# A STUDY OF THE NUTRITIONAL STATUS OF CHILDREN ADMITTED WITH SEVERE MALARIA AT THE PAEDIATRIC WARD – KAKAMEGA GENERAL HOSPITAL



BY

MELSA M. LUTOMIA

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## ABSTRACT

Malaria and malnutrition have been shown to co-exist in many parts of the world. They are important causes of morbidity and mortality in children under five years of age. There has been conflicting evidence from various researchers over the association of the two conditions. Some researchers have found evidence that malnutrition protects against severe malaria while others have found no association. If this is true, it means that these malnourished children may become more susceptible to severe malaria when their nutritional status starts improving, and therefore need special precautions during this period.

This study was aimed at assessing the nutritional status of children admitted with severe malaria at the paediatrics ward – Kakamega Provincial General Hospital. The objectives of the study were:

To determine the level of malnutrition among children admitted with severe malaria.

To determine the frequency of different levels of parasitaemia (MPS/HPF) in the study population and compare their occurrence in the malnourished and well-nourished children.

To determine the full haemogram indices -HB, MCH, MCV, MCHC and reticulocyte count in a subset of the study population, ascertain their relation to severe malaria occurrence and assess prevalence and severity of anaemia

To assess serum ferritin levels in a subset of the study population, ascertain its relation to severe malaria occurrence and determine any level of iron deficiency anemia (Hb<10g/dl)

This was a cross sectional study carried out on 278 children, sampled by purposive and consecutive sampling methods.

Height and weight measurements as well as blood slide examination for malaria parasite were recorded for all participants. Full haemogram indices and Serum ferritin levels were examined on sub samples of 50 and 51 children respectively (an IMX ferritin assay kit and coulter cell counter were used for the two tests respectively). The software packages SPSS 10 for windows and EPI – INFO 2000 were used for data analysis.

Prevalence of stunting, underweight and wasting were 29.9%, 16.2% and 2.5% respectively. Malnutrition was most prevalent in the age group13-24 months, followed by the 7-12 month age group. Mean HBC was7.6g/dl with 58% of the children in the sub sample having moderate-severe anaemia (HBC <8g/dl).

The majority of the children had low parasitaemia although more than one third had high parasitaemia.

A chi square test showed no association between the nutritional status of the child and the level of parasitaemia affecting that child (p value >0.05).

Biochemical analysis of serum ferritin showed no iron deficiency among the children

These results suggest that malnutrition is a problem among children admitted with severe malaria at the hospital, and that malnourished children may be at equal risk of malaria as their normal counterparts. Therefore, in a malaria endemic zone, malaria should be looked for and treated in malnourished children as well as in the well nourished.

Anaemia in the under five is a major cause of morbidity and measures should be put in place to reduce the burden of both malarial and iron deficiency anaemia.