



STUDY OF RISK FACTORS OF SEVERE ACUTE MALNUTRITION IN ADMITTED PEDIATRIC PATIENTS

Dr Harsha Makwana

Senior Resident , Pediatric Department , Amc Met Medical College L.g.hospital , Ahmedabad.

Dr Namrata Gadhvi*

Junior resident , pediatric department , amc met medical college l.g.hospital , ahmedabad. *Corresponding Author

Dr Akshay Patel

Junior resident , pediatric department , amc met medical college l.g.hospital , ahmedabad.

ABSTRACT

Background: Nearly 80 million children i.e, 65% children under 5years of age suffers from varying degree of malnutrition. Severe Acute Malnutrition (SAM) increases childhood morbidity , mortality and can lead to poor cognitive development. Total growth & development of children is influenced by various environmental, socioeconomic & nutritional factors.

OBJECTIVES : This study was conducted to assess various risk factors associated with SAM.

MATERIALS AND METHODS: fifty infants and children aged between 6months to 5 years were included in this prospective observational study who were admitted in pediatric ward of tertiary care hospital with SAM. With consent of parents prior to interview by explaining them objectives of study. Proper history regarding all risk factors was taken properly and entered in preformed proforma. Than those data were compiled and analysed.

RESULT : SAM was more commonly seen in patients having : age group of 6 months to 2 years , female gender, improper hand washing practice , immunizations unavailability of exclusive breast feeding , lower education of mother , poor housing condition , improper complementary feeding practices , higher birth order.

CONCLUSION: exclusive breast feeding , proper complementary feeding practices, proper birth spacing and family planning , improving sanitation and female education are some of the modifiable risk factors which can be reduce occurrences of SAM.

KEYWORDS : severe acute malnutrition , immunization

INTRODUCTION

Severe acute malnutrition is defined as severe wasting and/or bilateral edema. Severe wasting is extreme thinness diagnosed by a weight for length/height below -3 SD of the WHO Child Growth Standards. In children ages 6-59 months, a mid upper arm circumference <115mm also denotes extreme thinness: a color banded tape is a convenient way of screening children in need of treatment (1). Bilateral edema is diagnosed by grasping both feet, placing a thumb on top of each, and pressing gently but firmly for 10 seconds. A pit (dent) remaining under each thumb indicates bilateral edema. The previous name protein-energy malnutrition is avoided, as it oversimplifies the complex multi deficiency etiology. Children with severe acute malnutrition have had a diet insufficient in energy and nutrients relative to their needs. The magnitude of the deficits will differ depending on the duration of inadequacy, quantity and diversity of food consumed, presence of antinutrients (such as phytate), individual variation in requirements, and number and severity of coexisting infections and their duration. The most profound consequence of undernutrition is premature death. Fetal growth restriction together with suboptimal breast-feeding in the first month of life contribute to 19% of all deaths in children <5 yr (1.3 million deaths/yr). Undernutrition impairs immune function and other host defenses, consequently childhood infections are more severe and longer lasting in undernourished children and more likely to be fatal compared with the same illnesses in well-nourished children. Even for the survivors, physical and cognitive damage as a result of undernutrition can impact their future health and economic well-being. For girls, the cycle of undernutrition is passed on to the next generation when undernourished women give birth to LBW babies. The risk is exacerbated by low weight gain during the first 2 yr of life.

To reduce the adverse consequences of undernutrition on mortality, morbidity, and cognitive development, interventions

must encompass both fetal and postnatal periods. Preventing LBW is essential, with emphasis on prevention of low maternal BMI and anemia, and in the longer term, prevention of low maternal stature. Other measures include smoking cessation, birth spacing, delaying pregnancy until after 18 yr of age (2). In the postnatal period, promotion and support of exclusive breastfeeding is a high priority. Interventions to improve infant feeding must be designed for the local setting and thus require careful formative research during their development. Messages should be few in number, feasible, and culturally appropriate. For complementary feeding, nutrient-rich, energy dense mixtures of foods, and responsive feeding, are often emphasized. Where adequate complementary feeding is difficult to achieve and subclinical deficiencies are common, high-dose vitamin A supplementation every 6 month in children <5 year of age can reduce child mortality by 5-15% and zinc supplementation can reduce 1-4 year mortality by 18%, diarrhea incidence by 13%, and pneumonia incidence by 19%. Monitoring of child growth provides an early alert to a nutrition or health problem but is only worthwhile if accompanied by good counseling and growth promotion activities. The impact of growth monitoring and promotion will be related to coverage, intensity of contact, health worker performance and communications skills, adequacy of resources, and the motivation and ability of families to follow agreed actions.

MATERIALS AND METHODS

The proposed study is prospective observational study consisting of infants and children aged between 6months and 5years conducted at tertiary care centre of a teaching hospital over period from 1st February 2019 to 30th April 2019. Total of fifty infants and children were included who were admitted in hospital with SAM fulfilling all the criteria mentioned in the definition of severe acute malnutrition. With consent of parents prior to interview by explaining them objectives of study. Proper history regarding all risk factors was taken properly and entered in preformed proforma which includes Name

,age ,gender of patient , birth history , family history includes parents age , birth spacing , immunization history , housing condition, economic status of family , diet history , sanitation. Than those data were compiled and analysed.

