

Prevalence of chronic kidney disease in Nigerian Population: analysis of aggregate data from seven communities in Kwara State, Nigeria

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INTRODUCTION

Chronic kidney disease is a growing challenge in developing countries, particularly in sub-Saharan Africa. There is dearth of information on CKD in the Nigerian population that is necessary to estimate its burden in a bid to design preventive and management strategies. Few community studies in Nigeria put the prevalence of CKD at 11-19%. [1,2] The aim of the study is to determine the prevalence of CKD and its risk factors in 7 communities in Kwara State, which is located in North Central zone of Nigeria.

METHODS

Seven communities from five local government areas in Kwara state, Nigeria were screened during world kidney days (2006 and 2009-2014). Blood pressure, fasting and random blood sugar, urinalysis, weight, height, waist circumference (WC) and hip circumference were measured by standard protocol. Body mass index (BMI) and Waist-Hip ratio (WHR) were calculated. Microalbuminuria was determined on randomly selected samples, some by haemocue point of care analyzer, and some by urinary albumin-creatinine ratio (ACR). Kidney length by ultrasound were measured in subset of participants while eGFR was derived from serum creatinine, using 4-variable MDRD formula. Binary logistic regression was used to identify the significant predictors of CKD.



RESULTS

- A total of 1117 adults, ≥ 18 years were screened. The characteristics of the participants are shown in table 1.
- **Microalbuminuria of >30 mg/L was detected in 46.3%, and >50 mg/L in 21.9%.**
- **The prevalence of CKD by estimated GFR <60 ml/min/1.73m² and/or Proteinuria was 15.8%.**

Table1 |Baseline characteristics of the patients (n = 1117). Characteristics are presented as mean \pm SD, median (range) or number (%)

Gender (Male/Female), n(%)	480/637 (43/57)
Age (years)	44 \pm 14
Systolic Blood pressure (mmHg)	128 \pm 22.4
Diastolic Blood Pressure (mmHg)	80 \pm 13
Weight Circumference (m)	93.37 \pm 18.24
Hip Circumference (m)	93.15 \pm 18.11
Weight Hip Ratio	1.00 \pm 0.32
Body Mass Index (Kg/M ²)	26.05 \pm 5.78
Right kidney length (m)	93.02 \pm 8.03
Left kidney length (m)	92.70 \pm 9.30
Fasting blood sugar (mmol/L)	5.8 \pm 1.5
Pack cell volume (%)	39.0 \pm 4.0
Microalbuminuria (mg/L)	29.50 (50-160)
Albumin-Creatinine Ratio (mg/g)	32.53 (2.2-666)
eGFR by MDRD (ml/min/1.73)	111.57 (26-179)
eGFR-male by MDRD (ml/min/1.73)	126 (36-196)
eGFR-female by MDRD (ml/min/1.73)	100.96 (26-179)

Table 2: Prevalence of risk factors for CKD

Risk factors	Prevalence (%)
Hypertension	20
Diabetes	2.4
Proteinuria	13.5
Obesity (by BMI)	21
Obesity by waist circ.	14.3
Microalbuminuria	21

Table 3: Predictors of chronic kidney disease

Predictors	Odd Ratio (95%CI)	P value
Hypertension	1.56 (1.29 – 8.64)	0.006
Obesity	1.38 (1.14 – 9.53)	0.008
Age	1.21 (1.07 – 7.91)	0.028

CONCLUSION

The prevalence of CKD is high among Nigerians, with hypertension, obesity and advancing age as main risk factors. World kidney day affords opportunity for community-based screening of CKD. Efforts should be intensified at preventing and controlling hypertension and obesity in order to reduce the increasing burden of CKD in Nigeria.

ACKNOWLEDGEMENTS



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1. Olyombo et al. *WAJM*, 2013
 2. Ulasi et al. *Kidney Int Suppl*, 2013