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ASSOCIATION BETWEEN NUTRITIONAL STATUS AND MALARIAL INFECTIONS IN CHILDREN FROM A MALARIA ENDEMIC AREA OF SRI LANKA

There are many controversies regarding the association between nutritional status and malarial infections in studies primarily carried out in African countries where the predominant species is Plasmodium falciparum. The objective of this study was to determine the association between nutritional status and malarial infections in children under 12 years living in a malaria endemic area of Sri Lanka. A total of 117 children who experienced 99 P. vivax and 18 P. falciparum infections from the Kataragama area and whose heights and weights were measured between six months and seven days prior to the acquisition of disease were studied. Malaria was diagnosed by microscopic blood smear examination and parasite counts were done. Severity of clinical disease at presentation was evaluated in children over five years using a questionnaire. Days of symptoms were recorded and z-scores for weight-for-age (WAZ), weight-for height (WHZ) and height-for-age (HAZ) as a deviation from the NCHS reference median were calculated using EPIINFO. Underweight, wasting and stunting were defined as a z-score –2 SD from the reference median of WAZ, WHZ and HAZ, respectively. Of the 117 children studied, 11.4% were stunted, 24.7% were wasted and 34.2% were underweight.

There was no significant difference in parasite density of infections between malnourished children (stunted (0.120%), wasted (0.075%) and underweight (0.078%) and normal children (0.072%) as assessed at the last observation. Malnourished children (stunted (1.7 days), wasted (1.9 days) and underweight (1.9 days)) presented earlier with infection as compared to normal children (2.1days) though the difference was not significant. There was no significant difference in severity of clinical disease between malnourished children (stunted, wasted and underweight) and normal children in all 3 anthropometric indices considered, though wasted children had less

severe disease, the difference being greatest between wasted children and normal children. The tendency for wasted children to present earlier may be the reason for less severe clinical disease among these children as compared to normal children. Immunopathological reactions which may be suppressed in wasting also may contribute to this.