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RESEARCH ARTICLE

TO ASSESS THE EPIDEMIOLOGICAL RISK FACTORS AND FEEDING PRACTICES IN SAM CHILDREN OF GORAKHPUR AREA.

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Abstract

Objective:- SAM contributes to 1 million child death every year so a study is planned to assess the epidemiological risk factors and feeding practices in SAM children of Gorakhpur area.

Methodology:- A observational study was done on total 140 SAM patients on OPD and hospitalised children in time duration of one year to assess risk factors and feeding practices in form of breast feeding and complimentary feeding practices and socioeconomic status and education status of mothers.

Results:- Maximum number of SAM children were from lower class (V) of society that is 59.1%. Out of 137 patients 70% patients started breast feeding at the time of birth but only 56.2% were on exclusive breast feeding up to 6 month, 79.5% continued breast feeding up to 1 year and 52.5% continued breast feeding up to 2 years. Introduction of semi solid food is maximum between age groups 10 to 12 months that is 54% of total patients and only 14.3% children started at the age of 6 month. Approximately half of SAM children (50.3%) presented with associated acute diarrheal disease, 6.5% SAM children had respiratory tract infections, 5.1% had urinary tract infections and skin infections.

Conclusion:- In our study we found that most of SAM children were started breast feeding at birth but only half of them continued exclusive breast feeding for 6 months. So lack of exclusive breast feeding and delayed introduction of complimentary feeding are measure risk factors in SAM children along with lower socioeconomic status, lower educational status of mother and associated co-morbid conditions like diarrhoea, RTI, UTI and skin infections.

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Introduction:-

SAM contributes to 1 million child deaths every year¹. According to NFHS-III during 2005-2006 in India, Indian data for under-nutrition, wasting and stunting is that there are about 132 million under-five children and amongst them 8.1 million are suffering from severe malnutrition. Infants and young children are the most vulnerable as they require extra nutrition for growth and development. Poor feeding practices, such as inadequate breastfeeding, offering the wrong foods, and not ensuring that the child gets enough nutritious food, contribute to malnutrition. Infection – particularly frequent or persistent diarrhoea, pneumonia, measles and malaria – also undermines a child's nutritional status. Malnutrition can be classified as over- and under-nutrition. When food required for growth and development is lacking, the consequence is under-nutrition, which refers to a condition resulting from either micronutrient or macronutrient deficiencies, or from both. Under-nutrition is further categorized as micronutrient deficiencies, wasting, stunting and being underweight. SAM is defined by a very low weight for height (below -3 z

scores of the median WHO growth standards) , by visible severe wasting, or by the presence of nutritional oedema. In children aged 6-59 months, mid upper arm circumference less than 115 mm is also indicative of severe acute malnutrition.

Classification:-

WHO classification of malnutrition.

	Moderate malnutrition	Severe malnutrition
Symmetrical edema	No	Yes (edematous malnutrition)
Weight-for –height	SD score between -2 to -3	SD score between <-3 (severe wasting)
Height –for –age	SD score between -2 to-3	SD score <-3 (severe stunting)

Material & method:-

The present study was carried out in the NRC of department of Pediatrics, B.R.D. Medical College, Gorakhpur. The period of study was from July 2012 to September 2013. A total of 140 patients were included in our study. All malnourished children between the age group of 6 months to 5 years presented in pediatric OPD and/or admitted in pediatric ward. **Inclusion Criteria-** All SAM children (6 month to 5 years) presented in pediatric OPD or admitted in pediatric ward of Nehru hospital, BRD Medical College, Gorakhpur, were included in study. **Exclusion Criteria-** Infants <6 months, Cerebral palsy, CHD, Hemolytic anemia, Malignancy, Metabolic disorder, Malabsorption syndrome, Chromosomal disorder, CRF, Hepatic disorder, HIV.

Study Procedure:- All malnourished children were assessed and only SAM children were included in study. Excluded children were managed according to their diagnosis & co-morbid conditions. A detailed history was taken from each SAM child including breastfeeding, dietary history, recent changes in feeding habits & history regarding associated complications on predefined proforma. A detailed general and physical examination & anthropometry was taken on predefined proforma .The study was approved by Institutional Ethical Committee, B.R.D. Medical college, Gorakhpur. Written Consent was taken from patient's parent by explaining them nature and purpose of study in their language. **P value <0.05** was taken as significant, $p < 0.01$ denotes the test is highly significant, and $p < 0.0001$ denotes test is most significant. **Confidence interval** was taken as 95%.

Results:-

The sample size for study is calculated as 140. The total sample for study will be 140. After excluding defaulters, 137 patients remained in study. A total of 137 SAM children maximum number of children in study were between 13 to 36 months of age (70.06%) of which 85(62%) were male and 52(37.9%) were females. Maximum number of SAM children were from lower class (V) of society (59.1%) and Most of SAM children were having un-educated mother (68.61%). Among 137 children 64.2% are between z score -3 to -4. Out of 137 patients 70% patients started breast feeding at the time of birth, 56.2% were on exclusive breast feeding up to 6 month, 79.5% continued breast feeding up to 1 year and 52.5% continued breast feeding up to 2 year. Introduction of semi solid food is maximum between age groups 10 to 12 months(54%) only 14.5% started complimentary feeding at age of 6 months. Approximately half of SAM children (50.3%) presented with associated acute diarrheal disease. 6.5% SAM children had respiratory tract infections, 5.1% had urinary tract infections and skin infections.