RESULT

- In the present study fifty patients were enrolled over period from 1st February 2019 to 30th April 2019. With consent of parents data was collected in preformed proforma showing out of 50 patients enrolled in study 32 (62%) were females and rest 18 (38%) were males. Female patients were more compared to male with ratio of 1.7:1.
- There were 25 patients (50%)with SAM between age of 6months and 12 months.14 patients(28%) were between 12months and 24months. 11 patients (22%) were above 24 months of age.
- Out of fifty only 10 (20%) enrolled patients were have proper hand washing practice.
- There were 32 patients (64%) with SAM were unvaccinated and 18 (36%) were vaccinated from enrolled patients.
- Out of fifty enrolled patients 34 (68%) children were not provided with exclusive breastfeeding. Only 16 (32%) were provided exclusive breastfeeding.
- Out of fifty patients 17 mothers were illiterate, 10 were having primary education, 10 were having secondary education, 8 had completed their school education and only 5 were graduated.

(TABLE 1)

TABLE 1: MATERNAL LITERACY

EDUCATION	NUMBER OF PATIENT	%
ILLITERATE	17	8.5
PRIMARY	10	5
SECONDARY	10	5
HIGHER SECONDARY	8	4
GRADUATE	5	2.5

- There were 33 (66%) living in kachha house and 17 (34%) living in pakka house.
- Out of fifty patients 36 were addressed to improper feeding practices and 14 were introduced with proper weaning / complementary feeding practices.
- Out of fifty patients enrolled 37 (74%) were of higher birth order and 13 (26%) were of 1st two children.
- Out of fifty patients 35 were born with improper birth spacing for like less than 2years and 15 were born with proper birth spacing like more than 2years.

DISCUSSION

The greatest risk of undernutrition (underweight, stunting, wasting, and micronutrient deficiencies) occurs in the first 1000 days, from conception to 24 months of age, and this early damage to growth and development can have adverse consequences in later life on health, intellectual ability, school achievement, work productivity, and earnings.

Severe acute malnutrition (SAM) is defined as severe wasting and/or bilateral oedema. Severe wasting is extreme thinness diagnosed by a weight-for-length (or height) below -3 SD of the WHO Child Growth Standards. In children ages 6-59 months, a mid-upper arm circumference <115 mm is also a convenient way of screening children in need of treatment.

Undernutrition can have substantial economic consequences for survivors and their families. The consequences can be quantified in 5 categories: increased costs of healthcare, either neonatal care for LBW babies or treatment of illness for infants and young children; productivity losses (and hence reduced earnings) associated with smaller stature and muscle mass; productivity losses from reduced cognitive ability and poorer school performance; increased costs of

chronic diseases associated with fatal and early child malnutrition; and consequences of maternal undernutrition on future generations. The impact of nutrition on earnings appears to be independent of the effects of childhood deprivation (3).

In this study we have enrolled 50 patients age between 6months and 5years who were comes under the definition of SAM and with consent of parents we took history of patient 's birth , family , housing , vaccination, economic, birth spacing, sanitation history and compiled all the data and analysed that : out of 50 patients females were more than males with female to males ratio 1.7:1. Most of the patients were between the age of 6months and 2years (4). Amongst only 68% were provided with exclusive breast feeding and 32% were on improper feeding or on mixed feeding. Amongst 50 patients 70% patients were receiving improper feeding or lack of complementary feeding. 32 patients out of 50 were unvaccinated or partially vaccinated. Out of 50 patients 80% were having improper sanitation , and 66% having kachha house with only 5% mother were graduated. Amongst 50 patients 74% were having higher birth order (overcrowding) and 54% were having birth spacing of less than 2years. Therefore SAM was more commonly seen in patients having :

- Female gender
- Age group of 6months and 2years
- Improper hand washing practice
- Improper immunization
- Improper breast feeding and complementary feeding practices
- Lower education of mothers
- Poor housing conditions
- Higher birth order like 3 or more and birth spacing like less than 2years.

CONCLUSION

Exclusive breast feeding , timely initiation of complementary feeding , proper immunization , family planning , proper and improved sanitation and female education are some of the modifiable risk factors which can reduce occurrence of SAM.

REFERENCES

1. Ashworth, A., & World Health Organization (Eds.). (2003). Guidelines for the inpatient treatment of severely malnourished children. World Health Organization.
2. Mishra, K., Kumar, P, Basu, S., Rai, K., & Aneja, S. (2014). Risk factors for severe acute malnutrition in children below 5 y of age in india: A case-control study. The Indian Journal of Pediatrics, 81(8), 762-765. <https://doi.org/10.1007/s12098-013-1127-3>
3. Sakisaka K, Wakai S, Kuroiwa C. Nutritional status and associated factors in children aged 0-23 months in Granada, Nicaragua. Public Health. 2006;120(5):400-11.
4. Elizabeth KE. Changing profile of undernutrition and edematous severe acute malnutrition (ESAM). Indian Pediatr. 2012;49:843.