

# Serum Potassium and Calcium Level in Malnourished Children of Bangladesh

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## Abstract

Protein-energy malnutrition (PEM) also referred to as protein-calorie malnutrition, is a potentially fatal body-depletion disorder. PEM develops in children and adults whose consumption of protein and energy is insufficient to satisfy the body's nutritional needs. The modified 'Wellcome classification' was used to classify the PEM in children into marasmus, kwashiorkor, marasmic-kwashiorkor and underweight. However, in most cases the deficiency is combined. It was found that among the South Asian countries (Surveyed from 1990-2000) prevalence of wasting was 11.6% in Bangladesh, 18% in India, 11% in Pakistan, 11% in Nepal, 14% in Srilanka, 4% in Bhutan and 17% in Maldives. Malnutrition increases one's susceptibility to and severity of infections, and is thus a major component of illness and death from the diseases. This, a cross sectional study for a period from July 2008 to June 2009 to explore the changes of serum electrolytes in PEM so that effective measures making availability of adequate proteins and calories to all age groups especially to under five children through the ongoing nutrition programs to save these group of children. A total of 100 subjects aged 18 months to 5 years were enrolled for this study. Out of them 50 were the severely malnourished children regarded as Group I and 50 apparently healthy children considered as Group II. Z score of weight-for-age of Group I and Group II children were calculated by using CDC growth chart: USA, 2000. Data were collected through clinical evaluation from pre selected questionnaires and blood samples were taken for laboratory investigations. Serum potassium was measured by Ion selective electrode (ISE) method & serum calcium was determined by Colorimetric method using the test kit. Statistical significance of difference between two groups were evaluated by using unpaired 't' test with the help of SPSS software package. For each analytical test, the level of significance was set at 0.05 and p-value < 0.05 was considered significant.

Analyzing the findings of the present study, it can be concluded that significant decrease of serum potassium and calcium occur in malnourished children.

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