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**BIOCHEMICAL AND HEMATOLOGICAL PROFILES OF CHILDREN  
AGED 6 – 60 MONTHS WITH PROTEIN ENERGY MALNUTRITION  
ADMITTED TO THE MOI TEACHING AND REFERRAL HOSPITAL,  
ELDORET KENYA.**

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BY:

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## ABSTRACT

**Background:** Malnutrition is one of the leading causes of morbidity and mortality in children aged five years and below. A derangement in both micro and macronutrients have not been well documented in Eldoret.

**Broad objective:** To describe the biochemical and hematological profiles of children under 5 years with Protein Energy Malnutrition at the Moi Teaching and Referral Hospital (MTRH) Eldoret.

**Design:**

A cross sectional study

**Setting:** Moi Teaching and Referral Hospital Pediatric wards

**Population**

Children aged 6 – 60 months of age admitted to the Pediatric wards that were found to have Protein Energy Malnutrition.

**Results**

A total of 350 children aged between 6- 60 months admitted to the pediatric wards were recruited for the study between November 2008 and May 2009. Their mean age was  $20 \pm 14.5$  months and 201 (57.1%) were male. A total of 146 (41.7%) had low weight for age, 101 (28.9%) had stunting and 53 (15.1%) were wasted.

The 146 children comprised of 108 (74.0%) with underweight, 10 (6.8%) kwashiorkor, 22 (15.1%) marasmus and 6 (4.1%) marasmic-kwashiorkor. There were 76 (52.1%) males. The mean age was  $19.3 \pm 12.7$  months, mean weaning age was  $3.3 \pm 1.6$  months and 112 (76.7%) were up to date on immunization.

Analysis of their serum proteins showed 60 (41.1%) with normal serum albumin, 47 (32.2%) mild hypoalbuminaemia, 27 (18.5%) moderate hypoalbuminemia and 12 (8.2%) severe hypoalbuminaemia. Hypoalbuminaemia was found to be significantly associated with low weight for age ( $P < 0.001$ ) and stunting ( $P = 0.017$ ) but not wasting ( $P = 0.567$ ).

Hemogram showed 43 (29.5%) without anemia while 66 (45.2%) mild, 30 (20.5%) moderate and 7 (4.8%) severe anemia. 120 (82.2%) had microcytosis while 26 (17.8%) were normocytic. Severe hypochromasia was found in 115 (78.2%) children. RDW was high in 142 (97.3%) children. Anemia and high RDW were found to be significantly associated with stunting ( $P = 0.038$ ) and low weight for age ( $P = 0.044$ ) respectively.

**Conclusion:** The prevalence of PEM is high among children aged 6 – 60 months admitted to MTRH. The proportion of those with underweight, stunting and wasting is high. Anemia with microcytosis and hypoalbuminemia is common.

**Recommendation:** More needs to be done to address Malnutrition and risk factors in children with more studies being done to document the cause of microcytosis.