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## **Prevalence of Chronic Kidney Disease Among HIV-infected Population in Asia: A Systematic Literature Review and Meta-Analysis**

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**Objectives:** Chronic kidney disease (CKD) is a major health concern for HIV-infected population, and an important cause of morbidity and mortality. Therefore, we conducted a systematic review and meta-analysis to estimate the prevalence of CKD among HIV-infected population in Asia.

**Methods:** A systematic literature search was performed in PubMed/Medline to retrieve articles published from January, 2000 to January, 2019. Studies were included if they reported prevalence of CKD among HIV-infected adult population in Asian countries. Meta-analysis was performed to calculate prevalence rate (%) and 95% confidence interval (CI) using "meta" package through R 3.5.2. software.

**Results:** 11 studies, with 53656 participants were included. Mean age of participants were 41.28 years. There were 4 studies conducted in Japan, 3 studies in china, 1 each study in Saudi Arabia, Taiwan, Vietnam and 1 was multi-national (Asian). From the included studies, 7 were cross-sectional studies, 3 cohort studies, and 1 RCT. CKD was defined as estimated glomerular filtration rate (eGFR) <60mL/min/1.73m<sup>2</sup> by using the equation Modification of Diet in Renal Disease (MDRD) in 7 studies, Chronic Kidney Disease Epidemiology (CKD-EPI) in 3 studies and Cockcroft-Gault (CG) in 1 study. The mean value for CD4 count ranges from 54 cells/μl to 651 cells/μl. The prevalence of hepatitis B and C co-infection ranges from 1.6% to 16% and from 3.3% to 33.4% respectively.

From meta-analysis, the random effect model estimated the overall prevalence of CKD was 9.5% (95%CI: 6.2-14.3) in HIV-infected population, with high degree of heterogeneity ( $I^2 = 99%$ ,  $p < 0.01$ ). However, no significant publication bias was observed with Egger's linear regression tests ( $p = 0.97$ ).

**Conclusions:** Results from meta-analysis showed considerable CKD prevalence rate in the HIV-infected adult population with presence of high degree of clinical heterogeneity. Further research are warranted to develop guidelines and therapeutic management program to delay CKD development in the HIV-infected population.