INTRODUCTION

Human immunodeficiency virus (HIV) infection and chronic kidney disease (CKD) have made large global impact on the world population as they both cause significant morbidity and mortality. CKD in particular is gaining wider recognition as a public health concern as it is increasing at an alarming rate. Chronic kidney disease in HIV positive subjects has a faster progression to end stage renal disease (ESRD) with a higher cost of treatment in this population. Along with HIV infection, it contributes immensely to high economic burden of many countries particularly in the developing nations like Nigeria. Early detection of CKD among HIV infected patients by assessment of recognized markers and early treatment are imperative in reducing morbidity and mortality and by extension the financial burden associated with it.

OBJECTIVES

To determine the prevalence of Chronic kidney disease and its associated risk factors among newly diagnosed Anti-retroviral (ARV) naive HIV positive patients in Abuja, Nigeria

METHODS

This was a cross sectional study carried out in the HIV clinics of the National Hospital, State House Medical Centre and District Hospitals in Asokoro and Maitama in Abuja, between November 2012 and August 2013. A total of four hundred ARV naïve, HIV infected patients with no known risk factors for kidney disease and one hundred and forty-one age and sex matched HIV negative controls who also had no evidence and known risk factors for kidney disease and had consented to the study were recruited consecutively during clinic attendance.

History, physical examination and Laboratory investigations (urinalysis, serum creatinine, albumin, lipid profile, haemoglobin concentration and CD4+ count) were performed on all the subjects, CKD was
defined as persistence of eGFR <60ml/min and/ or ACR > 30mg/g and/or proteinuria of ≥1+ dipstick over a period of 3 months. The Statistical analysis was performed on the generated data using a computer software SPSS version 20. Student t and Chi square tests were used to compare means and proportions respectively. A multivariate logistic regression analysis to determine the variables that were associated independently with CKD in HIV positive patients was done. A p-value < 0.05 was considered significant.

RESULTS

Out of 400 HIV patients recruited, females constituted 61.5% while the males 38.5%. The mean age of the HIV positive subjects was 34 ± 8.43 while the controls 32 ± 7.86 years. After a 3 month follow up to determine chronicity, a total of 111 subjects were found to have CKD giving a prevalence of 27.8% while the controls with CKD were 14 (9.9%). Albumin–creatinine-ratio (ACR)>30mg/g was found in 108 (27%) of the subjects and 9 (6.4%) of the controls while proteinuria was seen in 36 (9.0%) of the subjects and 5 (3.5%) of the controls. The mean age of the HIV subjects with CKD was 36±9.25 which was significantly higher than the mean age of those without CKD, 33±7.97 (p=0.004). Majority of the HIV positive subjects were within the working population of 25 to 64 years. There was no statistically significant difference in the sex distribution of the subjects based on their CKD status (P=0.342). The median CD4+ count was 138cells/mm³ in those with CKD and 252cells/mm³ in those without CKD (p<0.0001). The haemoglobin level was found to be statistically significantly lower in the HIV positive subjects and those with CKD when compared to the controls and those without CKD respectively, (p=<0.0001). Plasma albumin was also found to be <35mg/dl amongst the HIV positive subjects and the subjects with CKD (p=<0.0001). There was no statistically significant difference in the lipid profile of the HIV subjects based on their CKD status. The independent predictors of CKD were found to be low CD4+ cell count, low haemoglobin and low plasma albumin (P<0.05).

CONCLUSION

CKD is an increasingly common complication of HIV infection with huge economic implications. A prevalence of 27.8% among HAART naïve HIV infected patients in Abuja was found in this study. CKD is therefore more common amongst HIV positive, HAART naïve subjects in Abuja than the HIV negative
population. The observed risk factor for CKD was CD4 count <200 cells/ min while anaemia, hypoalbuminaemia and CD4 count <200 cells/min were independently associated with CKD. ACR and proteinuria are sensitive early markers in this cohort, that assist in the early diagnosis of CKD of which prompt institution of treatment will go a long way in slowing down progression of the disease in these subjects.