

Anemia Among Non-Dialysis CKDu Patients in Giradurukotte, an Endemic Area in Sri Lanka

A. Medagedara^{1,2*}, J.G.S. Ranasinghe³, H.G.N. Erandika¹, T. Sonnadara^{1,4}, B.M.D.B. Basnayake¹, N. Nanayakkara¹

¹*Center for Research, National Hospital, Kandy*

²*Department of Biochemistry, Faculty of Medicine, University of Peradeniya*

³*Department of Biochemistry, Faculty of Medicine, Manipal University College
Malaysia, Malaysia*

⁴*Department of Pharmacy, Faculty of Allied Health Sciences, University of Peradeniya
ayesha.medagedara@gmail.com

Chronic Kidney Disease of Uncertain Etiology (CKDu) is an emerging public health concern that primarily affects young, productive-age farmers in the dry zone of Sri Lanka. CKDu is linked to numerous complications that contribute to a poor prognosis, with anemia being the most common. Despite its clinical significance, the prevalence and impact of anemia remain underexplored. This study evaluates the prevalence of anemia among stage II to stage V non-dialysis CKDu patients living in Giradurukotte, a CKDu endemic area in Sri Lanka. This was a cross-sectional study conducted among all 134 biopsy-proven CKDu patients registered at the Renal clinic, Giradurukotte, located in Uva Province, Sri Lanka. Blood samples were collected for Full Blood Count and Serum Creatinine tests. Demographic data were gathered from each participant, and the prevalence of anemia was studied according to age, gender, and CKDu stage. Written informed consent was obtained from all participants prior to data collection, and ethical approval was obtained from the ethical review committee at the Faculty of Medicine, University of Peradeniya. All statistical analyses were conducted using IBM SPSS Statistics version 23. A total of 134 patients, including 101 males and 33 females, were recruited. The overall prevalence of anemia was 61.94% (N = 83), with a higher prevalence in females (69.7%) compared to males (60.4%). The mean hemoglobin values were $11.34 \text{ g/dL} \pm 1.26$ and $12.82 \text{ g/dL} \pm 2.21$ for males and females, respectively. Anemia during the late stages of CKDu was higher than the early stages (Stage 2 - 36.0%, Stage 3 - 55.2%, Stage 4 - 79.4%, Stage 5 - 92.0%) ($P = 0.000$). Anemic patients had higher serum creatinine ($3.36 \pm 2.0 \text{ mg/dL}$) and were older (60.85 ± 9.4) than non-anemic patients ($P = 0.02$). Anemia remains highly prevalent among patients with CKDu and seems to increase with disease severity. Early identification and effective management strategies are essential to mitigate complications related to anemia. Continued research studies are crucial to understand and uncover the underlying causes and improve therapeutic interventions.

Keywords: Non-dialysis CKDu, anemia, endemic