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TO EVALUATE THE CLINICO-ETIOLOGICAL PROFILE OF CHILDREN LESS THAN 6 MONTH OF AGE WITH SEVERE ACUTE MALNUTRITION

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ABSTRACT **Background:** Although SAM is more common in age group of 6-24months but malnutrition do occurr before 6 months of age and is associated with high morbidity and mortality. Various Nutrition programs and surveys have traditionally excluded infants under 6 months of age because adequate nutrition is assumed to be ensured by breastfeeding. This study was conducted to evaluate clinico-etiological profile of children less than 6 months of age with SAM. **Methodology:** A hospital based prospective study conducted on infants in the age group of 1-6 months with SAM admitted at MTC of Balchikitsalaya, MBGH, RNT Medical College, Udaipur, Rajasthan during last one year. **Result:** The study consisted of 100 infants. The mean age of infants was 2.56±1.3 months. Males were 67% and 33% females. As per various criterias of SAM, 80% fulfilled weight for length and 73% fulfilled visible wasting criteria while 1 child was edematous. 34% of mothers were malnourished and 9% mothers were severely malnourished. The common reasons of non-breastfed and partial breast fed in this study was low milk output/ misconception of insufficient milk (38.5%), infants illness (35%) and breast problem (9%), (17.5%) infants were mother-less and we found this problem more in primipara mothers. Risk of diarrhea was higher and statistically significant in partially breastfed and non- exclusive breast fed as (38%) as compared to exclusive breast fed (6%) (P <0.001). **Conclusion:** Maximum number of infants were SAM in 1- <2 months of age group in this study, which could be because of low birth weight and prematurity, but after birth, faulty feeding due to misconception of low milk output and infant illness are the major factor for their malnutrition.

KEYWORDS : SAM less than 6 months, low milk output

INTRODUCTION:

Early infancy represents a period of transition from neonatal life to childhood during which there is rapid growth, neurological and immunologic development, and changes in the mode of feeding. During no other period in life development, maturation, and growth occur with such velocity and intensity as in the first 6 months.[1]

Neurodevelopment in young infancy is especially sensitive to undernutrition.[2] Severe malnutrition will affect an infant's future physical, social, and mental development.[3] This problem has been largely neglected by clinicians and researchers, on the assumption that infants aged <6 months are predominantly breastfed and thus relatively protected against SAM.

Nutrition programs and surveys have traditionally excluded infants under 6 months of age because adequate nutrition is assumed to be ensured by breastfeeding.[4]

However, there is increasing recognition that malnutrition occurs before age of 6 months and is associated with high morbidity and mortality.[5] There have been several recent encouraging policy developments, most importantly, 2013 World Health Organization (WHO) guidelines on SAM not only include a chapter on infants under 6 month for the first time but also outline management options for this age group.[6]

In addition to etiologies such as low birth weight, persistent diarrhea and recurring sepsis or chronic underlying diseases or disability, the development of severe acute malnutrition in this age group commonly reflects suboptimal feeding practices, especially breastfeeding practices and according to NFHS-4, children born to thin mother (BMI <18.5kg\m2) are more likely to be malnourished than children born to mother with normal BMI.[7]

Need for study: Our hospital has Malnutrition treatment center at Balchikitsalaya, where we skillfully managing children >6 month with severe acute malnutrition whereas the SAM cases <6 month many a times are being managed in SNCU because of their associated complications like hypothermia, hypoglycemia and sepsis.

This part of Rajasthan being in tribal belt, majority of the pregnant women suffer from malnutrition and anemia. This then leads to high prevalence of low birth weight mostly, IUGR or premature babies. If adequate feeding practices are not followed, this IUGR baby will present to us as SAM child in his early childhood.

MATERIALS AND METHODS

A hospital based prospective study conducted at Malnutrition Treatment Centre at Balchikitsalaya of MBGH, RNT Medical College, Udaipur, Rajasthan during last one year. Ethical clearance was taken from Institutional Ethics Committee.

