



## SEVERE ACUTE MALNUTRITION: A CLINICAL PROFILE

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**KEYWORDS :** Severe Acute Malnutrition**INTRODUCTION:**

WHO (1973) defines PEM as a "range of pathological conditions arising from coincident lack, in varying proportions of protein and calories, occurring most frequently in infants and young children and commonly associated with infections". We aim to study clinical profile, risk factors and associated conditions, complications and outcome in patients with Severe Acute Malnutrition.

**MATERIALS AND METHOD:**

This was an observational cross sectional study conducted over 2 years at a tertiary care center. Patients between 6 month and 5 years of age admitted in pediatric ward satisfying the criteria for Severe Acute Malnutrition were enrolled. Patient with history of any chronic organic diseases, edema due to other non-nutritional causes and all patients of cerebral palsy were excluded from the study. Details of the patient collected from the Case Reporting Files (CRF), data was analyzed and conclusion derived.

**OBSERVATION:****Table 1: Age Distribution: (n=60)**

Age Group	No. of Patients	Percentage	Mahama saaka et al.1
6 months – 1 year	15	25.00 %	26.4%
1 year – 2 year	29	48.33 %	36.8%
> 2 years	16	26.67 %	36.8%

Of the 60 patients enrolled for the study, 73.3% were in the age group less than 2 years. This is comparable with the study by Mahama Saaka et al.<sup>1</sup> This may reflect the faulty and inadequate complementary feeding practices which will maximally affect children around 1 year of age when breast feeding may have stopped.

Weight/Height <-3SD is the most consistent finding (95%) for defining SAM in the study.

90% were having Marasmus, 10% were having Marasmic Kwashiorkor and no patient was having Kwashiorkor. This is comparable with study by Kothari et al.<sup>2</sup>

53.3% of the patients belonged to Lower socioeconomic group according to Modified Kuppuswamy classification 30% belonged to Upper lower and 16.67% belonged to Lower middle socioeconomic classification comparable to studies done by Maimuna et al<sup>3</sup> and Salman et al<sup>4</sup> where 68.1% and 60.5 % respectively, of the malnourished children belonging to Lower socioeconomic group. So socio-economical status has a direct impact on the nutritional status of the child.

In the present study average calorie deficit was found to be 38.8% and protein deficit was 27.37% of daily requirement.

Out of total 60 patients, all patients were offered breast

feeding out of which only 11.67% patients were exclusive breast fed for 6 months. The rest 88.33% were fed with inappropriate feeding practices in form of prolonged predominant breast feeding, or improper complementary feeding. Bottle feeding was also practiced in many of these.

**Table 2: Sam And Developmental Assessment**

Domain	Mean Development Quotient
Gross motor	56.67
Fine motor	73.53
Personal social	68.33
Language	72.90

Mean developmental quotient in the study was found to be 67.86. Most affected milestone was Gross motor.

**Table 3: Sam-presenting Symptoms: (n=60)**

Predominant Symptom	No. Of patients	Percentage
Fever	49	81.67 %
Respiratory Symptoms	42	70.00 %
Gastrointestinal Symptoms	36	60.00 %
Weight Loss	05	08.33 %

The most common presentation of the patients was Fever followed by Respiratory symptoms like cough, cold, breathing difficulty and ear discharge, and Gastrointestinal Symptoms like diarrhoea and vomiting.

**Table 4: Sam-presenting Signs: (n=60)**

Predominant Sign	No. Of Patients	Percentage	Maimuna et al.3
Pallor	56	93.33 %	99.00 %
Signs of micronutrient deficiency	29	48.33 %	41.00 %
Signs of Vit. A deficiency	15	25.00 %	18.00 %
Behavioral changes	42	70.00 %	-

Pallor was the most common sign noted in 93.33% of patients followed by Behavioral changes (70%). This was comparable to the study done by Maimuna et al.

**Table 5: Sam And Anemia (n=54)**

Type of Anemia	No. of Patients	Percentage	Maimuna et al.3
Isolated iron deficiency (Ferritin <16.4 ng/ml)	40	74.07 %	66.00 %
Isolated Megaloblastic (S. B12 <208 pg/ml)	08	14.81 %	-
Dimorphic (Both low)	06	11.11 %	-

74.07 % patients had isolated iron deficiency, 14.81 % patients had isolated megaloblastic and 11.11% patients had dimorphic anemia.

**Table 6: Sam-complications (n=60)**

Complication	Number of Patients	Percentage
Infection	44	73.33%
Electrolyte imbalance	11	18.33 %
Hypothermia	03	5.00 %
Hypoglycemia	01	1.67 %

Infection is the most common complication (73.33%)

**Table 7: Sam-infection (n=44)**

Infection	No. of Patients	Percentage
Gastrointestinal	20	45.45%
Respiratory	16	36.36%
Skin	01	02.27%
Urinary Tract	01	02.27%
Other	06	13.64%

Most commonly patients presents with Gastrointestinal infections.

57 patients (95%) were successfully discharged, 2 patients had taken discharged against medical advice and 1 patient expired (mortality= 1.67%).

### CONCLUSION:

Children below 2 years of age are more vulnerable to malnutrition because after breast feeding they are totally dependent on their caregiver for starting adequate complimentary feeding. Feeding practices, reflecting the cultural trends of the society of developing countries like India, where breastfeeding is accepted as the most natural way of feeding a baby, such poor indicators as noted in the study highlight the need to reinforce the proper concept of breastfeeding and complementary feeding. Socioeconomic status has a direct impact on the nutritional status of the child. Due to lack of resources and low literacy status of the parents especially mother, parents are not able to give adequate food and care to their child which have a long lasting effect on their health status. Overcrowding, poor sanitation, lack of safe drinking water facilities are the contributing factors. Incidence of Calorie deficient PEM is much more than protein deficient PEM. Patients with SAM show a significant developmental impairment especially in gross motor and behavioral scales due to various deficiencies. Anemia is universal finding in patient with SAM. Signs of micronutrients deficiency and edema are frequently noted. Iron deficiency is the most common cause of anemia seen in patients with SAM. Megaloblastic and Dimorphic Anemia are also seen occasionally. Most of the patients of SAM presents with infections which depicts increased susceptibility of poorly nourished child to infections. Response and outcome of the patient is generally satisfactory with timely and protocol based management.

### REFERENCES:

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