients having hemodialysis [1]. Many illnesses including chronic glomerulonephritis, obstructive uropathy, interstitial nephritis have the possibility of turning out to CRF. Advanced uremia is present and etiology cannot be detected frequently during the initial application of most patients [4,5]. In addition to its' biological problems, CRF also brings out social and psychological problems affecting the patients' life quality. Social isolation, difficulty of finding a job, constant need for help and the problems related with family circumstances create tendency for psychiatric illnesses [6]. Additionally, the cost of hemodialysis is notably high. 1.5 billion US Dollars is spent per year for hemodialysis in Turkey [7].

CRF is a serious social problem with its' public health, economic and psychological consequences and increasing in prevalence. This study aims to compile the data that belongs to 654 renal transplantation patients and whose operations were realized at a training research hospital located in the west of Turkey between the years 1994 and 2013.

II. MATERIAL AND METHODS

Study was performed at the Organ Transplantation Polyclinic of Izmir Tepecik Training and Research Hospital in may 2013. The archives of 654 renal transplantation in the mentioned hospital between the dates october 1994 and february 2013 were analyzed retrospectively and the demographic data, the causes of chronic renal failure (CRF), donor type, donor gender, donor relationship, the duration and type of dialysis prior to transplantation were evaluated.

The statistical analyses were held by the package program Statistical Package for Social Sciences (SPSS) version 16.0. Frequency distributions, percentages, average and standard error values were calculated as the descriptive statistics of variables. To compare groups, chi-square test was used.

III. RESULTS

Average number of patients applied to organ transplantation polyclinic was 32,7/year. Minimum number was 3 (0.45%) in 1994 and maximum was 56 (8.56%) in 2006. While 263 (40.2%) of the 654 patients included to the study were female, 391 (59.8%) were male. The average age of the patients was $32,60 \pm 12,46$ (min:4 , max:66). The average dialysis period was found as $32,18 \pm 41,58$ (min:1 , max:260) months. Some specifications of the patients within the scope of the study were summarized below (table 1).

Table 1. Some specifications of the patients within the scope of the study

Characteristics	n = 654	% [©]
Gender		
Male	391	59.8
Female	263	40.2
Causes of CRF		
Hypertensive nephropathy	46	7.0
Chronic glomerulonephritis	27	4.1
Vesicoureteral reflux	21	3.2
Others*	151	23.2
Causes couldn't be detected	409	62.5
Transplantation prior to treatment		
Hemodialysis	438	67.0
Periton dialysis	59	9.0
Records couldn't be found	157	24.0
Donor type		
Alive	372	56.9
Cadaver	271	41.4
Cross	11	1.7
Donor sexuality		
Female	291	44.5
Male	294	45.5
Records couldn't be found	69	10.6
Donor relationships from alive donors (n:372)		
Mother	134	36.0
Father	70	18.8
Sister/brother	65	17.5
Spouse/other relative	65	17.5
Child	5	1.3
Records couldn't be found	33	8.85

©: Row ratio

*: amyloidosis, polycystic kidney disease, diabetic nephropathy, neurogenic bladder

Sixtyfour patients (9.7%) lost her kidney after the operation. The most important factors related with this situation were chronic rejection (n:26, 40.6%) and patient death (n:20, 31.2%). Average kidney survival time after the operation was $40,37 \pm 3,72$ days (min: 0 , max:139).

IV. DISCUSSION

Early diagnosis of CRF and regular follow up after diagnosis is substantially important in slowing down and even preventing the process beginning with hemodialysis of the patient and ending up with organ transplantation.

When reasons of CRF at the patients who had organ transplantation is analyzed, various reasons are observed in the frame of the study. Detailed investigation of these reasons for each patients is vital. As the disease advances, organ transplantation becomes inevitable. Since the number of organ donors is low in Turkey and all over the globe, frequency of the patients waiting for transplantation increases and the waiting periods extend [8].

While the rate of transplantation from cadaver is 2.4 per million in Turkey, it is around 34.6 and 20.9 in Spain and Italy respectively [9]. Transplantations from alive donors gains more importance in Turkey due to the difficulties experienced in transplantations from cadaver and particularly the excess number of patients waiting for transplantation. However, transplantations are mainly from cadavers in countries managed to raise awareness adequately [10].

Analyzing the treatments prior to transplantations, hemodialysis is the most important treatment method with 438 (67%) patients. This situation may be explained by the hemodialysis treatment practice being easier and cost effective and multitude number of hemodialysis centers in our country. When the organ donors for transplantation are analyzed; number of alive donors (n:372 , 56.9%) were more then cadaver donors (271 , 41.4%). Even 80% of donors are cadavers in developed countries, there is no country in the world that provides all of the organs needed from cadavers. The number of cadaver donors for each million population is 34.6 in Spain; 21.1 in Italy; 20.9 in France and 2.4 in Turkey [11]. The number of cadaver donors has increased over the years in Turkey, from 28 in 2001 to 242 in 2008; but it is still less than the required number [12]. Significant difference couldn't be observed in regard to donor sexuality. The most frequent donors were mothers when transplantations from alive donors are considered (n:134, 36%).

The majority of the patients waiting at the organ-tissue transplantation list in the whole world are renal patients. This situation directed the attentions on renal transplantation from alive donors. As Nacar and his friends stated in their study, the mostly donated organs in our country are liver and kidney. Since kidney is the first transplanted organ in Turkey and it appears quite often at the media, it is the most known and donated organ [13]. In the studies held on students in Turkey, it is also determined that students are mostly donating liver and kidney [2,14]. Kidney was again the most known organ in an other study in which the people are asked about the organ transplantations that are possible in Turkey [16].

Sexuality, education, demographic data, socio-economic level, culture, ethnical origin affects the ideas and attitudes concerning organ donations [9,14,16,17,18]. Traditions, customs and beliefs are also important with their possible effects on the organ donations [8].

V. CONCLUSIONS

The determination of the factors which are negatively affecting the aspects of the society on organ transplantation is important for the activities targeting to increase the participation rates. As the level of awareness and sensitiveness increases, the number of donations will also increase and the number of patients waiting for transplantation will be decreased.

Conflict of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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