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AGE IMPACT ON THE RESULT OF KIDNEY TRANSPLANTATION

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Abstract:
Objectives: *This research was aimed to assess the age impact on kidney Tx (Transplantation) outcome & survival of graft and compassion of the old population with young population.*
Methodology: *A sum of nineteen hundred and forty-six-kidney transplant carried out from one thousand five hundred and thirty-seven living & four hundred and nine cadaveric donors from March 2016 to April 2018. The division of the recipients carried out into two groups in accordance with their age at the instance of Tx. First group of youngsters consisted patients with eighteen to fifty-nine year of age and second group contained the patients with more than fifty-nine years of age.*
Results: *We found the acute rejection in 19.50% patients of young group whereas this frequency was 16.70% in the second age group. DGF was present in 6.30% patients of younger group & 13.50% patients of the old group. The assessment of total rate of survival displayed that 1.60% patients in the groups of young patients and 6.80% patients of the old group met their death.*
Conclusions: *There are very high rates of graft survival in kidney transplant in patients of both age groups. However, there were high risks of complication among the patients of the old group in comparison with the patients of the young group. Therefore, it is very vital to choose the elderly patients for the kidney Tx.*
Key Words: *Elder, kidney, transplant, vital, methodology, survival, comparison.*

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INTRODUCTION:

The amount of the old patients with final stage kidney diseases who were going for kidney transplantation is increasing day by day as the population of the world is getting it last age. Additionally, people with elder age also perform the role of donor. Recently, final stages of life are not better for transplantation for the recipient. Nevertheless, the expectation of the short life and rate of the clinical complications associated with various co-morbidities are the reason of a bias for the kidney Tx among elder persons. Various health centers in the modern countries stated that outcomes of the kidney transplant in elder persons in order to assess the danger of the kidney donors of elder age as well as recipients and determination of the impacts of the increasing age on the rate of survival of graft [1-5].

The clear findings about a discrete conclusion are not available. Therefore, it is a supposition that kidney transplantation is safe for the selected elder persons. The results of the kidney transplant in the patients of elder age should be assess before getting this very consequence. To get this aim, in this very large research in single center, we evaluated the impacts of elder age on the results of kidney transplantation and survival of graft and the comparison of the patients with elder age to the patients of young group.

METHODOLOGY:

A sum of one thousand nine hundred and forty-six of kidney transplant carried out from one hundred five hundred and thirty-seven & four hundred and nine cadaveric donors from March 2016 to April 2018 in our institute. We divided the recipients into two groups according to their age at the same instance of transplantation. Age group of young patients contained eighteen to fifty-nine-year age subjects and elder group patients have more than fifty-nine year of age. The patient with any serious complication were not the part of this research. The immune-suppression standards were same in the both groups.

We checked the data from files of the donors as age, sex, BMI, co-morbidities, BP, size of kidney, level of creatinine in serum & GFR (Glomerular Filtration Rate). We also checked the data of the recipients with any other serious complication, dialysis duration, BP, level of creatinine in serum, diabetes, and total duration of surgery. The average follows up duration was 120.70 ± 24.0 months. We collected the data after one, six and twelve moth of Tx and comprised availability of the DFG (Delayed Graft Function), episodes of acute rejection, total stay in hospital, and results of laboratory testing. The definition of the failure of graft was return to procedure of dialysis. Patient loss was the outcome in shape of patient's death. We also gathered the data of the follow ups of donors. SPSS V.19 was in use for the statistical analyses of the collected information. The analysis of the categorical variables carried out with the utilization of Chi square test. Monitoring of the continuous variable carried out with the help of Mann Whitney U test. Survival of the graft & patients measured with the utilization of Kaplan Meier procedure. Analysis with the help of logistic regression utilized to detect the factors of risk linked with the survival of patient & graft.

RESULTS

Among total one thousand nine hundred and forty six transplant recipients, 95.50% (n: 1859) patients were available with less than sixty years age and 4.50% (n: 87) patients were available with more than fifty nine year of age. The average age of the group of elder patients was 63.70 ± 3.60 years and the average age in the patients of younger group was 36.90 ± 11.30 years. Total 70.0% male patients were in elder group and 67.30% males were in the group of young patients. The average age of the members of donor group was 44.20 ± 12.50 years (from 18 to 87 years). Total 88.30% (n: 1719) patients were in the age group of eighteen to fifty-nine year of age group & 11.70% (n: 227) were available with more than fifty nine year of age in elder group. There were 48.60% males and 51.40% patients were from female gender.

There was no important disparity in the patients of both group for stay in hospital (8.70 ± 60 vs 9.30 ± 4.20 days). We found acute rejection in 19.50% patients in younger group whereas that rate was 16.70% in patients of elder group. DFG was present in 6.30% patients of young group and 13.50% among the patients of elder group.

