THE PREVALENCE OF ANEMIA AMONG ADULTS LIVING IN A MALARIA AND HIV ENDEMIC AREA OF WESTERN KENYA

INVESTIGATORS AND INSTITUTIONAL AFFILIATIONS

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Abstract

Background: Anemia, a multifaceted global health concern, is no longer treated solely as iron deficiency (ID). While up to 50% of anemia can be attributed to ID, infectious diseases may play a significant role. Additionally, there are different standards for hemoglobin (Hgb) reference ranges across populations resulting in inconsistent anemia diagnoses.

Objectives: To identify anemia incidence among adults in an HIV and malaria endemic area of western Kenya and to determine the number of adults who became anemic during a 3-month period.

Design: This was a retrospective analysis of data from a zinc supplementation trial. Hemoglobin, C-reactive protein (CRP), and serum ferritin were measured twice over 3 months (n=500). Dietary intake, body mass index (BMI), gender, malaria, HIV status and CRP were examined as potential contributors to the development of anemia. Anemia was defined as follows to determine group differences: U.S. African-American standards of <115g/L and <129g/L and WHO standards of <110 g/L and <120 g/L for females and males, respectively.

Results: 100 subjects tested HIV positive; 198 malaria smears were positive. Mean Hgb decreased by 5.6 g/L, with no change in serum ferritin or BMI among participants. Anemia prevalence varied from 7.2% to 17.8% with significantly fewer males and more iron-deficient participants classified by the lower cut-off.

Conclusion: Most cases of low Hgb may have resulted from chronic infection as only ~30-50% exhibited ID; blanket iron supplementation may not be appropriate or effective. There is a need to establish population specific reference ranges as anemia prevalence varied with the application of different reference ranges.

Keywords: Anemia, iron deficiency, anemia of chronic disease, malaria, HIV, Kenya