

**GRAFT CHRONIC KIDNEY DISEASE
AND THE ASSOCIATED
COMPLICATIONS AMONG RENAL
ALLOGRAFT RECIPIENTS AT THE
KENYATTA NATIONAL HOSPITAL**

**A DISSERTATION SUBMITTED AS PART
FULFILMENT OF THE REQUIREMENT
FOR THE DEGREE OF MASTER OF
MEDICINE IN INTERNAL MEDICINE,
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DECLARATION

I declare that this dissertation is my original work and has not been presented for a degree at any other university

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ABSTRACT

BACKGROUND: Chronic kidney disease (CKD) refers to a spectrum of pathophysiologic processes associated with abnormal kidney function and a progressive decline in the glomerular filtration rate (GFR). Transplantation of the human kidney is the treatment of choice for advanced chronic renal failure. This is due to improved long and short-term survival benefits as compared to dialysis treatment. Kidney transplantation aims to return the patient's life to as near normalcy as possible by optimizing renal function and preventing or treating the complications that occur as a result of declining renal function. Decline in renal function and occurrence of complications related to a reduced glomerular filtration rate are associated with an increase in morbidity and mortality of renal allograft recipients. The renal post transplant state is considered a form of chronic kidney disease state. Application of the Kidney Disease Outcomes and Quality Initiative (K/DOQI) guidelines to kidney transplant recipients in various studies, has found a high prevalence of CKD in this population. Prevalence of CKD stages 3-5 has been found to be as high as 70% in some studies. There is a progressive decline of renal function with graft age, however, the rate of decline is slower than that of native kidneys, allowing more time for implementation of interventions and corrective measures that improve adverse outcomes.

OBJECTIVES: The aim of this study is to determine the prevalence of the stages of chronic kidney disease according to their estimated GFR, as well as to determine the prevalence of complications associated with reduced renal function and their association with the stage of CKD.

SETTING: The renal post transplant clinic at the Kenyatta National Hospital.

SUBJECTS: Renal allograft recipients of 18 years or above with allografts of age six months or more.

METHODS: This study was conducted as a clinic-based cross-sectional prevalence design study. Transplant recipients underwent consecutive sampling for selected variables including the recipient age, sex, body mass index (BMI), mid upper arm circumference (MUAC) and co-morbid conditions. They were also assessed for blood levels of hemoglobin, creatinine, calcium, phosphate, albumin, lipid level, glucose and urine for albumin-creatinine ratio.

RESULTS: There were 52 kidney transplant recipients (KTRs) with allografts of equal to or more than 6 months who were selected and studied. Of the allografts recipients, 69% were males while 31% were females. The mean age was 43.3 years (sd 11.38) with a range of 22 to 65 years. All the participants were formally educated with 46 out of the 52 study participants having post-primary education (88.46%). Of the 52 KTRs, 76.9% (n=40) of our patients were in gainful employment (either they were self employed or formal employees). The graft donors consisted of a majority of young donors with the youngest being 22 years and the oldest being 50 years. The mean donor age at the time of transplantation was 32.06 years (sd 7.595). The mean duration after transplantation was 38.4 months with a range of 6 months to 24 years. Living related donors made up the majority of the donors consisting of 98.1% of the donors. Only one patient received his graft from a living unrelated donor.

A large proportion of our study participants had good HLA matches with their donors, 53% had a match of equal to or greater than 3/6.

Five out of the 52 participants required post- transplant dialysis either due to delayed graft function (2 participants) or what was assumed to be an episode of acute rejection (3 participants). Hypertension was the main cause of end stage renal disease (ESRD) making up 61%, 23% of native ESRD was due to diabetes, 8% due to CGN and another 8% due to other causes.

Steroids were used as the backbone of most immunosuppressive regimens (98.1%). Other commonly used drugs were mycophenolate mofetil (86.5%) and cyclosporine (84.6%). Of the 52 participants studied, 94.2% of the participants were on antihypertensive drugs, 26.9% on antidiabetic drugs and 19.2% on lipid lowering drugs. Only one patient was on both calcium and vitamin D supplementation.

Body mass index was normal in 41% of the participants, 6% were underweight while the rest ranged between being overweight and morbidly obese. An abnormal BMI was significantly associated with stage of CKD. Hypertension was poorly controlled in 78.8% of those with hypertension.

The mean GFR was 71.46mls/min/1.73m² (sd 18.47). Most of the participants (56%) were in stage 2T with only 1 patient in ESRD and back on dialysis. Anemia occurred in 17.3%, dyslipidemia in 65.2%, proteinuria in 50%, NODAT in 3.8%, hypercalcemia in 13.5% and hyperphosphatemia in 1.9%.

CONCLUSION: The study participants displayed good renal function. Majority of the allograft recipients had covert disease (77% for both stage 1T and 2T). There were few post transplant CKD related complications and BMI was the only factor found to be significantly associated with the stage of CKD. The rates of poorly controlled hypertension were high among our study participants.

This study was carried out mainly among recipients with allografts of young age and carried out over a short duration of time. Therefore long term allograft function analysis could not be carried out. However, since CKD in the KTR is a slowly progressive condition, early and timely management is the key to ensuring good long term survival.