Discussion:-

Inappropriate infant and young child-feeding practices (breastfeeding and complementary feeding) have been identified as a major cause of malnutrition along with lower socioeconomic status, uneducated mother and co-morbid conditions.

Gopujkar et al² showed that the practice of not putting the infant to breast within first 24 hours widely prevalent in cities like Kolkata(47.6%) & Chennai(23.8%) but less in Mumbai(3.4%). Out of 137 patients 56% patients were on Exclusive breast feeding up to 6 month which is slightly higher than the NFHS 06 data which shows 46% infants are exclusively breastfed. Out of 137 patients 79.5% patients Continued breast feeding up to 1 year and 52.5%

patients up to 2 year. According to NFHS06 However, mothers in India breast feed for an average of 25 months. Among all SAM children introduction of semi solid food is maximum between age groups 10 to 12 months 54%. The comorbid conditions associated among study patients are diarrhoea in 50.3%, respiratory tract infections in 6.5%, UTI in 5.1% and skin infections in 5.1% patients. **Kumar et al**³ studied diarrhoea to be the most common comorbid disease associated with SAM. 54% SAM children had diarrhoea and 27.9% of children suffered acute respiratory tract infections. In a Colombian study, 68.4% of malnourished children were suffering from diarrhoea and 9% had sepsis. Two African studies also showed high incidence of diarrhoea in SAM children 49% and 67%. **Gugsa Yimer**,⁴ conducted the study to estimate the level of malnutrition and identify the factors associated with chronic malnutrition among children in the five densely populated zones of the Region in southern Ethiopia. The search for the factors affecting long-term nutritional status point to both socio-economic and demographic factors. Among the socio-economic factors, household economic status and women's education were important in explaining the variation in long-term nutritional status of children. From the demographic variables included in the analysis, age, preceding birth interval and number of under-five children were associated with stunting. **Jesmin A et al**⁵ conducted a study on prevalence and determinants of chronic malnutrition in Dhaka city Bangladesh. Results revealed that socioeconomic and demographic factors were most significantly associated with the stunting of children. Results showed that height of mothers, birth weight of children, education of fathers, knowledge of mothers on nutrition, and frequency of feeding were the most significant factors that had an independent and direct influence on the stunting of children. A case control study was conducted to assess the risk factors for severe acute malnutrition in children under five in Ethiopia. The study concluded that to reduce childhood malnutrition due emphasis should be given in improving the knowledge and practice of parents on appropriate infant and young child feeding practices. **Girish B**⁶ studied the nutritional status of anganwadi children of nagamangala taluk, mandya district, Karnataka state. He found that the main reason for this malnutrition is children does not like the food provided by Anganwadi. Worm infestation, low hygiene and sanitation, inter current infections not managed timely and adequately are other possible reasons. **Solomon Amsalu et al**⁷ A case control study was conducted to assess the risk factors for severe acute malnutrition in children under five in Ethiopia. The study concluded that to reduce childhood malnutrition due emphasis should be given in improving the knowledge and practice of parents on appropriate infant and young child feeding practices. **Kumar et al**⁸ studied the nutritional status of under-five children and assessed whether infant feeding practices are associated with the under-nutrition in Anganwari areas of urban Allahabad, India. Initiation of breast-feeding after six hours of birth, deprivation from colostrum and improper complementary feeding were found significant risk factors for underweight. Wasting was not significantly associated with infant feeding practice studied. **Irani bandi**⁹ studied some factors are believed to influence health and play an important role in prevalence of malnutrition those are age of weaning, birth weight, antenatal visits of mother, breast feeding, immunization, diarrhoeal episodes in past two weeks, frequency of food intake per day, height of mother, practice of exclusive breast feeding practices, use of unhygienic latrines etc, because of these factors the under five children suffer from malnutrition and it leads to the mortality, morbidity in under five children.

Conclusion:-

So the prevention of malnutrition is must. Investing in prevention is critical. Severe acute malnutrition occurs mainly in families that have limited access to nutritious food and are living in unhygienic conditions, which increase the risk of repeated infections. Preventive interventions can include: improving access to high-quality foods and to health care; improving nutrition and health knowledge and practices; effectively promoting exclusive breastfeeding for the first six months of a child's life where appropriate; promoting improved complementary feeding practices for all children aged 6–24 months — with a focus on ensuring access to age-appropriate complementary foods (where possible using locally available foods); and improving water and sanitation systems and hygiene practices to protect children against communicable diseases. Thus, preventive programs have an immense job to do in the context of poverty, and in the meantime children who already are suffering from severe acute malnutrition need treatment.

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