Research Article



ISSN: 2399-908X

Patient and graft survival of deceased donor transplant in one year's post kidney transplant Experience of single center, what does need for results to be better than this?

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Abstract

Until this time the best modality for treatment of end stage renal failure (ESRD) is kidney transplantation, but the most important problem with that is shortage of donor. A deceased donor is the main provider of kidney and a relative and unrelative live donor is secondary provider of kidney for transplantation. But in deceased donor in comparing with live donor there is not a time for complete evaluation and almost to be in bad condition for deceased donor so it seems that there will be some difference in deceased and live donor outcome. We investigated patient and graft survival in deceased donor in one year after Transplantation in our center.

Material and method: From 2003 until 2018 in our center there were 88 ESRD patients between age of 12 to 67 years 33 females 55males that have been transplanted with deceased donors, donors (between ages 5- to 60 years 12 females 35 males) but we just only approached 85 cases of recipients (43 males and 42 females) and investigated for patient and graft survival : all of recipients have been treated with induction of ATG and then triple medicines Sandimune or Tacrolimuse and prednisolone and Imuran Cellcept and operation have been carried out with one team of surgery.

Results: 8 cases expired about in first 2 months of operation (8 case in early times) and 77 patients were live in one year (90/58%) and overall 16-allograft loss in one year ,69 allografts survived in one year (81/17%).

Conclusion: In our center one-year graft survival was 81/17% and patient survival was 90/58% which results may be comparable with other centers and it seems that the result can be better than this in our center which we will discuss in this paper.

Introduction

Incidence of End stage renal disease has a trend for increasing every year and the ideal treatment for ESRD is kidney transplant. Because in this treatment quality of life and patient survival is near normal life an also economically it is cost benefit.in comparing dialysis wit transplant it has been documented that patient survival in kidney transplant has inverse with duration of dialysis so one factor for good results with transplant is less duration of dialysis. A big problem with transplant is shortage of donor. Deceased donor is the main source of allograft but deceased donor in comparing with live donor has some disadvantage including:

Incomplete evaluation, compromise function during diagnosis of brain death and transferring to theater room, condition of kidneys different in single organ harvesting or multiple organs harvesting, and rising of creatinine before harvesting, increasing warm ischemic and cold ischemic time. In live related and unrelated donor till to anastomosing time every stage of providing kidney is under control and normal events.

Method

From 2002 to 2017 88 kidney recipient (33 females 55 males between ages 12-67 years) from deceased donor evaluated for patient and graft survival. Three cases were omitted because connection was not possible, so just only 85 cases studied. in them one-year patient survival and graft survival were studied.

Discussion

End stage renal diseases associated with increase trend in incidence every year and replacement renal is the preferred method for treatment of ESRD [1,2]. In Kidney transplant quality of life and patient survival proceed to other modality of treatment in ESRD [3]. The Shortage of donor is the FIRST and eminent problem of kidney transplant. Deceased donor is the main source for kidney replacement first time has been carried out in 1945 [3] and live related donor which has been carried out in 1953 [3] .The big problem with deceased donor is patient survival and graft survival in which live donor associated with more graft and patient survival in kidney recipient [4], why the results with live donor is better than deceased donor? In live donor there is just only one phase of extensive investigation in that everything including definitive anatomy and function of kidney and after approving for donation the procedure of surgery will be done in a very optimum condition of anesthesia and surgery and nephrology but in deceased donor there is approximately three phases :

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Key words: deceased donor, patient survival, graft survival, kidney transplant

Received: February 12, 2019; Accepted: September 16, 2019; Published: September 19, 2019

- 1. phase of disease which will be result in brain death in that phase she or he will be prescribed some medicine which may be against or gain of kidney health.
- 2. phase of diagnosis of brain death in that phase the donor will be permitted for donation he or she have been catheterized (exposed to contamination of bacteria and others)
- 3. There is less time for perfect evaluation
- 4. With a none optimized condition donor transferred to theater room
- 5. Harvesting all organs just only with one team.

