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Study of Systemic Illnesses in Malnourished Children

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Abstract: Malnutrition in children is widely prevalent in India. It is estimated that 57 million children are under weight (moderate and severe). More than 50% of deaths in 0-4 years are associated with malnutrition. The median case fatality rate is approximately 23.5% in severe malnutrition, reaching 50% in edematous malnutrition. There is a need for standardized protocol based management to improve in outcome of severely malnourished children. Good nutrition is essential for the prevention of infectious disease and their consequences. Aim is to study systemic illnesses in malnourished children. Information was collected from interview with the parents and examination of fewer than five years children was entered in a predesigned and pretested proforma of the study. Gastrointestinal and respiratory system disorders were predominant illnesses. Higher less than five morbidity and mortality emphasize the need for strengthening of health services at least in those areas which are unreachable. This study also emphasizes that for every malnourished child, nutritional management, should be an essential part of management modality.
Keywords: Malnutrition, Systemic Illness, Malnourished & Mortality.

INTRODUCTION

The important role of malnutrition in child death is that most nutritional deficiencies, including vitamin A and Zinc, impair immune function and other host defenses leading to a cycle of longer lasting and more severe infection and even worsening nutritional status. Thus inadequate intake, infection and poor nutritional status are intimately linked.

Well-nourished children rarely die from diarrhoea, pneumonia, other common childhood infections thus maintaining a good nutritional status is an integral part of improving child survival. Intervention to prevent malnutrition in all its form should therefore receive the highest priority to improve the nutrition of young children and mothers. Tubercular diseases may precipitate kwashiorkor or marasmus in an infant with borderline malnutrition [1].

Intestinal helminthic infestation is one of the multiple etiologies of malnutrition; Ascariasis has been associated with poor growth of preschool children [2]. It is of interest to note that while no reduction in weight has been demonstrated in Ascaris infected children when treating them has consistently resulted in weight gain [3], weight reduction also reported in giardial infected children then the non-infested. Anaemia found in malnourished children in usually attributed to deficient nutrient intake [4]. Hookworm infestation, known to result in anaemia due to chronic blood loss, is very uncommon in preschool. [5]. Prevalence of malnutrition and intestinal parasites in preschool children is 17.5% as assessed by a single direct fecal smear examination of these, Ascarislumbricoides was found in 68.1% and Giardia lamlia in 32.9% malnutrition and low hemoglobin level are also widely prevalent [2].

Heart diseases

Continued MN may be an important factor in decision to undertake earlier surgical intervention in patients who have an operable congenital heart lesion [6] Acute or chronic malnutrition occurred in 70% or more of patient with cyanosis and /or congestion heart failure but in only 30% of patients with neither [7].

Malnutrition is a common complication in children with liver diseases and the incidence in reported studies in both adults and children is high .High frequency of malnutrition in this group of children especially in those with severe end stage liver diseases [8]. The effects of malnutrition secondary to chronic liver disease are varied and include fat-soluble vitamin deficiencies,

generalized growth failure, impairment of gastrointestinal function, immunospression and hypotonia [9]. It is now recognized that malnutrition is an important risk factor for liver transplantation and increases both mortality and morbidity [10].

CNS tuberculosis accounted for 65.5% total deaths [11]. Good nutrition not only helps children to grow, but it saves lives and advances human development, economic growth and poverty reduction across the board. Food is not the only answer; access to health services and good care, especially nearly childhood, are just as important. It is clear that priority of nutrition interventions must be children under two years old. Under nutrition in early childhood has a devastating impact on child survival and development because children are most vulnerable to disease and mortality during that period. New evidence indicates that if such high-impact health and nutrition interventions are breast-feeding, complementary feeding and vitamin A and zinc supplementation are scaled up, they will have a synergistic impact on growth and development, as well as survival. The evidence that good nutrition advances not only human but economic development is so strong that policymakers will be considered negligent if they do not promote it by all means within their power. Better nutrition can change a nation's fortunes. But this can happen only if child under nutrition is recognized as a problem and a priority and if it is addressed in a comprehensive national policy. Better nutrition can happen, only when every level of society work in partnership. Individuals and communities, governments and the private sector, humanitarian agencies and health professionals must all work together to ensure that children's rights to nutrition are met and that the caregivers and families are empowered to meet them [12].

