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Title: Anemia and its predictors among chronic kidney disease patients in Sub-Saharan African countries: A systematic review and meta-analysis

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Background: Anemia is a serious complication of chronic kidney disease (CKD) with a significant adverse outcome on the burden and progression of the disease. Hence, the study intended to assess the pooled prevalence of anemia and its predictors among CKD patients in Sub-Saharan African nations. Methods: To identify the relevant studies systematic searches were carried out in Medline, EMBASE, HINARI, Google Scholar, Science Direct, and Cochrane Library. From selected studies, data were taken out with a standardized data extraction format prepared in Microsoft Excel. Inverse variance (I2) tests were employed to evaluate the heterogeneity across the included studies. Due to substantial heterogeneity among the studies, a random-effects meta-analysis technique was employed to estimate the pooled prevalence of anemia. Subgroup analysis, sensitivity analysis, and meta-regression analysis were carried out to search the possible bases of heterogeneity. Funnel plot symmetry, Begg's test, and Egger's regression test were employed to assess the existence of publication bias. In addition, factors associated with anemia among CKD patients were examined. All statistical analyses were carried out with STATA™ Version 14 software.

Results: A total of 25 studies with 5042 study participants were considered in this study. The pooled prevalence of anemia among CKD patients was estimated to be 59.15% (95%CI, 50.02– 68.27) with a substantial level of heterogeneity as evidenced by I2 statistics (I2 = 98.1%; p <0.001). Stage of CKD (3–5) (pooled odds ratio (POR) = 5.33, 95%CI: 4.20–6.76), presence of diabetes mellitus (POR = 1.75, 95%CI: 1.10–2.78), hemodialysis history (POR = 3.06, 95%CI:1.63–5.73), and female sex (POR = 2.50, 95%CI: 1.76–3.55) were significantly related with anemia. Conclusion: More than half of CKD patients were suffering from anemia. Stage of CKD, presence of DM, hemodialysis history, and being female sex were factors associated with anemia among CKD patients.

Biography

Mitku Mammo Taderegew from Ethiopia. I have degree in Public Health and MSc in Medical Physiology. I have more than 12 publications in scientific journal. I have also review more than 10 Manuscripts.