



Dynamics of Erythropoietin Deficiency During the Progression of Chronic Kidney Disease: an Analysis from Stages I to V in Cameroonian Adults

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Letter to the Editor

We read with keen interest the article by Elimby Ngande Lionel Patrick Joel and colleagues entitled “Dynamics of Erythropoietin Deficiency during the Progression of Chronic Kidney Disease: An Analysis from Stages I to V in Cameroonian Adults” [1], published in Archives of Nephrology and Urology. The authors are to be commended for highlighting an important and often under recognized aspect of chronic kidney disease (CKD)—the progressive decline of endogenous erythropoietin (EPO) production as renal function deteriorates. Anemia is among the most prevalent and debilitating complications of CKD, contributing substantially to fatigue, impaired quality of life, cardiovascular morbidity, and increased mortality. The burden of renal anemia and its clinical consequences have been well documented in the literature [2,3]. In this context, the authors’ observation that erythropoietin deficiency becomes evident as early as CKD stage II is clinically significant. This finding aligns with current international perspectives emphasizing the importance of early recognition and management of anemia in CKD before progression to advanced disease stages [4]. The reported progressive decline in mean serum erythropoietin concentrations—from 4.62 mIU/mL in stage I to 0.63 mIU/mL in stage V—reflects the gradual loss of functional renal parenchyma. This marked reduction mirrors increasing interstitial fibrosis and impaired hypoxia-inducible factor signaling, which together limit the kidney’s ability to mount an adequate erythropoietic response [5]. Such pathophysiological changes help explain why anemia often worsens disproportionately to the degree of glomerular filtration rate decline in advanced CKD. A particularly valuable contribution of this study is the demonstration that erythropoietin deficiency frequently precedes clinically overt anemia. This observation highlights a critical window of opportunity for early screening and intervention. In resource-limited settings such as Cameroon, where late presentation and limited access to specialized care are common, early identification of EPO deficiency may help prevent severe anemia and its downstream complications. The broader burden of CKD-related anemia, extending beyond erythropoietin deficiency alone, has been increasingly recognized in contemporary reviews [6]. Beyond biological insights, the study also reflects the socioeconomic realities faced by patients living with CKD. The predominance of individuals employed in the informal sector underscores financial vulnerability and barriers to sustained treatment. Similar challenges have been reported globally, with anemia prevalence increasing steadily across CKD stages and contributing to higher healthcare utilization and costs [7].

In this context, early and targeted anemia management may offer both clinical and economic benefits. Methodologically, the authors employed standardized laboratory measurements and appropriate statistical analyses, strengthening the reliability of their findings. Future longitudinal studies incorporating iron indices, inflammatory markers, and hemoglobin trajectories would further clarify the complex mechanisms underlying anemia in CKD. Moreover, emerging therapies, including novel oral agents targeting hypoxia-inducible

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factor pathways, may provide additional treatment options in settings where access to injectable erythropoiesis-stimulating agents is limited [8]. In conclusion, this study provides timely and locally relevant evidence that erythropoietin deficiency is an early and progressive feature of chronic kidney disease among Cameroonian adults. Integrating routine erythropoietin and anemia screening into CKD care pathways could play a pivotal role in improving patient outcomes and reducing the growing burden of kidney disease in low- and middle-income countries.

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