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Clinical predictors of severe malarial anaemia in a holoendemic Plasmodium falciparum transmission area.

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Source

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Abstract

Severe malarial anaemia (SMA) is a common complication of Plasmodium falciparum infections, resulting in mortality rates that may exceed 30% in paediatric populations residing in holoendemic transmission areas. One strategy for reducing the morbidity and mortality associated with SMA is to identify clinical predictors that can be readily recognized by caregivers for prompt therapeutic interventions. To determine clinical predictors of SMA, Kenyan children (3-36 months, n = 671) presenting with acute illness at a rural hospital in Siaya District were recruited. Demographic, clinical, laboratory and haematological parameters were measured upon enrolment. As human immunodeficiency virus-1 and bacteraemia promote reduced haemoglobin (Hb) concentrations, children with these infections were excluded from the analyses. Children with P. falciparum mono-infections (n = 355) were stratified into three groups: uncomplicated malaria (Hb >or= 110 g/l); non-SMA (60 <or= Hb < 109), and SMA (Hb < 60 g/l). SMA was characterized by a younger age, monocytosis, thrombocytopenia, reticulocytosis, reduced erythropoiesis, elevated pigment-containing monocytes (PCM), respiratory distress, conjunctival and palmar pallor, splenomegaly, signs of malnutrition, and protracted fever and emesis. Logistic regression analysis demonstrated that age, reticulocyte count, presence of PCM and conjunctival and palmar pallor were significant predictors of SMA. Recognition of these clinical signs in children residing in resource-poor settings may help to guide the identification and management of SMA.