

# Chronic Kidney Disease: Current Situation in Togo

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## Abstract

**Objective:** To describe the situations of discovery of CKD (CKD) in Togo.

**Patients and methods:** This was a cross-sectional and descriptive study conducted in the nephrology department of Sylvanus Olympio University teaching hospital (Lomé). This study was conducted from January 1st, 2017 to December 31st, 2018 for patients with CKD.

**Results:** The mean age was 44.08 years old with extreme ages of 18 to 71 years and a sex ratio of 1.56. The majority of patients came from urban areas in 68% of cases. The main antecedents were dominated by traditional medication in 69.5% of cases, followed by hypertension in 66.1% of cases. One hundred patients (84.7%) out of the 118 enrolled were referred from a health facility. Of these referred patients, 78% came from a public health center and 16% from private centers. University hospitals are at the forefront of referral centers with 30% of cases. The clinical manifestation at admission was dominated by edema (35.2%), dyspnea (33.9%) and hypertension (11.5%). 93.2% of patients were in stage 5 of CKD at admission.

**Conclusion:** CKD is a reason for hospitalization quite frequent in our service. His prognosis is redoubtable. Emphasis must be placed on better distribution of health human resources in the diagnosis and monitoring of CKD.

**Keywords:** CKD; Discovery situations; Lomé-Togo

## Introduction

Chronic Kidney Disease (CKD) is an insidious disease that often has few early symptoms [1]. It is very often diagnosed at the terminal stage in the 1990s in Western countries [2] but still relevant in developing countries [3]. Before the advent of contest programs against non-transmissible diseases in our developing countries, CKD is a near-late discovery. But after the implementation of such a program since May 2012 in Togo, no study has appreciated the diagnostic situation of CKD and the role of the health system in the discovery of the disease.

The aim of this work is to describe the situations of discovery of chronic kidney failure in the reference service for the care of CKD in Togo and secondarily to appreciate the intervention of the actors of the health system in the discovery of CKD.

## Materials and Methods

It was a transversal and descriptive study carried out in the nephrology department of Sylvanus Olympio university teaching hospital of Lomé from January 1st, 2017 to December 31st, 2018. This service is the only reference service in terms of care of CKD in Togo. Included were records of adult patients, all sexes combined with CKD and establishing their first contact with the nephrology service either in hospitalization or in consultation.

CKD is defined by the presence of a glomerular filtration rate below 60 ml/min for more than three months [4] with or without normochromic normocytic anemia, hypocalcemia and renal atrophy (kidney size less than 100 mm).

The parameters studied were: socio-demographic characteristics, the health center and/or the health personnel who addressed or referred the patient; clinical signs on admission; biological parameters (creatinine measured by the colorimetric method, glomerular filtration rate is estimated by the MDRD formula [5]; calcemia; 24 h Proteinuria, anemia, cytobacteriological examination of the urine in search of hematuria and leukocyturia); morphological parameters, namely renal ultrasound (renal atrophy is defined by kidneys less than 100 mm in size and a large kidney by kidneys larger than 120 mm).

Severe anemia is defined by a hemoglobin level of less than 8 g/dl. A proteinuria of 24 h greater than 1 g/24 h is considered to be of glomerular rank and less than 1 g/24 h of tubular or vascular rank. No nosological classification of initial nephropathy is made in this study.

## Results

A total of 118 patients were enrolled in our study. The average age was 44.08 years  $\pm$  12.65 with extremes of 18 to 71 years. There was a male predominance with a sex ratio of 1.56. The majority of patients came from urban areas in 68% of cases and in 38% of cases from rural areas. Five point one percent (5.1%) of the patients were students and 84% of the patients lived as couple.

## Antecedents

Taking traditional medicines was predominant in 69.5% of cases; followed by hypertension in 66.1% of cases. Its average duration of evolution was 50.48 months  $\pm$  6.1 with extremes of 1 to 240 months. These hypertensive patients were undergoing treatment in 75% of the

cases (calcium inhibitors in 28.8% of cases, conversion enzyme inhibitors in 16.8%, angiotensin II receptor antagonist in 21.7% of cases, beta-blockers in 5.1% of cases and centrals in 6.8% of cases). The different patient antecedents are summarized in Tables 1 and 2.

