

Original Research Article

TO STUDY RISK FACTOR AND CLINICAL PROFILE OF SEVERE MALNUTRITION IN CHILDREN BELOW 6 MONTHS OF AGE

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Abstract- BACKGROUND: Data on potentially modifiable risk factors and clinical profile of severe malnutrition for infants under 6 months of age (U6M) are needed. This is vital to design and develop better future interventions. Our study aims at identifying these risk factors and clinical profile. **MATERIAL AND METHODS:** Prospective Observational study was undertaken on 88 infants U6M, who attended the Inpatient and OPD for a period of 1 year. Study was done to identify risk factors and clinical profile. **RESULTS:** Among 88 children enrolled in the study, most babies who developed Severe Malnutrition were term babies (86.4%) with birth weight 2-2.5 kg (43.2%). Majority (40%) were among 2-3 months of age. More (63.6%) were females. Approximately 56.8% were born to young mothers (21-23 years), uneducated and house wives. **CONCLUSION:** Risk factors like young maternal age, low level of education among mothers, low socio-economic status of family was contributory factors. But other factors like family size, birth order of infant, duration of breast feeding, feeding of top milk like cow or buffalo milk, mix feeding, mode of feeding, impact of NRC registration also have a significant impact on severe malnutrition in infants U6M. Further, Lack of exclusive breast feeding is also one of the perceived risk factors for severe malnutrition in infants u6m. Concerned health programs must include maternal education and knowledge about infant feeding practices as a major agenda.

Key words-malnutrition, U6M, top milk, LRTI, sepsis

1. INTRODUCTION

Clinical assessment is generally considered to be subjective, difficult to standardize and difficult to express quantitatively. More nuanced assessment of infant feeding and maternal health is often subjective but can be useful, and indeed may be critical, in prescribing possible interventions for SAM rather than just detecting it.

We designed our study to firstly identify a wide variety of biologically plausible risk factors associated with Severe acute malnutrition in infants U6M and, secondly, to describe the clinical profile of such infants, thus preventing and managing malnutrition in infants under 6

months of age. The data on Early identification of SAM in infants U6M of age are essentially needed for assessment and management approaches in the immediate/short term and shape intervention studies in the medium term. The long-term goal is to ensure effective, evidence-based treatment of acutely malnourished and at-risk infants U6M.

This study highlights the need for good quality interventional research on Severe Acute Malnutrition in infants U6M while identifying avenues with potential scopes for future research in this context. Our results will help design such studies, focus resources and maximise chances of successful identification and management of nutritionally vulnerable infants U6M.

AIMS AND OBJECTIVES

To determine risk factors and clinical profile of severe malnutrition in infants under 6 months of age

2. MATERIAL AND METHODS

Prospective Observational study was undertaken on 88 Children in the age group of 1 month to 6 months, who attended the Inpatient and Outpatient OPD of Department of Paediatrics, MGM Medical College Indore and associated Maharaja Yashwant Rao Hospital (M.Y.H.) and Chacha Nehru Bal Chikitsalaya (CNBC) and qualified the inclusion criteria. The study was conducted for a period of 1 year. A written consent was obtained from the parents of the subjects included.

A detailed anthropometric analysis was done of the patient along with analysis of associated risk factors and comorbidities in turn leading to complete clinical profile.

INCLUSION CRITERIA

- Under 6 months infants falling under severe malnutrition – defined as:
 - Weight-for-age <3 SD (severely underweight) and/or
 - Weight-for-length <3 SD (For infants with length >49cm) and/or
 - Presence of bilateral pitting edema
- Under 6 months infants whose Parents gave written informed consent.

EXCLUSION CRITERIA

- Patients who fell outside the age range of 1 month to 6 months.
- Parents were not willing to give written informed consent.

3. RESULTS

In our study we found that 39.8% of infants belong to 2-3 months of age , followed by 34.1% who were of the age below 2 months.

Majority of infants were females (63.6%).

The highest percentage of mothers (56.8%) were of age between 21-23 years followed by 25% of mothers with age 20 years or below while, the least i.e. 18.2% were of age group 24-28 years.

The highest percentage of mothers were house wives (90.9%).

The highest percentage of mothers were educated upto primary school (54.5%) followed by (38.6%) of mothers who had no formal education.

The highest percentage of mothers (64.8%) were not even aware that their child is malnourished. Though 73.8% of mothers were aware of the fact that their child might not be getting enough of the breast milk.

Majority of infants were not exclusively breast fed (80.7%). They were mostly given top feed along with poor feeding practices like diluted milk , bottle feeding , etc.

The main presenting features for such infants to us were cough , diarrhoea , fever and sepsis and that also mostly seen in the top fed group.

TABLE 1: Distribution Based on Mother’s Awareness About Child Malnourished Status

Are You aware that your child is Malnourished	Frequency	Percent
Yes	31	35.2
No	57	64.8
Total	88	100.0

The highest percentage of respondents i.e.,64.8% had No awareness about their child malnourished condition and only 35.2% mothers were aware that her child is malnourished.