The measurement of the levels of creatinine carried out after one, six & twelve months of transplantation which was same for the patients of both groups. We found no disparity between the recipients of the both groups for the rate of survival of graft, after an average follow up duration of one hundred twenty months as shown in Figure-1.

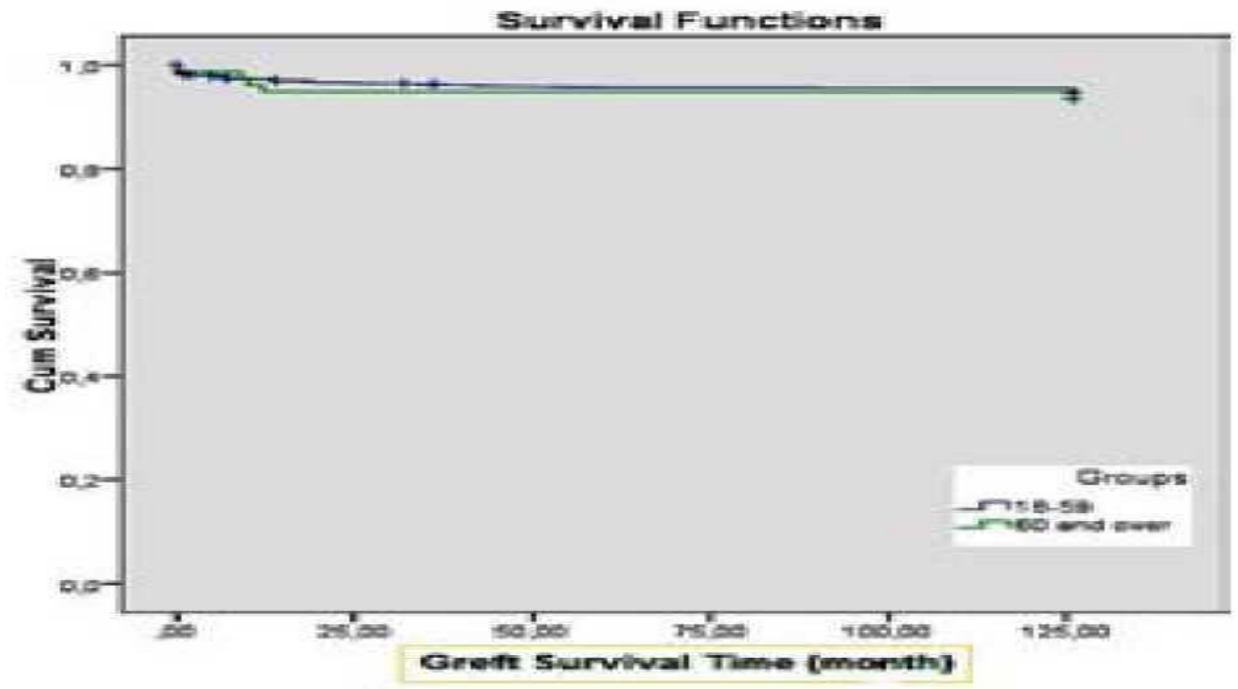


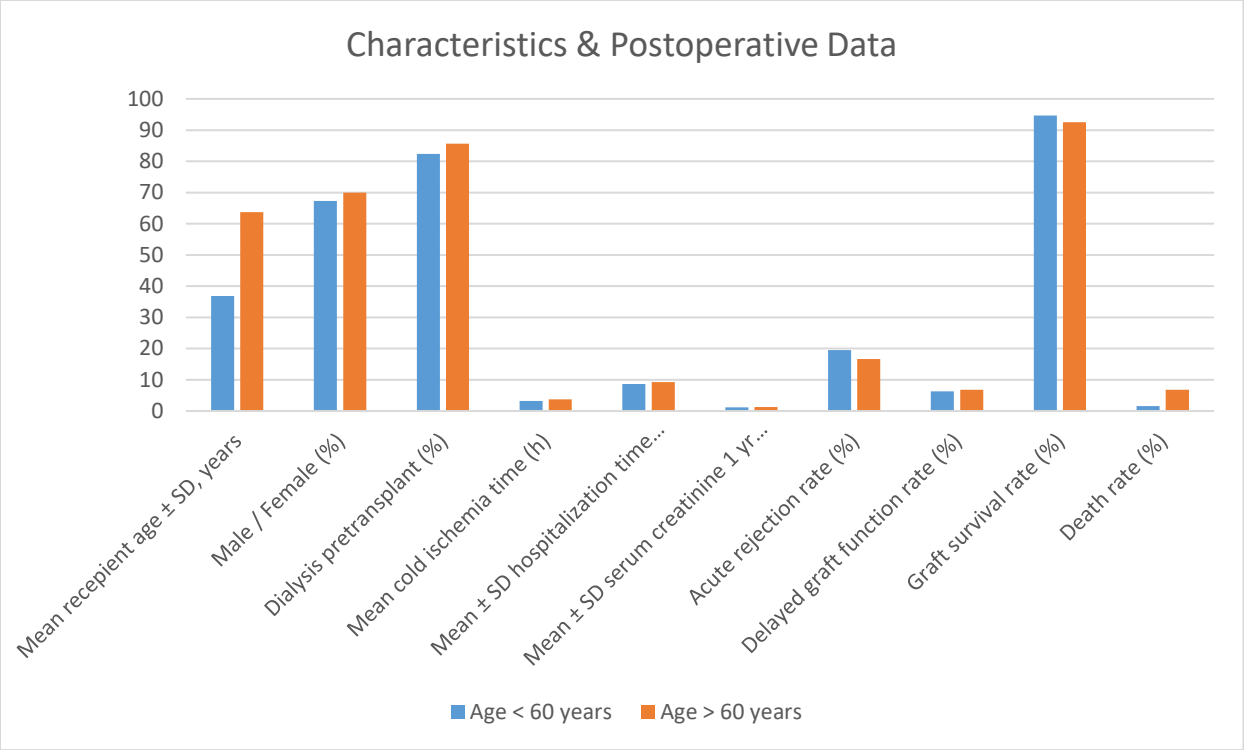
Figure 1: Survival Functions

Assessment of the total rate of survival showed that 1.60% patients in the younger group & 6.80% patient in elder group died. The most important reasons of mortality CVD {Cardiovascular Diseases (32.30%)}, infection (29.0%) & cranial bleeding (12.90%) patients of the younger group, but most common reasons of deaths were infection (60.0%), CVD (20.0%) & deficiency of liver (20.0%) patients of elder group. The information about demography and consequences gained after transplantation in the patients of both groups are available in Table-1.

Table-I: Characteristics and post-operative data of patients

Characteristics	Age < 60 years	Age > 60 years	p value
No of patients (%)	1859.0 (95.50%)	87.0 (4.50%)	-
Mean recipient age ± SD, years	36.90±11.30 years	63.70±3.60 years	-
Male / Female (%)	1252.0 / 607.0 (67.30%)	61.0 / 26.0 (70.0%)	0.5900
Dialysis pre-transplant (%)	82.40%	85.70%	0.7480
Mean cold ischemia time (h)	3.20±5.70	3.70±5.70	0.6870
Mean ± SD hospitalization time (days)	8.70±6.0 days	9.30±4.20	0.0530
Mean ± SD serum creatinine 1 yr. (mg/dL)	1.20±0.60	1.30±0.70	0.3220
Acute rejection rate (%)	19.50%	16.70%	0.5350
Delayed graft function rate (%)	6.30%	6.80%	<0.0010*
Graft survival rate (%)	94.70%	92.50%	0.6350
Death rate (%)	1.60%	6.80%	0.0030*

* Significant at 0.05 level.



DISCUSSION

