Risk Factors for Severe Acute Malnutrition in Children under the Age of Five Year in Sukkur

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Abstract

Background: Severe acute malnutrition (SAM) affects approximately 13 million children under the age of 5 year and is associated with 1-2 million preventable child deaths per year.

Objectives: To determine the risk factors for severe acute malnutrition in children under the age of five year.

Settings and duration: Nutrition stabilization center of Ghulam Muhammad Mahar Medical College Hospital Sukkur from February 2011 to January 2012.

Patients and Methods: This was a prospective descriptive study. All children diagnosed as severe acute malnutrition, defined as weight for height measurement of < 70% of the median or > 3 SD below the mean World Health organization reference values or the presence of bilateral pitting edema of nutritional origin admitted in Nutrition Stabilization Center were included in this study.

Results: Two hundred seventy (270) children were admitted during study period. The age ranged from 06 to 59 months. Maternal illiteracy was present in 216(80%) and paternal illiteracy in 180(66.7%) cases. Parent's income was less than 5000/month in 198(73.3%), family size with more than 4 or more children was seen in 180(66.7%) cases. Exclusive breast feeding was present in only 70(25.9%), mixed feeding was seen in 170(62.9%) and only bottle feeding was seen in 30(11.1%) cases. Late weaning was started in 150(55.6%). Recurrent diarrhoea was seen in 120(44.4%).

Conclusions: The common risk factors associated with severe acute malnutrition were parental illiteracy, large family size, poverty, non exclusive breast feeding and recurrent diarrhoea.

Policy message: To decrease childhood malnutrition mothers should be encouraged for exclusive breast feeding. Parent’s education can play an important role in improving child health.

Key words: Severe acute malnutrition, risk factors, weaning practices, immunization and family planning.

Introduction

Malnutrition is a major public heath problem throughout the developing world and is an underlying factor in over 50% of the 10-11 million deaths in children under 5 years of age1,2. Worldwide, only 36 countries accounted for 90% of all stunted children, when countries with stunting prevalence of at least 20% were considered3. Approximately 9% of sub Saharan African and 19% of South Asian children suffer from moderate acute malnutrition4 and approximately 2% of children living in developing countries suffer from severe acute malnutrition5. This is equivalent to about 60 million children suffering from moderate acute malnutrition and 13 million suffering from severe acute malnutrition at any one time6.

Malnutrition is responsible directly or indirectly, for 60% of the 10.9 million deaths annually among children under five years. Majority of deaths occurring within 1st year are often associated with inappropriate feeding practices8. In Pakistan, malnutrition is present in 50-60% children7, stunting in 42% and wasting in 14%. The Floods Affected Nutrition Surveys (FANS)9 reported that 23.1% and 21.2% children in Northern and Southern Sindh respectively met the criteria for Global Acute Malnutrition (GAM); which is well above the WHO emergency threshold of 15%. The results from Northern Sindh also revealed severe acute malnutrition of 6.1%. According to Sindh government estimates about 90,000 children aged 6-59 months are malnourished10.

Acute malnutrition is an unstable condition and results from a relatively short duration of nutrition deficit and is often complicated by concurrent infection. In Pakistan, a child of less than 5 years suffers from 4-5 episodes of acute diarrhea annually11. This is more prevalent in socioeconomically deprived communities12. The risk factors for malnutrition are poverty, parental illiteracy, inadequate feeding practices and large family size13. Breast feeding till the age of two years and

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exclusive till the age of 6 months is of prime importance for the prevention of malnutrition. The objective of this study was to determine the risk factors and their frequency in severe acute malnutrition in children under the age of five admitted in Nutrition Stabilization Center at Sukkur.

Subjects and Methods

The prospective study was conducted in Nutrition Stabilization Center of Ghulam Muhammad Mahar Medical College Hospital Sukkur from February 2011 to January 2012. Patients diagnosed as having severe acute malnutrition, defined as weight for height measurement of < 70% of median or > 3 SD below the mean World Health Organization reference values or the presence of bilateral pitting edema of nutritional origin admitted in the nutrition stabilization center were included. After taking consent from the parents, the data was filled for each patient on a proforma. Information included demography, socioeconomic status of parents, parental education, feeding practices, vaccination and family size. Data was analyzed by SPSS version10.

Results

Two hundred seventy children were admitted during study period. Ages of the children ranged from 6 months to 59 months (mean 19 months). There were more females (55.6%) than females. Severe wasting was found in 254 (94.1%) and edematous malnutrition in 16(5.9%) cases.

Parents income of less than Rs 5000 was found in 198(73.3%) cases, illiteracy in mothers was seen in 216(80%) and in 180(66.7%) fathers. Large family size > 4 children was seen in 180(66.7%) cases. Majority of patients 221(81.9%) were from rural areas. Feeding practices were inappropriate in 200(74.1%) children, majority being fed on mixed feeding 170(62.9%) cases while, exclusive bottle feeding was done in 30(11.1%) cases. Weaning was delayed in majority 150(55.6%) cases. Recurrent diarrhoea was reported by parents in 120 (44.4%) children while immunization was not done in 140(51.9%) children.

Discussion

In the present study illiteracy and poverty were the major factors contributing to malnutrition in children while recurrent diarrhoea and non exclusive breast feeding were directly responsible for it. Malnutrition in developing countries is mostly related to parental education. In a case- control study in Bangladesh, the maternal illiteracy was associated with a four fold increase in the risk of severe acute malnutrition in children. In the present study 80% mothers and 67% fathers were illiterate. These results are comparable to 75% reported from Karachi while lesser frequency (52%) of illiteracy was reported from Sialkot. Poverty is another risk factor for malnutrition and in the present study majority of parents (73.3%) had an income of less than Rs 5000/month. Poverty as risk factor has also been reported in other studies.

Large family size is also associated with an increased risk of SAM. In our study large family size was observed in 66.6% cases. Large family size was also reported to be a risk factor by other workers from Ethiopia and Pakistan. Inappropriate and non exclusive breast feeding is also strongly associated with SAM. In the present study, only 26% children were exclusively breast-fed, 63% were mixed fed and 11% were purely bottle fed. Similar results were reported by another worker. Weaning is also a risk factor for malnutrition. Inadequate or delayed weaning as a risk was seen in our study and this was supported by other studies too where delayed and inadequate weaning was reported in 25% while higher figures (53%) were reported from India.

Frequent illness especially diarrhoea undermines children’s growth. During diarrhoea appetite is decreased along with decreased absorption of nutrients from intestine. This is added to an increased metabolic rate due to fever and all these couple to produce weight loss. In the present study 44% children had history of recurrent diarrhoea. Similar results were reported by other worker.

References


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