Research Paper Medical Science

Management of Children With Severe Acute Malnutriti on: Experiance of malnutrition Treatment Center in Kota, Rajasthan, India

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ABSTRACT

Objective: To assess the effectiveness of facility-based care for children with severe acute malnutrition (SAM) in MALNUTRITION TREATMENT CENTER
Design: Review of data.
Setting:-MALNUTRITION TREATMENT CENTER IN KOTA,RAJASTHAN,INDIA.
Participants: Children admitted to MTC (from1 March, 2014 to 31 January, 2015).
Outcomes: Survival, default, discharge, and recovery rates.
Results:
66.2% of the total 83 children admitted were girls,92.7% were above 6 months old, 96.3% belonged to scheduled tribes, scheduled castes, or other backward castes,
and 54.2% had medical complications. Of the 83MTC exits, 0(0%) children died, 1 (1.2%) children defaulted, and 82 (98.8%) children were discharged. The
average (SD) weight gain was 11.64 g/kg body weight/day and the average (SD) length of stay was 10.4 days. 19 (23.1%) children were discharged after recovery (weight gain
≥15%) while63(76.8%) were discharged, non-recovered (weight gain <15%)
Conclusions:-MTC provide life-saving care for children with SAM; however, the protocols and therapeutic foods currently used need to be improved to ensure the full recovery of all children admitted.

KEYWORDS Child, Management, Protein energy malnutrition,Severe wasting.

INTRODUCTION

Severe acute malnutrition (SAM) is a major cause of mortality and morbidity in children less than 5 years of age in developing countries like India [1, 2]. India's third National Family Health Survey (NFHS-3) indicates that theprevalence of severe wasting is 7.9% as per WHO Child Growth Standards [4]. Therefore, at any point in time, an average eight million Indian children under age five years are severely wasted[5] and are dangerously undernourished to survive, grow and develop to their full potential.World health organization (WHO) has proposed guidelines for management children with severe malnutrition which divides the management into 3 phase:-

(1)Stabilization

(2) Rehabilitation

(3) Follow up[1, 2].

This includes both medical as well as nutritional management. However, in the context of busy practice, most of the pediatricians prefer to stabilize the patients with medical management in hospital and then to continue nutritional management at home after early discharge from hospital. This oftenresults in inadequate and improper nutritional management of the child. The concept of nutritional rehabilitation center, where patients are admitted in the hospital aimed at providing diet, has taken place to overcome above mentioned limitation. Nutrition rehabilitation of these children with generous amounts of energy and protein along with other nutrients is associated with rapid weight gain. These alsofacilitate education of mothers as well asmonitoring of the children for anycomplications and catch up growth.

OBJECTIVE :

The objective of the analysis presented here is toassess the effectiveness of MTC in providingtherapeutic care for children with SAM in Kota,Rajasthan.

METHOD

This retrospective study was conducted in MTC ward, Department of Pediatrics,NMCH, Kota from1 March,2014 to 31 January, 2015.SAM children admitted in MTC ward were taken as study material. Associated complications were identified, investigated andmanaged in Pediatric ward initially then nutritional rehabilitation was done in MTC ward as per WHO SAM guideline. MTC was a specially designed ward for nutritional rehabilitation for SAM children where residentialfacilities were also available for mother/care taker with daily wage compensation.

A qualifiednutritionist was available round the clock under whose supervisionand guidance feeding dietwas prepared and given to patient as per the WHO SAMmanagementguidelines for individual patients. A child friendly home appearance with all creations were provided in MTC ward with daily dieteducation to mother/care taker about important aspects of nutrition and child care. Severe acute malnutrition is defined by (1) Weight-for- height/ lengthz-score (WHZ) below -3SD of themedian WHO child growth standards and/or, (2)A Mid-upper arm circumference <115 mm in 1-5 years and/or (3) By the presence of nutritional oedema.

Children withmedical complications, and/or bilateral pitting edema,and/or with poor appetite were fed with F-75to provide 75kcal/kg/dayevery two hourswhile their medicalcomplications were treated and monitored by aphysician. After completion of the initial 48 hours in theMTC, these children were fed F-100 sixtimes a day for 48 hours to initiate rapid weight gain(rehabilitation phase).

All children admitted to the MTC were administeredmicronutrients, namely vitamin A (one age-appropriatepreventive

dose), folic acid, zinc, potassium andmagnesium in sufficient doses during the entire period ofstay in the MTC as well as broad spectrum antibiotics for7-10 days.Iron was given in rehabilitation phase.

Children were discharged from the MTC when theymet the following discharge criteria: (i) the child wasactive and alert; (ii) the child had no signs of bilateralpitting edema, fever, and/or infection; (iii) the child hadcompleted all age-appropriate immunizations; (iv) thechild was being fed 120-130 kcal/kg weight/day; and (v)the primary caregiver knew the care that the child neededto receive at home. Once discharged from the MTC,children were to be followed up in the community by theICDS or NRHM workers to ensure that the child wasenrolled in and benefited from ICDS SupplementaryNutrition Program, and that the child returned for a followup visit to the MTC every 15 days during the six weeksfollowing discharge (i.e. three follow up visits).

Data management: Data recording was done in theregisters maintained at the MTC.