Stages	Clinical features
Stage 1 (a)	eGFR above 90 ml/min for 1.73 m <sup>2</sup> ; renal function is considered normal
Stage 2 (a)	eGFR between 89 and 60ml/min for 1.73 m <sup>2</sup> ; this stage this stage corresponds to a slightly diminished or normal low renal function
Stage 3	eGFR between 59 and 30 ml/min for 1.73 m <sup>2</sup>
Stage 4	eGFR between 29 and 15 ml/min for 1.73 m <sup>2</sup>
Stage 5	eGFR less than 15ml/min for 1.73 m <sup>2</sup> ; this is the "terminal" stage, involving the use of substitution treatment for renal failure

eGFR: Estimated Glomerular Filtration Rate. (a) For stages 1 and 2, we talk about kidney disease without kidney failure when other markers of renal impairment are present (proteinuria, urinary sediment abnormalities, morphological or histological changes of the kidneys).

**Table 1:** Classification of CKD [4].

Antecedants	Numbers (%)
Hypertension	78 (66.1)
Diabetes	12 (10.2)
Glomerulopathy	2 (1.7%)
HIV	24 (20.3)
Gravidique Toxemia	4 (3,4)
Renal Polycystic	2 (1.7%)
Tobacco	6 (5.1%)
Traditional medicines	82 (69.5)
Cardiopathy	2 (1.7%)

**Table 2:** Antecedents.

## Circumstances of discovery of CKD

**Mode of admission:** One hundred patients (84.7%) out of the 118 enrolled were referred or sent from a health facility and 18 patients (15.3%) were self-consulted in the nephrology department. Of these referred patients, 78% came from a public health center and 16% from

private centers. University hospitals are at the forefront of reference centers with 30% of cases, as shown in Table 3. The health staff at the origin of the discovery was a doctor in 66.1% of cases as shown in Table 4.

Reference Center	Frequency (n)	Percentage (%)
CHU	30	30.00%
CHR	10	10.00%
Peripheral center	28	28.00%
Private health structure	16	16%
CMS downtown	8	8.00%
Not informed	8	8.00%

Total	100	100.00%
CHU: University Hospital Center; CHR: Regional Hospital Center; CMS: Community Health Center		

**Table 3:** CKD Patient Reference Center.

Type of health staff	Frequency	Percentage
Doctor	78	66.10%
Nurse	12	10.20%
Medical Assistant	10	8.50%
Not informed	18	15.30%
Total	118	100.00%

**Table 4:** Type of referring healthcare staff.

**Clinical signs at admission:** Renal edema was present in 35.2% of cases; dyspnea in 33.9% of cases and Hypertension in 11.5% of cases. Clinical signs at admission are summarized in Table 5.

Clinical signs	Numbers (%)
Renal edema	42 (35.2)
Dyspnea	40 (33.9)
Digestive disorders	26 (22.0)
Disorders of consciousness	8 (6.8)
Acute hypertensive crisis	14 (11.5)
Infection (pulmonary, urinary, sepsis)	8 (6.8)
Alteration of the general condition	2 (1.6)
Oliguria	18 (15.3)

**Table 5:** Distribution of patients according to clinical signs at admission.

### Paraclinical characteristics

Proteinuria was present in 93.2% of patients. The average was 1754.6 mg/24 h with extremes of 104 to 7234 mg/24 h. Microscopic hematuria was present in 4 patients. The mean creatinine was 1195.16 micromol/l  $\pm$  672.7 extreme from 203.3 to 4101.76 micromol/l. Table 6 shows the distribution of patients by stage of CKD, 96.4% of patients

had anemia at admission. Average hemoglobin level was 7.59 g/dl  $\pm$  2.3 with extremes of 2.8 to 14 g/dl. 74, 57% of patients had severe anemia. Hypocalcemia was found in 91.52% of patients. Mean calcium level was 79.06 mg/l  $\pm$  15.1 with extremes of 53 to 154 mg/l. Renal atrophy was present in 70.5% of cases as shown in Table 7.