INCLUSION CRITERIA:-

All infants in the age group of 1mo-6mo and length >49cm with complications admitted in Balchikitsalaya, meeting the following criteria and consenting to be a part of the study:

Weight for length (W/L) <-3 SD and/or
Visible severe Wasting* and/ or
B/L pedal Edema
*for children with <49cm, visible severe wasting present.

EXCLUSION CRITERIA:-

Infants less than 1 month of Age and Parents not consenting .

Data Analysis:-

All the collected data was managed and analyzed with standard software of Biostatics (SPSS Version 20). Statistical analysis of the data was done using appropriate test with significance p<0.05.

RESULTS:

Out of total 100 patients enrolled in this study, 67% were males and 33% females. The mean age of children was 2.56 ± 1.3 months. Maximum number of children (41%) were in the group of 1- <2 month. The baseline characteristics of children taken in the study and possible clinico-etiological factors affecting their growth are shown in Table

Table 1: Baseline characteristics of children (n=100)

Characteristic	Variables	Number (%)
Age	1-<2 months	41 (41%)
	2-<4 months	33 (33%)
	4-<6 months	26 (26%)
Gender	Male	67 (67%)
	Female	33 (33%)

Basis of SAM criteria	Weight for length <-3 SD Visible wasting Edema	80 (80%) 73 (73%) 1 (1%)
Birth weight	<2.5 Kg (LBW) >2.5 Kg (Non LBW) Unknown	52 (52%) 46 (46%) 2 (2%)
Gestational age	Preterm Term	52 (52%) 48 (48%)
Maternal BMI	Underweight Normal Overweight Obese Motherless or mother wasn't caregiver	34 (34%) 55 (55%) 1 (1%) 0 (0%) 10 (10%)
Mode of feeding before admission	Breast feeding BF + Bottle feeding Bottle feeding Katori spoon feeding	43 (43%) 23 (23%) 26 (26%) 8 (8%)
Type of milk feeding	Breast feeding Cow milk Goat milk Formula feeding	43 (43%) 32 (32%) 22 (22%) 3 (3%)
Reason for non-breastfed and partial breastfed	Low milk output/ misconception of insufficient milk Infant illness Motherless Breast related problems	22 (38.5%) 20 (35%) 10 (17.5%) 5 (9%)
Common presenting complains	Diarrhea & vomiting Fever & cough Refusal to feed Not gaining weight	45 (45%) 28 (28%) 15 (15%) 8 (8%)

Table 2: Distribution of children according to breastfeeding

	Exclusive breastfeeding infants (n=43)		Non-exclusive breastfeeding infants (n=57)		P-value
Diarrhea	6	13.95%	38	66.67%	<0.001
Clinical sepsis	11	25.58%	28	49.12%	<0.01
Anemia	24	55.81%	40	70.18%	>0.05

Table 2 compares incidence of various common illnesses in exclusive and non-exclusive breastfed infants.

Table 3: Distribution of children according to pattern of morbidity

Diagnosis (Co-morbidity)	No. of children
Severe dehydration	39
Severe anemia	22
Pneumonia	23
Hypoglycemia	20
Septicemia	15
Malaria	3
Acute kidney injury	27
Tuberculosis	2
Meningitis	2

Table 3: shows various co-morbidities with which patients enrolled in this study were admitted to the hospital.

DISCUSSION:

Malnutrition is a nutritional problem that results from varying proportion of protein and calories deficiency in infant and young children and is a complicating factor for other illnesses in developing countries.[8]

The mean age of children was 2.56+1.3 months. Maximum number of children (41%) were in the group of 1-<2 month. Out of total 67% were males and 33% females. In present study, more number of male infants were affected may be explained by the higher rates of seeking medical attention by parents in male infants due to prevailing gender bias in society.

Similar study conducted by Ali, HF et al.9 stated that majority (76, 91.6%) of malnourished infants were 4-6 months of age with a mean ± SD age of 3.8±5.8 months. Males (56.6%) outnumbered females (43.4%).

In this study, 34% of mothers were malnourished (BMI <18.5kg/m2) and 9% mothers were severely malnourished (BMI<16.0kg/m2). Maternal malnutrition increases the risk of poor pregnancy outcome including obstructed labor, premature or low birth weight babies and postpartum hemorrhage.