In deceased donor there are three big events including: unavailable complete history of donor (infection, cancer, and medicine), presence of inflammation in organs of deceased donor increased chance of ischemic reperfusion injury in organs which have been harvested [5], a dominant difference in management between deceased donor recipient and live donor recipient in our center is antithymocyte giobulin (ATG) which has been given for all deceased donor recipients in our center but in a very rare condition with live donor recipients, it must be considered that effect of ATG on T cell after injection remains for one year [6]. We have in live donor related and unrelated recipients patient one year survival near 98/11% and graft survival near 96/22% (in 2016,53 live donor related and unrelated recipient between age 8-66, 28males and 23 females, donors between ages 22-37,49 Males, 4 females with one year patient survival 98/11%. And one-year graft survival is 96/22). An important point especially in deceased donor recipient and also in live donor recipient is vaccination for prevention infection which is preventable at least 4 weeks before transplantation [7-9], which it seems that absence of vaccination in our recipients is an important reason for infection and sepsis and finally expired cases in our center. Care of brain death for stabling vital sign and control of diuresis by expert team is effective in outcome of graft in deceased donor [10]. It is important that we remember in deceased donor releasing cytokine which induces inflammation in deceased donor organ [5] it is necessary to suppress it .Harvesting organ with expert and specialist is important for outcome of allograft it has been showed that 5% of deceased donor have bacteremia and contaminated organ during harvesting [10]. It has been showed that overall patient and graft survival in live donor is better than deceased donor [11]. For improving results of deceased donor transplantation the following points must be considered:

- 1. vaccination of recipients and all person contact with her or him
- 2. control of diuresis of deceased donor
- 3. Concert of ICU with transplant team
- 4. Control of deceased donor for prevention of contamination

- 5. Suppress releasing of cytokine in deceased donor
- 6. Harvesting organs by especial and expert surgeon
- 7. As possible as reducing and avoiding prescription of ATG especially in patient with poor condition of allograft kidney.

Results

8 cases were expired due to sepsis and DIC (3 females and 5males between ages 28 and 59 years) in 4 cases nephrectomy has been done two case immediately post anastomosis and two cases during a month after DGF (delayed graft function) and 77 patients were live in one year (%90/58) and over all 16 allograft loss in one year ,69 allografts survived in one year (81/17%).

Conclusion

It seems that with some change especially vaccination and avoid from ATG and suppress Cytokines and well caring of deceased donor it may be possible to change the results of deceased donor transplantation.

References

- USRDS (2010) Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States. National Institutes of Health; National Institute of Diabetes and Digestive and Kidney Diseases, United States Renal Data System, Annual Data Report: Bethesda.
- USRDS (2013) Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States. National Institutes of Health; National Institute of Diabetes and Digestive and Kidney Diseases, United States Renal Data System, Annual Data Report: Bethesda.
- 3. Smith SL (1990) Tissue and Organ Transplantation. St. Louis: Mosby Year Book.
- 4. Suthanthiran M, Strom TB (1994) Renal transplantation. N Engl J Med 1: 331:365.
- Eghlim Nemati, Behzad Einollahi, Mahboob Lesan Pezeshki, Vahid Porfarziani, Mohamad Reza Fattahi (2014) Does Kidney Transplantation with Deceased or Living Donor Affect Graft Survival? *Nephrourol Mon.* 6: e12182. [Crossref]
- Brennan DC, Flavin K, Lowell JA, Howard TK, Shenoy S, et al. (1999) A randomized, double-blinded comparison of thymoglobulin versus Atgam for induction immunosuppressive therapy in adult renal transplant recipients. *Transplantation* 67: 1011–1018. [Crossref]
- Gangappa S, Kokko KE, Carlson LM, Gourley T, Newell KA, et al. (2008) Immune responsiveness and protective immunity after transplantation. *Transpl Int* 21: 293–303. [Crossref]
- Danziger-Isakov L, Kumar D, AST Infectious Diseases Community of Practice (2013) Vaccination in solid organ transplantation. *Am J Transplant* 13: 311-317. [Crossref]
- Gangappa S, Kokko KE, Carlson LM, Gourley T, Newell KA, et al. (2008) Immune responsiveness and protective immunity after transplantation. *Transpl Int.* 21: 293-303. [Crossref]
- Watson CJ, Johnson RJ, Birch R, Collett D, Bradley JA (2012) A simplified donor risk index for predicting outcome after deceased donor kidney transplantation. *Transplantation* 93: 314.
- Ibrahim HN, Foley R, Tan L, Rogers T, Bailey RF, et al. (2009) Long-term consequences of kidney donation. N Engl J Med 360:459-469. [Crossref]

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