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Research Article

Treatment Aftermath of Severe Acute Malnutrition in Children at Nutrition Stabilization Centre Multan, Pakistan

[1]Faiza Khalid, [2]Muhammad Qasim,
and Huma Afzal

[1] MBBS, UHS Lahore, Pakistan.
[2] MBBS, Beihua University Jilin, China.
[3] MBBS, UMDC, Faisalabad.

ABSTRACT
The purpose of this research study was to determine the outcome of children with severe acute malnutrition treated with WHO recommended guidelines for management of severe acute malnutrition. Study Design was Retrospective study. Place and Duration was Nutrition Stabilization Centre of the Children's Hospital and the Institute of Child Health Multan from 1st January 2014 to 30th December 2014.Data was collected from outcome register of nutrition stabilization center. Age, sex, type of malnutrition and outcome of patients were main variables that were determined. Patients with severe acute malnutrition (wt/ht less than -3SD and or bilateral pedal edema) of age 1 month to 60 months were included in this study and given F75-F100 as therapeutic feed as recommended by WHO guideline. The results showed that the total of 276 patients with severe acute malnutrition were admitted, (44.5%) were less than 6 months while (55.5%) were more than 6 months of age. (56.2%) were males and (43.8%) were females. Of the total respondents, (91.6%) patients were marasmus while (8.4%) were of Khawashikor. About (90%) were discharged from ward and (6%) were expired, rest of (4%) Left against medical advice (LAMA) and discharge on request. Breast feeding was established or re-established in (19%) children less than 6 months during this period, average weight gain using F100 formula was more than 10gm/kg/day. Diarrhea was the most common presentation on admission (40%) followed by pneumonia (30%), Hypoglycemia (10%), UTI (15%), and Otitis Media 5%. It was concluded that WHO guideline for the management of children with severe acute malnutrition are very useful and helpful in reducing mortality of patients with severe acute malnutrition.

Keywords: Treatment-outcome, Children, WHO guidelines, severe acute malnutrition.

INTRODUCTION
Malnutrition is a common problem worldwide and globally about 20 million children suffer from Severe Acute Malnutrition with highest prevalence in Africa and South Asia[1]. Malnutrition is one of the most important public health problem all over the developing world and is an underlying factor in over 50% of the 10-11 million deaths in children under 5 years of age. Pakistan like other developing countries is also facing the problem of malnutrition[2, 3]. According to National Nutrition Survey 2011, about 15 % of children in Pakistan are wasted and 34% underweight while 43% are stunted. Malnourished children have profound physiological and metabolic changes that affect every system of body so, their treatment is more precise and meticulous as compared to well-nourished children but appropriate care in hospital as well as home can save precious lives. In 1999, World Health Organization published guidelines for the in care management of severely malnourished children under the 5 years of age

and introduced specially prepared therapeutic feeding formulas that contain proteins, carbohydrates and sodium in specific proportion according to the needs of malnourished children[4, 5].

WHO guidelines for the management of severe acute malnutrition are simple, easy to understand and follow and are applicable. These guidelines cover five sections i.e. covers general route in care, emergency treatment of shock and severeanemia, treatment of associated conditions, failure to respond to treatment and discharge before recovery is complete. Management of malnutrition is divided in to two phases according to WHO in to two phases, early stabilization phase and rehabilitation phase. Mortality rate with Severe Acute Malnutrition ranges from 5-40% and in complicated Severe Acute Malnutrition case fatality rate[6, 7]. More than 30% is also documented. Introduction of these [4] feeding formulas has reduced the case fatality rate of severe Acute Malnutrition from 30% to 35% in hospitals and Nutrition rehabilitation centers. The instant causes of malnutrition and child deaths are mutually reinforcing condition of inadequate dietary intake and infectious disease; inadequate intake of household food insecurity; absence of healthy environment and inadequate health services.All age groups affect due to malnutrition but children (4-6 years) are more frequently. It is linked to increased child death and reduces learning ability, school performance.[9-11] Severe acute malnutrition is defined by a very low weight for height (below -3z scores of the median WHO growth standards), by visible severe wasting, or by the presence of nutritional oedema. The current study was done to assess the treatment outcome of severely malnourished children at our Nutrition rehabilitation center using World Health Organization feeding protocols on weight gain and case fatality rate of malnourished children[8].

METHODOLOGY

This study was conducted at Nutrition Stabilization Centre of The Children's Hospital and The Institute of Child Health Multan from 1 January 2014 to 30 December 2014. Patients with st th severe acute malnutrition (wt/ht less than -3SD for opposite age and sex and or bilateral pedal edema) of age 1month to 60 months were included in this study. Data was collected from outcome register of nutrition stabilization center. Age, sex, type of malnutrition and outcome of patients were main variables that were determined. The children were managed according to World Health Organization guidelines for the management of severe acute malnutrition. Key points for the management of patients were, the children were kept in the nutrition ward with mothers or caretakers. Therapeutic feeds F75 and F100 were given. F-75is a high-energy milk (HEM) product used in the most severe cases of malnutrition. It is a 'starter' formula given to infants whose bodies are unable to tolerate regular nutrients. F100is the 'catch-up' formula given after the infant has passed remains extremely serious. Initially at the day of admission 2hourly F75 feed was started, 130ml/kg/day i.e 12 feeds/day were given but for edematous child feed volume was 100ml/kg/day. Nagogastric tube feeding was used in critically ill patients. All the record of feed was noted on 24-hour intake chart. Duration of feed was gradually increased to 3-4 hourly. F100 was added in transition phase for 2 days in same amount patient was on F75 once appetite has returned and edema lost or reduced. During rehabilitation phase 6 feeds were given and feed was increased gradually to 220ml/kg/day. During hospital stay Child weight was measured daily and weight gain was noted, appetite was monitored. When there were no active issues regarding feeding, appetite improved, infection resolved, weight gained 10g/kg/day for 3 consecutive days and edema settled and mother counseled for feeding techniques at home children were discharged from hospital. Treatment outcome either of the followings whether child achieved weight for high to less than -2sd for less than -3sd at admission, discharged, discharged on request, expired, left against medical advice.

