

Abstract: Section C (Medical Sciences)

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Serum Albumin status: their usage in the assessment of malnutrition in children of Jaffna District

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Serum albumin is the principal nutritional marker used to identify malnutrition in children. Thus, the aim of this study was to determine the albumin deficiency and its relation to malnutrition among children aged 1 to 5 years in Jaffna District. A multistage cluster sampling of was used. Albumin concentration was estimated by bromocresol green dye binding method. Of the total of 846, 414 were males (48.9%). The mean age of this study population was 34.73 (\pm 13.14) in months. Mean albumin concentration was 3.9g/dL (95% CI: 3.8, 4.0) with ranging from 2.40 to 6.00g/dL. The mean value of the albumin were significantly high in female [4.0g/dL (95% CI: 3.9-4.2)] than in male children [3.8 g/dL (95% CI: 3.7, 3.9)] ($p=0.045$). Prevalence of albumin deficiency was 27.2% [30.0% ($n124$) in males and 24.5 % ($n106$) in females]. Prevalence of wasting, underweight and stunting were high in male [23.2 ($n96$), 35.7 ($n148$) and 28.3 ($n117$)] when compared with female children [20.4 ($n88$), 31.0 ($n134$) and 24.5 ($n106$)]. Highest percentage [32.2% ($n57$)] and lowest percentage of albumin deficiency [24.4% ($n51$)] was observed in the age group of 48-59 and 12-23 months respectively. Trend of underweight and stunting were significantly increased while overweight was decreased with age [Chi-squared for trend was applied ($p<0.01$)]. Hence, the albumin deficiency has shown significant positive correlation with the undernutrition based on anthropometric measurements. Furthermore, among the wasted children ($n184$), 83.7% ($n154$) of children were affected with albumin deficiency whereas 58.9% ($n166$) and 32.7% ($n73$) of underweighted ($n282$) and stunted children ($n223$) were affected with albumin deficiency respectively. It has been found that, the malnourished children are highly affected with albumin deficiency which is caused by several factors such as protein intake, frequent infection and deworming practices. It is suggested that the measurement of serum albumin concentrations provides a marker of malnourished children, and should prove useful in field assessments of nutritional status.

Keywords: Albumin, malnutrition, Children, Anthropometric indices, and Biochemical marker.

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