RESULTS:-

(a)Admission:-

A total of 83children 0-59 months old were admitted in the MTC.Outof the 83chil dren:- (i)23(27.71%) children had a weight-for height/length z-score (WHZ) below -3 SD (ii)1(1.2%) children had a MUAC <115 mm (iii)57(68.7%) children had both a weight-for-height/length z-score (WHZ)below -3SD and a MUAC <115 mm.(iv)2(2.4%) children had bilateral edema,weight-for-height/length z-score (WHZ) below -3SD and a MUAC <115 mm. ▪No child with isolated bilateral pedal edemawas found.

TABLE I CHARACTERSTICS OF THE STUDY CHILDREN

Total patient	83
Children brought to MTC from Health worker	6(7.2%)
Age <6 month >6 month	 6(7.8%) 77(92.7%)
Caste General category other category	 3(3.6%) 80(96.3%)
Sex Male Female	 28/83 (33.7%) 55/83 (66.2%)
Clinical findings With bilateral pitting edema With severe wasting With complicated SAM	 2(2.4%) 83(100%) 45(54.2%)

(b) Outcome:-

Outof the 83 MTC exits (deaths, defaulters and discharged), the proportion of children who died was 0% and the proportion of children who defaulted was 1.2%. (i)19 children (23.1%) were discharged curedfrom the MTC when they met the discharge criteria.(ii)The average weight gain of MTC - (after loss of edema in the case of children whohad edema at admission) 11.64 gram/kg body weight/day. And(iii)Their average length of stay in the MTC was 10.44days.

TABLE II OUTCOMES IN STUDY CHILDREN WITH SEVERE ACUTE MALNUTRTION (SAM) ADMITTED TOMALNUTRITION TREATMENT CENTER IN KOTA,RAJASTHAN,INDIA

Outcomes	Complicated SAM	Uncomplicated SAM	All children with SAM
Admitted Exits Transfers	 45(54.2%) 0	 38(45.7%) 0	 83 0
Exits Deaths Defaulters Discharged	 0 1(2.2%) 44(97.7%)	 0 0 38(100%)	 0 1(1.2%) 82(98.7%)
Discharged Recovered Nonrecovered	 8(18.1%%) 36(81.8%)	 11(28.9%) 27(71.0%)	 19(23.1%) 63(76.8%)

(c) Follow up:-

No one came (out of the 83 discharged children) for three follow up visits after discharge, 1(1.2%)came back for two follow up visits, 15 (18%) came backfor one follow up visit and 67(80.7%) did not come backfor any follow up visit.▪Outof the 67 discharged children who did not come back for any follow up visit, 15 (22.3%) had been discharged, recovered while 52 (77.6%) had been discharged, non-recovered .

DISCUSSION

The program achieved survival outcomes that comparefavorably with national and international standards ofcare (<10% child deaths) [12,14]. This is important as theprimary objective of MTC is to reduce fatality ratesamong children with SAM. More than half ((54.2%)%) of thechildren admitted to the MTC had complicated SAM. Internationalguidelines recommend that children with uncomplicatedSAM be cared for through a community-based programfor the management of SAM [13] as these children are at asignificantly lower risk of death than children withcomplicated SAM and can be cared for at home if anappropriate community-based therapeutic feedingprogram is in place. The data presented here indicate that in the MTC in Kota, the death rate amongchildren with complicated SAM and uncomplicated SAM was nil.

The proportion of children who defaulted (1.2%) wassignificantly lower than national and international standardsof care (<15%) [12,14]. Low defaulter rates have beenreported is against the data reported by other facility-based interventions for childrenwith SAM in India [15]. Undoubtedly, the low defaulterrates tells about the quality andrelevance to families of the care provided at the MTC.

The average weight gain of MTC ward was 11.64 gram/kg./day compares favorably with the nationally andinternationally-agreed upon minimum average weightgain (≥8 g/kg body weight/day) for programs that treatchildren with SAM [12,14]. However, only 23.1% of the83 children discharged gained at least 15% of their initialweight, the minimum weight gain recommended by WHOand India's Ministry of Health to discharge children asrecovered [12,14]. The proportion of children dischargedis below the national and international standard of care(>75%) for programs that treat children with SAM [12,14].

The average length of stay of recovered discharged children (11.4 days) as compared to non recovered discharged(9.4 days) was not significantly different. Thus, MTC provide live-saving care for children withSAM as demonstrated by the high survival rates of theprogram. One program outcomes – thelow recovery rate is ofparticularly concern. 76.8% of the discharged children didnot fully recover (weight gain <15%), primarily becausetheir average daily weight gain was sub-optimal.Therefore the protocols and therapeutic foods currentlyused need to be improved.

Community-based therapeutic care for children withuncomplicated SAM needs to become a key componentof the continuum of care for children with SAM. Globalevidence shows that good quality ready-to-usetherapeutic foods are effective in supporting rapid catchupgrowth in children with SAM [16] and can be safelyused in community-based programs [13]. There isemerging consensus as to why and how they can be usedin India [17-19]. With an effective community-basedprogram for early detection and treatment, most childrenwith SAM can be cared for by their mothers and familiesat home while Nutrition Rehabilitation Centers (NRCs) arereserved for

children with SAM and medicalcomplications.

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