PATTERN OF CO-MORBIDITIES IN CHILDREN WITH SEVERE ACUTE MALNUTRITION ADMITTED IN MTC AT M.G. HOSPITAL BHILWARA, RAJASTHAN

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Abstract

Background: A round the globe nearly 20 million children below the age of five, having Severe Acute Malnutrition (SAM) and contributing to one million deaths every year in this age group. To study the pattern of co-morbidities in children having Severe Acute Malnutrition in MTC attached to a teaching hospital.

Methods: This prospective study was carried out in the MTC attached to Department of Pediatrics, M.G. Hospital Bhilwara, Rajasthan. All children between One to sixty months of age with severe acute malnutrition (SAM) admitted in the Malnutrition Treatment Centre were included. WHO criteria were followed for diagnosis and need for admissions in children suffering from severe acute malnutrition.

Results: Out of 200 children having SAM 55.00% children were having one co-morbidity, 27.00% were having two co-morbidity and 10.00% were having more than two co-morbidity.

Conclusions: It is imperative to suspect and anticipate co-morbid condition in these children. High index of suspicion for these co-morbidities is the key to reduce mortality and better outcome in children having acute severe malnutrition.

Keywords: severe acute malnutrition (SAM), malnutrition treatment corner (MTC), co-morbidity

Introduction:

A round the globe nearly 20 million children below the age of five, having Severe Acute Malnutrition (SAM) and contributing to one million deaths every year in this age group¹. According to National Family Health Survey-III, conducted during 2005-2006 in India, 6.4% of children below 60 months of age were suffering from this malady (weight-for-height less than – 3SD). With the current estimated total

population of India as 1100 million, it is expected that there would be about 132 million under-five children and amongst these about 6.4% or 8.1 million are likely to be suffering from SAM. In India more than 5 million children die every year as a direct or indirect result of malnutrition². This high mortality rate in children, especially in less developed countries like ours, with complicated SAM is because of co-morbid conditions namely infections and micronutrient deficiencies³. Anticipation and early detection of some of these

co-morbid conditions, along with preventive measures may bring down this unacceptably high mortality statistics³⁻⁵.

Due to paucity of systematic reporting of clinical and laboratory data at the time of admission or during hospital stay to identify baseline risk factors and presence of these conditions. This is not allowing doing comparative studies of the burden, spectrum and outcome of co-morbidities associated with SAM. Here we present a description of co-morbid findings in children admitted to a tertiary level hospital in central India.

METHODS

This prospective study was carried out in the MTC attached to Department of Pediatrics, M.G. Hospital Bhilwara, Rajasthan. All children

between One to sixty months of age with severe acute malnutrition (SAM) admitted in the Malnutrition Treatment Centre were included. WHO criteria were followed for diagnosis and need for admissions in children suffering from severe acute malnutrition^{6,7}. Children having obvious or suspected, congenital malformation and genetic disorder including thalassemic were excluded from this study. Complete history was obtained and general physical and systemic examination was done in each case. Demographic parameters were also noted. Apart from this clinical signs of micronutrient deficiencies were also assessed in every child. Frequencies of various co morbid conditions in study population were recorded.

RESULTS

Table 1: Socio-demographic variable of studied children

Socio-demographic variable	No of children	Percentage
Age group		
6-11 months	67	33.5%
12-35 months	101	50.5%
36-60 months	32	16.00%
Gender		
Male	136	68.00%
Female	64	32.00%

Out of 200 children having SAM 32.00% were females and 68.00%were male. Most of the children (50.5%) brought to MTC between 12-35 months in age.

Table 2: Pattern of co-morbid conditions in studied population.

Co morbid condition	Number	percentage
Acute Respiratory Infection	110	55.00%
Acute Gastrointestinal Infection	51	25.50%
Anaemia	80	40.00%
Fever	36	18.00%
Tuberculosis	6	3.00%
Skin disease	12	6.00%

In children having SAM, Anaemia, Acute respiratory infections and acute gastrointestinal infections were the most common co-morbid conditions in our study. 55.00% of children were having ARI, 40.00% of children were having Anaemia and 25.00% were suffering from gastrointestinal infections in this study group.

Table 3: Pattern Number of co-morbid conditions in studied population.

Number of co-morbid	Number	percentage
One	110	55.00%
Two	54	27.00%
More than two	20	10.00%

Out of 200 children having SAM 55.00% children were having one co-morbidity, 27.00% were having two co-morbidity and 10.00% were having more than two co-morbidity.

DISCUSSION

Mean age of children reporting with malnutrition was similar to other studies and there was no significant sex predominance in malnourished children⁷⁻⁹. Anaemia, Diarrhoea and acute respiratory infection were the three most common co-morbid diseases. Previous studies have also reported that malnourished children suffer in greater proportion from bacterial gastrointestinal and respiratory infections¹⁰. In a Colombian study, 68.4% of malnourished children were suffering from diarrhoea and 9% had sepsis at the time of admission⁹. Two African studies also showed high incidence of diarrhoea in SAM children of 49% and 67%^{11,12}. Overlapping nature of protein-energy malnutrition and micronutrient deficiencies were well understood and it is seen that lack of one micronutrient is typically associated with deficiency of others^{15,16}. Anaemia was most common micronutrient deficiencies associated with malnutrition in our study, and this is consistent with the previous reports¹⁴. The high incidence of anaemia in these children could be due to nutritional factors as well as incidental helminthic infections. Other micronutrient deficiencies seen in this study have also been previously reported with similar prevalence¹⁵.

CONCLUSION

Apart from nutritional rehabilitation, timely identification and treatment of co-morbidities like acute respiratory tract infection, diarrhoea, anemia and micronutrient deficiencies is also needed in malnourished children, so as to break under nutrition-disease cycle. High index of

suspicion and sensitization of MTC team, towards co-morbidities is of paramount importance, to decrease mortality and to improve outcome in these less blessed children.

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