MATERIALS AND METHODS

This community-based study was carried out in Department of Pediatrics; Information was collected from interview with the parents and examination of under five years children was entered in a predesigned and pretested proforma of the study. Information was obtained regarding the name, age, sex, address, occupation of parents, literacy and age of mother, father, socio-economic status, number of sibling and birth order of child and space between two siblings and information regarding place of residence (Rural, Urban) types of house (kaccha/pakka) and other epidemiological variables.

Systemic examination of G.I.T., respiratory, CNS & C.V.S. was done. In GIT, Common conditions like, AWD, ABD, Hepatitis, Jaundice, PMD, Persistence diarrhea were included and R/S, illness included tachypnea and Indrawing chest. Anthropometric measurements of weight, length/height, head circumference and Mid Arm circumference and chest circumference were calculated. The measurements were taken by the standard technique as quoted in the WHO monograph no. 53. From time to time measuring instruments were checked for their accuracy. Nutritional status of children was determined by the classification given by WHO and sub-committee of I.A.P. Both.

RESULTS

Many of children were suffering from GIT disorder (37.8%), followed by respiratory disorder (30.2%) and CNS disorder (29.5%).

Table-1: Systemic illnesses in malnourished children

System	Malnutrition Grade III	Malnutrition Grade IV	Total
GIT	21 (42%)	24 (34.7%)	45 (37.8%)
R/S	18 (36%)	18 (26.3%)	36 (30.2%)
CVS	02 (4%)	01(1.4%)	03 (2.5%)
CNS	09 (18%)	26 (37.6%)	35 (29.5%)
Total	50	69	119

P=0.11

Table-2: Clinical examination of malnutrition

Clinical findings	No. of malnutrition grade III	No. of malnutrition grade IV	Total
Vit. A Deficiency	16	28	44 (36.9%)
Pallor	29	43	72 (60.5%)
Icterus	01	04	05 (4.2%)
Lymphadenopathy	06	06	12 (10.1%)
Ear discharge	03	04	07 (5.9%)
Cheilosis	12	35	47 (39.4%)
Hair changes	18	40	58 (48.7%)
Skin changes	20	31	51(42.8%)
Mental changes	13	40	53 (44.5%)
Total	50	69	119

P=0.43

DISCUSSION

GIT disorder with Nutritional status: In the present study 45(37.8%) out of 119 children suffering from GIT disorders. Rowland MGM, Cole TJ and White Head et al conducted by examining whether diarrhea leads to malnutrition and reduction in weight gain as a result of diarrhea and showed weight deficit of 610gm when studying monthly deficit from 0-12 months.

Malnutrition predisposing to diarrhea has been shown by Sepulreda [14]. He reported that yearly incidence of diarrhea was 3.3 episodes for well-nourished children, 3.7 episode for mildly malnourished and 6 episode for moderately malnourished children.

Respiratory system illness: Present study shows 36(30.2%) children out of 119were suffering from respiratory disorders. Majority of them suffering from acute respiratory tract infection. A study showed relation of malnutrition with respiratory illness has (36%) children of grade III malnutrition and (26.3%) grade IV malnutrition. This is because of failure to feed, recurrent vomiting and increased metabolic rate and immunodeficiency state, which lead to malnutrition [13].

Many of children were suffering from GIT disorder (37.8%), followed by respiratory disorder (30.2%) and CNS disorder (29.5%).

Approximately 40% of all children had Vitamin A deficiency. Cheilosis, Skin changes, Hair change, mental change & pallor were seen in more than 60% of the children. Icterus was seen less than 5% and Lymphadenopathy in 10% of the total in children.

CONCLUSION

Gastrointestinal and respiratory system disorders were predominant illnesses. Among VPD, measles and TB were still our major problems. This Study fulfilling all the aims and objectives and it can be concluded from present study that nutritional status of fewer than five children lays key role in morbidity and mortality among these groups of children. Higher less than five morbidity and mortality emphasize the need for strengthening of health services at least in those areas which are unreachable. This study also emphasizes that for every malnourished child, nutritional management, should be an essential part of management modality. During the course of hospital stay, nutritional education can be given to mother when they have maximum receptive era. Since mother will follow all instruction given by health worker, at the time of her child's illness than where he is not ill.

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