

PROTEIN ENERGY MALNUTRITION CURSE OF POVERTY

Habib MA¹

Protein energy malnutrition (PEM) is a major depleting factor of relatively poor community of the world. Affecting the children this interfere the normal physical and intellectual growth of population. The socio-economic cost of the malnutrition burden to the individual, family and country is high resulting in lower cognitive outcomes in children and lower adult productivity. In an update study published in 2003 author observed that about 70% of world's malnourished children live in Asia. About 65% of the preschool children of Bangladesh were observed malnourished. One in every two preschool children in South Asia was observed stunted¹. PEM often can be traced to poor maternal nutrition and health care before and during pregnancy, resulting in intrauterine growth retardation and child born with low birth weight.

Data from the World Health Organization (WHO) showed that about 60% of all deaths, occurring among children aged less than five years in developing countries, could be attributed to malnutrition. It has been estimated that nearly 50.6 million under five children are malnourished and almost 90% of these children are from developing countries. The rate of malnutrition is alarming in Bangladesh. The recent baseline study by the National Nutrition Programme (NNP) showed high rates of stunting, underweight and wasting. Of course, data from the nutrition surveillance at ICDDR,B hospital showed that the proportion of children with stunting, underweight and wasting has actually reduced during 1984-2005².

Various factors had been identified as cause of malnutrition. The National Nutrition Programme identified inappropriate infant and young child breast-feeding and complementary feeding practices as major cause of malnutrition in Bangladesh³. A longitudinal field study among children between 6 to 60 months of age in 2 villages of Bangladesh observed positive role of infectious disease in induction of malnutrition. Study observed seasonal fluctuation in growth, nutritional status and prevalence of malnutrition⁴. Same authors in another study observed that average energy consumption was approximately one-third greater during the post-harvest periods than during the pre-harvest monsoon period. Older children, particularly boys, benefited more from the post-harvest relatively abundance of food. They also observed that the intake of nutrients depressed by 10% during febrile illness⁵. Possibility of more growth

reduction in malnourished children living in iodine deficiency areas was also observed. Study conducted in areas known for iodine deficiency and endemic goiter of Malaysia among children of low economic status observed significant correlation between thyroxin (T4) and insulin-like growth factor (IGF-1 and IGFBP-3)⁶.

Malnutrition modifies resistance to infection by impairing a number of physiological processes. Serum trace element deficiency leading to depleted antioxidant protection is a contributing factor to the pathophysiology of PEM. So replacement of those elements in management of this condition plays important role. Zinc supplementation in young children has become part of management of several conditions during recent past to avoid complication of malnutrition⁷. Study showed that there was no benefit of using high dose of zinc supplementation regimen. Mortality was observed to be significantly greater in severely malnourished children managed with high dose zinc supplement. But low dose was proved to be effective⁸.

Study shows that plasma levels of vitamins A, E and C as well as Copper and Selenium reduce lower than normal in malnourished children. This reduction of antioxidant leads to rise in free radicals resulting in tissue damage⁹.

Various supplements have been tried to gain rapid improvement. Even research authority tried some probiotic like curd, leaf protein concentrate to hasten improvement process. Significant positive change in weight and haemoglobin level was observed after supplementation in PEM¹⁰.

This issue has published an original paper on 'Magnesium supplementation on children with severe protein energy malnutrition'. The studied aspect is still under emphasized in the field of management of malnourished children. There is no mentionable study found in Bangladesh in this respect. Nichols BL observed widespread magnesium depletion in malnourished Guatemalan children¹¹. Author observed that replacement of magnesium deficits was not essential for recovery; but rate of recovery was accelerated. Significant low serum magnesium level was observed in low birth weight babies, in moderate and severe malnourished children as well as in children with marked linear growth retardation by various authors^{12, 13}. An intravenous magnesium load test in elderly patient

1. Lt Col Md Ahsan Habib, M Phil, Head of the Department of Anatomy, AFMC

with protein energy malnutrition revealed that magnesium deficiency was significantly greater than those of well-nourished patients¹⁴. So, gray beard policy makers need to scratch their head for the welfare of the poor community and hope the published paper shall be able to play some role in this respect.

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MESSAGE FROM EDITOR'S DESK

It is a great pleasure that JAFMC is available online from this issue at www.banglajol.info. With this development the journal will be available to a wider extent of medical community.

Lt Col Md Ahsan Habib, M Phil has taken over as the executive editor of JAFMC in lieu of Lt Col Debashish Saha, FCPS who has posted out to a distant station. Lt Col Md Ahsan Habib was assistant editor of Bangladesh Armed Forces Medical Journal in past. He is the departmental head of Anatomy of AFMC. We hope Lt Col Md Ahsan Habib can contribute to a great extent to improve the quality of the journal.

Lt Col Mamun Mostafi MACP, FCPS, FRCP
Editor in Chief, JAFMC