

## **ABSTRACT**

### **Background**

With the increasing use of HAART (Highly Active Antiretroviral Treatment), chronic kidney disease is becoming an increasingly important consideration for the clinician. In resource-limited settings like sub-Saharan Africa, predictors of outcome are important when deciding on the timing of HAART initiation.

### **Methods**

The main objectives of this study included assessment of outcomes of HIV positive patients with chronic kidney disease (CKD) on HAART using mortality and changes in renal function and proteinuria over a one year period or longer; in addition, the impact of common co-morbid conditions and predictors of outcome were assessed. A retrospective study was done on 169 patients with CKD at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH). Group 1 ( $n = 87$ ) were ART-naïve and had baseline pre-HAART initiation results available. Group 2 ( $n = 82$ ) were on HAART prior to being referred to the HIV renal clinic.

### **Results**

In Group 1, renal function improved from a median baseline eGFR of  $20.8 \pm \text{SEM ml/min/1.73m}^2$  to  $57.7 \pm \text{SEM ml/min/1.73m}^2$  ( $p < 0.05$ ) at 24 months. Median baseline proteinuria was  $0.3 \pm \text{SEM g/mmol}$  with a decrease to  $0.08 \pm \text{SEM g/mmol}$  at 24 months ( $p < 0.05$ ). In Group 2, the median time from initiation of HAART to presentation to HIV renal clinic was 25 months. Median baseline eGFR was  $38.9 \pm \text{SEM ml/min/1.73m}^2$  with an increase to  $47.3 \pm \text{SEM ml/min/1.73m}^2$  at 24 months ( $p = 0.4256$ ). Median baseline proteinuria was  $3 \text{g} \pm \text{SEM g/mmol}$ , with a decrease at 12 months to  $1.1 \text{g} \pm \text{SEM g/mmol}$  and subsequent increase to  $0.21 \text{g} \pm \text{SEM g/mmol}$  at 24 months. These findings suggest that renal function may plateau at around 24 months on HAART. HIV-associated nephropathy (HIVAN) and HIV immune complex disease (HIV-ICD) were the main

histological findings and both improved with HAART. Factors associated with poor renal outcome were diabetes mellitus (OR 4.24, CI 1.02-17.5) (p 0.04) and lower starting eGFR (OR 1.01, CI 1-1.02) (p0.017).

### **Conclusions**

**Initiating HAART before severe renal dysfunction has developed improves renal outcomes and reduces the burden of HIV CKD.**