RESULTS

A total number of 276 patients with Severe acute malnutrition were recruited in the study. Of the

276 respondents 155(56.2%) were males and 121(43.8%) were females. About 253(91.6%) patients were marasmus while 23(8.4%) were of Khawashikor. Breast feeding was established or re-established in (19%) children less than months during this period, average weight gain using F100 formula was more than 10gm/kg/day. Diarrhea was the most common presentation on admission in 40% of cases. Pneumonia was documented in 30% of cases,

the most extreme circumstances, although the situation

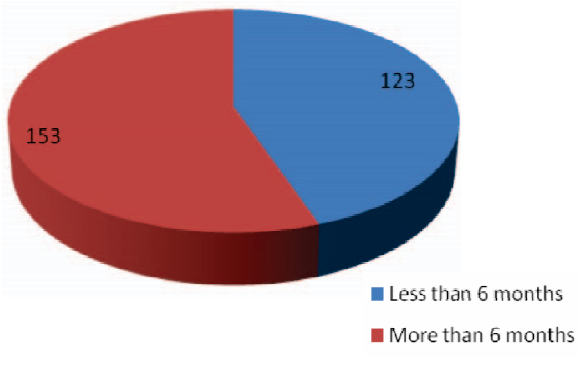

Fig-1: Age Distribution Of Children With Severe Acute Malnutrition. (N=276)

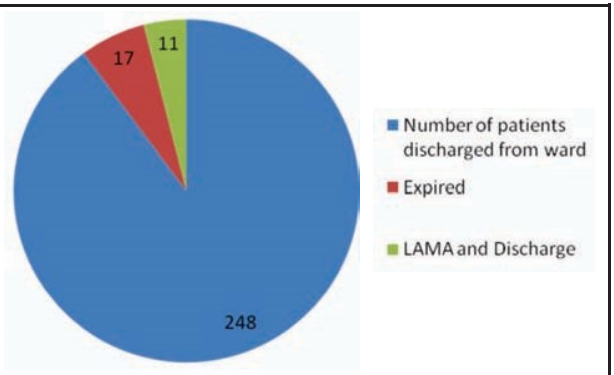

Fig-2: Out Come Of Patients With Severe Acute Malnutrition. (N=276)

DISCUSSION

Current study assessed the Efficacy of WHO guidelines for management of children for severe acute malnutrition at nutrition Centre Multan. Lack of breast feeding, bottle feeding and lack of knowledge regarding proper introduction of complementary feeding were associated factor with severe Acute Malnutrition.

Hypoglycemia 10%, UTI, 15%, Otitis Media 5%. Of the 276 patients 123 (44.5%) were less than 6 months while 153(55.5%) were more than 6 months (Figure-1).

Of the 276 respondents 248(90%) were discharged from ward and 17(6%) were expired 11(4%) were self-discharged or discharged on request (Figure-2).

l.age group 6 months to 2 years. Among all 44.5% were less than 6 months while 55.4% were more than 6 months, 56% were males and 43.8% were females. Similar study reported that majority of patients were in age group of 13-60 months. The reason for this age group involvement is lack of breastfeeding and insufficient knowledge about the proper timing for the initiation of complementary feeding and fears and myths associated with rice, banana and yogurt diets. In our study 90% were discharged from ward and 6% were expired. Similar results have been reported in other studies that 87% of patients were improved and 3.6% died while another study showed that high mortality rates that were 20 and 25.8% respectively. Another study results observed by Sukkur Nutritional center where 82.92% of patients were discharged and 8.5% were expired. Similar study results showed that83.1% were discharged and death rate was 6.2%.Study at Jamaica showed cure rate of 92.4% and death rate of 7% after introduction of WHO guidelines for management of children for severe acute malnutrition at Nutrition Rehabilitation centre.Average weight gain using F100 formula was more than 10gm/kg/day. Major problem in achieving the target weight gain was inadequate hospital stay at hospital due to social issues such as daily wages earning and lack of caretakers to look after other children at home. Similar results regarding short hospital stay and poverty were reported by Panezai et al. The need forshorter hospital stay has been accepted Internationally and Community Management of Acute Malnutrition was introduced. Persistent or unresolving Infections were an important risk factor associated with mortality in our study

similar results were observed by Lazzerini et al. The common infections observed were Diarrhea, 40%followed by pneumonia 25%, UTI, 15%, Otitis Media 5%, and sepsis 15%.

CONCLUSION

Management of children with severe acute malnutrition are very useful and helpful in reducing mortality of patients with severe acute malnutrition. The worth of new protocols for the management of severe Malnutrition as a tool to save precious lives and to cut down previously very high fatality rate with malnutrition. The need of the day is Nutritional Health Education to minimize the recurrence of Malnutrition in rehabilitated patients and to prevent other children from the Peril of Malnutrition.

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