The findings of this research showed a lower rate of survival and high DGF incidence among recipients having greater than fifty nine year of age in comparison with the patients of younger group but survival rate of graft was same in both groups. These findings are same with past researchs [1-9]. Bronzatto in his research concluded the old age of donor, past hypertension history & high body mass index had association with the DGF [10]. Bardonnaud in his research displayed that DGF had an association with the longer stay in hospital, complications and high cost of health care [11]. But we were unable to find disparity for long stay at hospital in the patients of both groups.

The impact of the elder age on the kidney transplantation is a controversial issue. The findings of this research showed that recipient's age did not impact the survival rate of graft. Patients of both groups were available with same function of kidney. The rate of acute rejection was less in the patients of elder group in comparison with the patients of the patients of young age. This finding was not much significant. It is a supposition that there is an association of ageing with the deficiency in the function of immunity [12]. This reason is the explanation of the high rate of acute rejection in the patients of young group of age. CVD were the most common reason of mortality according to the findings of this research in young age group but infection was main reason of death among patients of elder group.

Ossareh [1] reported the infection as the most important reason of mortality among patients of both age groups. There are some limitations of this research as this research is retroactive in nature which demands further studies for the consolidation of the findings of this research. But these findings will add vital information about this particular subject in the countries which are under development.

CONCLUSION

The results of current research reported that kidney Tx had very high rate of survival of graft among the patients of elder group as well as in the patients of younger group. The complication risk and rate of mortality was much high among the patients of the elder group in comparison with the patients of younger group. So, it is very important to select the elder patients carefully for transplantation [9].

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