At the time of enrolment only 43% infants were on exclusive breast feeding, rest were of partially breast feeding (23%) and not breast feeding (34%) The risk of diarrhea was higher and statistically significant in partially breastfed and non- exclusive breast fed as (38%) compared to exclusive breast fed (6%) (P <0.001). Sharma, R et al.10 in their study stated the risk for acute gastroenteritis was higher and statistically significant in both the partially breastfed (36.8%) and in the non- exclusively breast fed (36.8%) as compared to exclusive breast fed (5.3%, p <0.05).

In this study most common reason of non-breastfed and partial breast fed mother was low milk output/ misconception of insufficient milk (38.5%), infants illness (35%), breast problem (9%), 17.5% infants were motherless and we found this problem more in primipara mothers. Possible reasons for suboptimal breastfeeding were primarily, lack of proper information to mother and total lack of counseling on feeding of infant. Mehta, A et al.11 in their study found that mother's misconception of insufficient milk" was the commonest cause of lactation failure, followed by illness in infants (31.26%) and breast problems (12.5%).

Common clinical presentations at admission were diarrhea, vomiting (45%), cough (28%), refusal to feed (15%) and not gaining weight (8%). Singh, DK et al.12 found in their study the most common presenting complaint was acute diarrhea (23%), followed by failure to gain weight (15%) that was comparable to our study.

CONCLUSION:

The severe acute malnutrition under 6 months is noted at early months of infancy because of large pool of LBW infants and this is because of misconception of low milk output which leads to faulty feeding and infant illness.

RECOMMENDATION:

All pregnant mothers should be counseled during antenatal period regarding their malnutrition and all LBW and preterm infants should be followed up regularly to identify early SAM.

REFERENCES:

1. Kerac M, McGrath M, Grijalva-Eternod C, Bizouerne C, Saxton J, Bailey H, et al; Management of Acute Malnutrition in Infants (MAMI) Project. Technical review: current evidence, policies, practices and program outcomes 2009.
2. Grantham-McGregor S, Baker-Henningham H. Review of the evidence linking protein and energy to mental development. Public Health Nutr 2005; 8:1191-201.
3. Walker S, Wachs TD, Gardner JM, Lozoff B, Wassermann GA, Pollitt E, et al. Child development in developing countries, 2: risk factors for adverse outcomes in developing countries. Lancet 2007; 369: 145-57.
4. Black RE, Allen LH, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, et al., Maternal and Child Undernutrition Study Group. Maternal and child undernutrition: global and regional exposure and health consequences. Lancet 2008; 371:243-60.
5. Vygen SB, Roberfroid D, Captier V, Kolsteren P. Treatment of severe acute malnutrition in infants <6 months in Niger. J Pediatr. 2012; 162(3):515-21.
6. World Health Organization (WHO). Updates on the management of severe acute malnutrition in infants and children (guideline); 2013.
7. NFHS-4. National Family Health Survey 2015-2016. International Institute for Population Sciences Mumbai. Pp 291-296.
8. Mubarak A, Atta-ullah M, Abid H. Acute hypokalemic flaccid paralysis in malnourished children.Pak Paed J. 2003; 27(4): 166-17.
9. Hajer Fadlalla Ali, Ali Arabi and Jalal. Feeding Pattern of Malnourished Infants <6 months of age and Their Response to Treatment Using Diluted F- 100 Formula. Nursing and Health 4(1): 9-13, 2016.
10. Rakesh Sharma, Arvind Sood, Priyanka Nair. Infant feeding practices and risk of occurrence of diarrheal and respiratory infections in infancy. Int J Contemp Pediatr. 2017 Sep;4(5):1717-1720.
11. Mehta A, Rathi AK, Kushwaha KP, Singh A. Relactation in lactation failure and low milk supply. Sudan J Paed. 2018;18(1):39–47.
12. DK Singh, Ruchi Rai And Shashi Dubey. Supplementary Suckling Technique for Relactation in Infants With Severe Acute Malnutrition. Indian Pediatr 2014;51:671.