

The Comorbidities Associated with Chronic Kidney Disease among Young People Living with HIV in Uganda: A Case Control Study

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Abstract

Background: Chronic Kidney Disease (CKD) is often complicated by disorders in multiple body systems as the kidneys play a pivotal role in homeostasis maintenance in the body. The most commonly affected systems are the haematological, cardiovascular, endocrine and musculoskeletal. CKD complications increase with reducing kidney function and are associated with higher mortality, morbidity and reduced quality of life. The spectrum of complications among young people living with HIV are unknown.

Objective: The study set out to explore the comorbidities that YPLHIV present with in Kampala, Uganda.

Methods: This was an unmatched nested case control study conducted in seven urban ART clinics. The cases were the YPLHIV (10 to 24 years) diagnosed with CKD defined as having an eGFR below 90ml/min/1.73m² on two separate occasions three or more months apart. The controls were the YPLHIV with an eGFR above 90ml/min/1.73m² at baseline. Data were collected on demographic and clinical factors as well as presence of blood pressure, fasting glucose levels, anaemia, electrolytes, parathyroid hormone and cognitive impairment. Demographic and clinical factors were summarised in means and standard deviations and multivariable logistic regression

was done to find associations of comorbidities with CKD.

Results: A total of 292 participants (92 cases and 196 controls) were recruited. The majority of the cases were male 57 (59.4%) and the controls were female 125 (63.8%). More cases were aged less than 17 years 85 (88.5%) compared to controls 91 (46.4%). Cases had 3.73 (95% CI 1.53-9.12) times the odds of having a detectable HIV viral load compared to controls and 4.19 (95% CI 2.28-7.72) times odds of having proteinuria. The associated comorbidities were cognitive impairment, hypochloraemia, hyperphosphatemia, high mean corpuscular volume and haemoglobin. There was no association of CKD with hypertension or anaemia.

Conclusion: YPLHIV with CKD are developing comorbidities associated with reduced kidney function and damage with a different pattern from that observed in adults with CKD. Early diagnosis and management are crucial to slow down progression. HIV programs should routinely screen YPLHIV for CKD and its complications. Further research is needed to discern the pattern and why it is different from adults.

Key words: Comorbidities, Chronic Kidney Disease (CKD), Young People Living with HIV. (YPLHIV)