TABLE 2: Distribution Based on Mother’s Awareness whether Child Gets Not Enough Breast Milk

Not Enough Breast Milk	Frequency	Percent
No	23	26.2%
Yes	65	73.8%
Total	88	100.0

The higher percentage of respondents i.e., 73.8% had view that their children were not having enough breast milk and only 26.2% mothers were of the view that her child is getting enough breast milk.

TABLE 3: Association between Feeding Type & Diarrhea as a presenting Symptom

DIARRHOEA		Feeding Type			Total
		Exclusive Breast Feeding	Mix Feed	Only Top Feeding	
No	Count	11	7	6	24
	%	64.7%	36.8%	11.5%	27.3%
Yes	Count	6	12	46	64
	%	35.3%	63.2%	88.5%	72.7%
		Count	17	19	52
		%	100.0%	100.0%	100.0%
Pearson Chi-Square		Value	Df	P Value	Result
		19.377a	2	0.000	Significant

Table 3 shows p value less than 0.05 which signifies increased frequency of Diarrhea being presenting symptom in infants fed with top milk only (88.5%). Also, it is a common presenting symptom of such infants with severe malnutrition U6M.

4. DISCUSSION

In our study, 88 infants U6M were enrolled who fulfilled the inclusion criteria and had severe malnutrition according to WHO criteria for severe malnutrition in infants under 6 months of age.

Of the total 88 infants enrolled in the study, data was analysed for identifying risk factors and clinical profile among these infants who suffered from severe malnutrition.

Singh D, et al. (2014)¹, studied the outcome of 108 infants < 6 months of age with severe acute malnutrition (SAM) admitted in the Nutritional Rehabilitation Centres (NRC) at a teaching hospital. The most common symptom that the children presented with, was acute diarrhoea (35.2 %) followed by failure to gain weight (26.9 %) which was comparable to what we found in our study.

Among various symptoms, cough and diarrhoea were most commonly encountered in infants with severe malnutrition specially those receiving top feed and mix feed. The result of our study was comparable to study done by Maria BR et al⁴.

D Suman et al (2017)², did an observational prospective hospital-based study in which all children under-5 years admitted in NRC over a period from January 2013-December 2016 were enrolled. Results showed that Mean age of admitted children was 17.21±13.94 months and mostly belonged to lower socio-economic scale, rural areas and large families. 9.2% were less than 6 months at time of admission. Most common associated infections were acute respiratory tract infections (35.87%), and diarrhoea (31.75%). Anaemia was an important co-morbidity (74.12%). Mean duration of exclusive breastfeeding was 3.1± 1.8 months. Most commonly used supplementary food was over diluted cow milk (92%). The results were comparable to what we found in our study.

M. Munirul Islam et al (2018) ³ did a prospective cohort study on infants u6m in Barisal district, Bangladesh to identify risk factors for infant u6m SAM and describe the clinical and anthropometric outcomes of treatment with current management strategies. The study showed current treatment strategies have limited practical effectiveness; poor uptake of inpatient referral being the main reason. Breastfeeding support is likely central to future treatment strategies but may be insufficient alone.

In India, in 2014 new guidelines have included infants under 6 months of age under the management of severe malnutrition, so very less is known regarding risk factors, co morbidities and outcomes of these children¹.

In our study, we found factors like low maternal age, low socio-economic status of family, larger family size, education status of mother had a significant impact on severe malnutrition in infants U6M. Factors like low birth weight, higher birth order, lack of exclusive breast feeding, duration of breast feeding, choice of milk and mode of feeding like bottle feeding had significant correlation with infant landing up into severe malnutrition U6M.

One of the key aspects of our study was to assess the level of awareness of mothers regarding breast feeding practices and importance of breast milk. There was a significant lack of knowledge and awareness among mothers of enrolled subjects in the study regarding malnourished status of their child and whether they were feeding their child with adequate breast milk or not which again signifies that root of malnutrition in infants U6M actually lies in their mothers in a large number of cases.

Among different clinical symptoms at presentation, coughing and diarrhoea were most common.

Most common clinical conditions in our patient population that we found were associated with severe malnutrition in infants U6M were recurrent LRTI and Sepsis. We also encountered few cases of congenital heart disease and syndromic babies.

5. CONCLUSIONS

Our results highlight the need to consider maternal risk factors while evaluating potentially at-risk infants. Mother's education, her awareness about infant feeding practices stands at the root cause for severe malnutrition in such infants and should be targeted in public health programs to curb this problem.

A key message arising from our results is that programs treating Severe Malnutrition among infants U6M essentially need to include maternal education and knowledge about infant feeding practices apart from promoting breast feeding.

Lack of exclusive breast feeding is also one of the perceived risk factors for severe malnutrition in infants u6m.

We identified a range of risk factors that need to be addressed for intervention success. Adverse effects of top feeding, especially animal milk is significantly contributing to severe malnutrition in infants u6m.

Although the well-being and caregiving role of the mother is central, programs must also engage with father and other family members. They can provide valuable support and empower her to best respond to her infants' situation. As regards operational research, more information is needed on the design, effectiveness, and cost of breast-feeding promotion in developing countries.

6. REFERENCES

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