Stage	Numbers (%)
Stage 1	0 (0)
Stage 2	0 (0)
Stage 3	4 (3.4)
Stage 4	4 (3.4)

Stage 5	110 (93.2)
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**Table 6:** Distribution according to the stages of CKD.

Kidney	Frequency	Percentage
Increased size	2	2.30%
Normal size	24	27.30%
Small size	62	70.50%
Total	88	100.00%

**Table 7:** Renal atrophy values.

## Discussion

The average age of our population was young, as in most studies in Sub-Saharan Africa [6-9]; in contrary to Western countries where CKD affects people aged 60 and over [10]. The discovery of CKD in young patients is a particularity in Sub-Saharan Africa, probably linked to the low socio-economic level and ancestral beliefs that motivate the use of traditional medicines [11].

The male sex was predominant in this series of cases, and this is in accordance with the results of Sabi et al. [3] in 2014 and Amékoudi et al. [7] in 2016. This male predominance may be explained by the fact that the male sex is an unchangeable risk factor for CKD [4].

Most enrolled patients were referred or sent by a doctor (66.1%). The urban health structures were the most represented in the reference centers with a predominance of university hospitals in 30% of cases. This can be explained by the fact that there is a much greater chance of discovering CKD in the capital or in large cities in developing countries than in rural areas [6]. This is favored by the unequal distribution of health human resources [11], in particular health personnel informed and trained on CKD (nephrologist, other specialists, generalists, nurses, dieticians, medical assistants). This situation paralyzes the early screening of CKD leading to patients generally arriving at the end stage (93.6% of cases) in our study. This high rate found is similar to those found in African [12-14]. Despite the establishment of a kidney disease program in our country since 2012, patients are still being discovered at a very late stage. This can be explained on one hand by the inadequacies or the almost absent screening strategies for kidney disease, and on the other hand by the passivity of general doctors in the search for kidney disease in the general population and even in at-risk patients [1]. This implies the need to adapt the distribution of tasks between different health professionals, as well as a need for public actions to limit the weight of kidney disease, especially its appearance. Prevention is essential to limit the impact of a chronic disease, both at the individual and societal level [15].

Screening for CKD is the first step in the effective care of these patients. This screening must be early in patients in contact with the health system. It must be accompanied by rigorous monitoring to slow the progression of the disease to the terminal stage [4,16].

The success of this follow-up is not only the responsibility of the nephrologist even though he is at the center of this care; but it is also based on a well-organized health system with a network of health care

personnel made available to the patient from screening to the advent of extra-renal replacement [17]. These strategies for secondary prevention have significantly modified the epidemiology of CKD, whose screening is earlier in Western countries [15].

Clinical manifestations are polymorphic, nonspecific for kidney disease, as in most studies [6,18,19]. These are the various manifestations that lead patients to consult and again with a delay because the persistence of the signs leads to mystical explanations within the African community, probably due to lack of information of the nursing staff or the patient [6]. On the other hand, these polymorphic clinical manifestations are rare in the West because of the early care given to patients in a dialysis-transplantation program [6]. This also shows the need for information of the population, but also of the health care staff on screening for CKD regardless of the stage to reduce the time of urgent dialysis with a prognosis from the start dark.

Patients had a history of taking traditional medications in 69.5% of cases, hypertension in 66.1% cases, HIV in 20.3% of the cases and diabetes in 10.2%. Ouattara et al. [6] found similar results with the presence of self-medication (38.5%), high blood pressure (36.2%), HIV infection (24.2%) and diabetes mellitus (12.3%). These antecedents are known to be important factors in the occurrence or worsening of CKD.

Almost all patients had anemia (93.2%). They also had a hypocalcemia (91.52%), a significant reduction in the size of their kidneys and an abundant proteinuria. This reflects the delay of diagnosis and care in our environments [11,15,16].

## Conclusion

CKD is belatedly diagnosed in our context with many comorbidities. The patients are put in contact with the nephrologist at the time of the extrarenal treatment with a reserved prognosis.

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