



## POSTOPERATIVE HEMORRHAGE IN DECEASED EXPANDED CRITERIA DONOR RENAL TRANSPLANTATIONS - A SINGLE CENTRE EXPERIENCE

<b>Dr. P.M.Rubaganesh*</b>	M.Ch. Post Graduate Institute of Urology, Madras Medical College, Chennai – 600003. *Corresponding Author
<b>Dr. K. Saravanan</b>	MS, M.Ch., Professor of Urology, Institute of Urology, Madras Medical College, Chennai – 600003.
<b>Dr. K. Subramaniyan</b>	MS, M.Ch., Assistant Professor Institute of Urology, Madras Medical College, Chennai – 3.

**ABSTRACT** Deceased donor renal transplantations (DDRT) tries to bridge the gap between demand and supply of kidneys from live donors. Expanded criteria donors (ECD), ie., those above 60 years or 50-59 years who had hypertension, Serum Creatinine above 1.5 mg/dl, or those died of cerebro-vascular accidents, have been included to further increase the deceased donor pool. ECD kidneys have increased incidence of delayed graft function. Postoperative hemorrhage is found more frequently in DDRTs compared to Live donor transplantations and this is more pronounced in ECD transplantations. A retrospective analysis, was done in Institute of Urology, Madras medical college and Rajiv Gandhi Government General Hospital, to study postoperative hemorrhage in ECD renal transplantations and its management.

**KEYWORDS :** Expanded Criteria Donors, Deceased Donor Renal Transplants, Postoperative Hemorrhage

### INTRODUCTION

Deceased donor renal transplantation tries to bridge the gap between demand and supply of kidneys from live donors<sup>1</sup>. It is becoming increasingly hard for the CKD patient to find a live donor. The rising prevalence of diabetes and hypertension and declining joint family system has been cited as the possible reasons. Laws are in place to prevent donation from non-related donors. This has piqued the interest in Expanded criteria donors ( ECDs). Expanded criteria donors are those above 60 years, or 50-59 years with hypertension or who died of cerebro-vascular accident or those with serum creatinine above 1.5mg/dl<sup>2</sup>. It is becoming increasingly common to see ECDs due to donations from the aging population and the increased incidence of comorbidities in this group. A desperate recipient accepts the risk associated with ECDs while enrolling for the DDRT program waitlist. For the surgeon, though the surgical exercise may not be any different from the standard DDRT, the postoperative course is not uneventful<sup>3</sup>. ECD kidneys are more likely to have delayed graft function (DGF) due to the increased sensitivity to cold ischemia time<sup>4</sup>. Due to volume overload they need hemodialysis in the immediate postoperative period. The recipient is more prone for intraoperative and postoperative bleeding due to platelet dysfunction and hypertension as a result of CKD. The incidence of delayed graft function in recipients of ECDs is more compared to the standard criteria donor and bleeding complications are more pronounced in them. The study highlights the challenges faced by the surgeon in managing postoperative bleeding in ECD DDRTs. Surgical complications seen in any renal transplantation are postoperative hemorrhage, urinary obstruction, hematuria, urinoma, arterial thrombosis, renal vein thrombosis, and lymphocele<sup>5</sup>.

### Materials and methods

The study is a retrospective analysis of 173 deceased donor renal transplants done in the Institute of Urology, Madras medical college, between January 1995 and September 2015. Data was retrieved from the patient records. All transplants were blood group compatible. Cross matching was done by complement dependent microlymphocytotoxicity test as HLA crossmatching could not be done. Till 2009, all the patients received steroids, cyclosporine and azathioprine. From 2010, the immunosuppressive regimen consisted of steroids, tacrolimus and mycophenolate mofetil. Induction agents (Anti-thymocyte globulin and Basiliximab) were given from 2012. Graft outcomes were divided into Immediate graft function (IGF), delayed graft function (DGF) and Primary non-function(PNF). IGF is the non-requirement of dialysis after transplantation. DGF is the need for dialytic support with in a week of transplant. PNF were patients whose grafts never functioned.

### Results

There were 20 expanded criteria donors (11.5%), 14 from male donors and 6 from female donors. 12 donors were above 60 years. Two

recipients, aged 56 and 59, died of cerebro-vascular accidents. Four donors between ages 50-59 had history of hypertension and two had serum creatinine 2.3 mg/dl and 2.7 mg/dl. 16 had delayed graft function and needed postoperative hemodialysis. 4 recipients had immediate graft function. The mean Cold Ischemia time (CIT) was 340+/-170 mins in the standard criteria DDRT and 220+/-45 mins in the ECD group. Since the graft from an ECD is presumed to be compromised, every effort was made to reduce the CIT. Ureteral stenting was done in all cases. Postoperative hemorrhage was seen in 8 patients and gross hematuria in two patients.

### Discussion

Postoperative bleeding is usually noticed in the first 24-48 hours after renal transplantation. This is diagnosed by seepage of blood or clots from the incision which soaks the dressing, a bulge at the surgical site with ecchymosis, increased bleeding in to the tube drain and a decreasing hematocrit. The patient also complains of pain at the surgical site which is more than the usual. A bedside ultrasound usually reveals the collection surrounding the graft and its size. Rarely a CT scan is done to define the extent of the collection. In our experience, postoperative bleeding was seen in 8 patients of ECD DDRTs. 7 patients were managed conservatively. The recipients underwent hemodialysis, transfusion of Packed red cells and fresh frozen plasma. Vital signs and hematocrit was closely monitored. Serial bedside USGs was done to document the size of the collection. 1 patient required surgical intervention due to the persistently high output from the tube drain and the fall in hematocrit. The incision was reopened and the clot was evacuated from the extraperitoneal space around the graft. Small bleeders from the surface of the graft was cauterized. All the 8 patients had normally functioning grafts at the time of discharge.

Gross hematuria was observed in two cases in the immediate postoperative period. At our institute we usually follow the extravascular approach of Lich for the ureteroneocystostomy which has a lesser incidence of hematuria compared to the Leadbetter-Politano procedure<sup>6</sup>. Minimal hematuria is quite common in the immediate postoperative period due to bladder manipulation. In our study, both the recipients with gross hematuria were managed conservatively with intermittent gentle bladder irrigation. Continuous bladder irrigation or cystoscopy to evacuate clots are usually avoided to safeguard the ureteroneocystostomy.

The long-term outcome of the renal transplant recipient depends on the early postoperative management. In an already compromised CKD patient, the early surgical complications like postoperative bleeding adds insult to injury. Other factors which affects the long term outcome of the recipient include the occurrence of delayed graft function, episodes of acute rejection, other surgical complications like

obstruction, urine leak, vascular complications and sepsis. The use of Expanded criteria donors significantly affects the long term graft and recipient outcome. Bleeding complications are more common in ECD recipients due to the increased incidence of delayed graft function. Expectant management in the immediate postoperative period is necessary esp. in postoperative bleeding. But, when deemed necessary surgical intervention should be carried out expeditiously to save the graft and the recipient.

#### References

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