OUTCOME STUDY OF NRC IN ANDHRA PRADESH

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ABSTRACT

BACKGROUND

This is an outcome study done in an NRC unit attached to teaching hospital, the results of which are not up to the mark; 30 NRCs were established all across Andhra Pradesh and all staff trained regarding protocol based on management of severe acute malnutrition; protocol based management is specially set for them taking into account their altered physiology. In the wake of high prevalence of SAM (Severe Acute Malnutrition) and the high mortality associated with it, facility based management to reduce mortality has been started with good results. This is an outcome study on NRC (Nutritional Rehabilitation Centre) in South India.

METHOD

Retrospective longitudinal analysis of case records to determine the outcome of admission over 6 months.

RESULTS

There was a high percentage of defaulters and non-responders. The cure rates were low.

CONCLUSIONS

Rates of default and cure are in the alarming range when compared to the guidelines set by WHO NRHM. No proper guidelines set for management of non-responders.

KEYWORDS

NRC, SAM, Outcome, Cured, Defaulter, Death, Non-Responders.

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INTRODUCTION

Thirty NRCs were established in united AP, 10 (In rural and tribal areas), 20 (In medical college attached hospital) bedded to treat Severe Acute Malnutrition (SAM) in facility as per NRHM protocol. But the program seems to be a failure as there is no referral from grass-root level workers (ASHA/ANM) of cases from the community. Objective is to study the outcome pattern of our NRC and compare with WHO guidelines.⁽¹⁾

BACKGROUND

Malnutrition is very prevalent in India. More than half of under-five mortality is associated with malnutrition. Severe acute malnutrition is both a medical and social disorder. According to National Family Health Survey 4, in India 6.4% of under-five children were suffering from severe acute malnutrition. With the current estimated population of India, it is expected that 8.1 million under-5 children are likely to be suffering from severe acute malnutrition. The case fatality is 23.5% in severe acute malnutrition, which may reach 50% in oedematous malnutrition. This high fatality can be brought down to approximately 7-10% by standard case management protocols set by WHO/NRHM.

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MATERIAL AND METHODS

It is a longitudinal retrospective analysis of the case records to determine the outcome of 100 admitted cases of SAM between the age group of 6 months and 5 years over a period of 6 months in the year 2014.

The Inclusion Criteria were

1. Visible severe wasting.
2. W/H <-3SD.
3. MUAC <115 mm.
4. Oedema of both feet.

Retrospective longitudinal study of case records. Outcome was analysed for 100 admissions and calculated in terms of percentages.

RESULTS AND OBSERVATIONS

Out of 100 admissions, 41% were cured and discharged; 30% were defaulters, 19% were non-responders (Failure to respond), 9% case fatality.

Outcome of our NRC compared to acceptable levels of care by WHO.

DISCUSSION

The study was done in a first of its kind NRC in AP (Now Telangana). It is a 20 bedded NRC attached to a medical college started in 2011 with NRHM funding. The objective was to manage severe acute malnutrition as per WHO protocol. Protocol based management⁽²⁾ decreases case fatality rate of severe acute malnutrition and ensures that the child does not suffer long-term consequences on the developing brain and physical stunting.⁽³⁾ A 100 admissions spanning over 5 months in the year 2014 were analysed and the results were far from the quantitative indicators set by the program.⁽⁴⁾

Indicator	Acceptable	Alarming
Recovery Rate	>75%	>50%
Death Rate	>10%	>15%
Defaulter Rate	>15%	>25%

All children admitted to the paediatric wards were examined to see if they meet the 4 Criteria of SAM, namely

1. Visible severe wasting.
2. W/H <-3SD.
3. MUAC <115 mm.
4. Oedema of both feet.

Visible severe wasting is defined by a child having loose folds of skin in the axilla, groin, outline of ribs easily seen, absence of buccal pad of fat, baggy pant appearance from behind due to loss of gluteal muscle and fat. Weight for height

ratio is an age independent parameter. Weight for height standards are set by taking sample of exclusively breast fed infants and children from developing as well as developed countries, so as to include all populations.

MUAC is also an age independent criterion, which is a screening tool for SAM by the community health workers. Earlier, the minimum acceptable limit was 12.5 cm, but now it is reduced to 11.5 cm or 115 mm so that more cases of SAM can be detected early.

Oedema is swelling from excess fluid in the tissues due to hypoproteinaemia. In severe cases, it may extend to upper limbs and face. Oedematous SAM has a high mortality rate and the management protocol for such cases is different from cases of SAM without oedema.

The program depended on ANM and ASHA workers to refer cases to NRC. Since there is a huge gap between medical college and rural health set-up workers, the program did not succeed. As a result, children admitted to paediatric wards who were meeting the criteria of SAM were transferred to NRC for nutritional management. After being managed as per standard protocols for the presenting complaint and simultaneously started on feeding, the child is transferred to NRC wards.⁽⁵⁾ In the ward, the child was treated as per standard treatment guidelines set by WHO.

The bed occupancy rate is low due to no referrals from the community; 100 admitted children from January 2014 were analysed and the results were as follows:

Indicator	Result	Acceptable	Alarming
Cured	41%	>75%	>50%
Death Rate	9%	>10%	>15%
Defaulter Rate	30%	>15%	>25%
Non-Responder	19%	-	

The cure rate in our study was 41%, which is alarming as per WHO standards. Curing SAM children is a rewarding experience. The ideal cure rate being >75%. The low cure rate in our study is attributable to more cases of SAM with underlying complications being admitted in the tertiary hospital setting and no case being referred from the community.

Purely nutritional SAM (Primary) has a high cure rate. SAM with complications (Secondary) has high non-response rate. There were 9 deaths accounting to a case fatality rate of 9%. There is a very high defaulter rate of 30%, which is alarming. Reasons being other children to be cared for at home, loss of employment, cultural factors like festivals, strikes by doctors, etc. Treating the child after stabilisation in OP treatment centres leads to less defaulter rate. This strategy is successful in reducing costs and strain on health care facility and also hospital acquired infections. It is a huge success in African countries.⁽⁶⁾

In our Study, the Non-Responder Rate is 19%. Definition of non-response being,

- Failure to regain appetite by day 4.
- Failure to start to lose oedema by day 4.
- Oedema still present by day 10.

There is no standard protocol or previous studies done on the management of non-responders. Extensive search of

literature revealed no such study reported so far. So non-responders make up a large chunk of admitted cases, especially those with underlying chronic problems like heart disease, CKD, neurological disease, pneumonia, TB, HIV, etc. They account for frequent admissions and are difficult to cure. Thus they not only take up resources, but also progress to chronic malnutrition and stunting.

The causes of failure to respond may be related to procedures, staff, environment of the ward. Incorrect feeding practices or poor hygiene may also result in high non-responder rate. In our study, oedematous SAM was nil.

All non-responders except 2 were above 1 year and were between 2 and 4 years. They were not gaining appetite and resisted feeding. Poor appetite is a sign of body getting used to starvation (Low calorie diet) over a period of time and lapsing into chronic malnutrition. Unrecognised infection is stated to be underlying cause for failure to respond. Pneumonia, UTI, TB, malaria and HIV⁽⁷⁾ need to be ruled out. Pneumonia is the most common complication in the non-responder group.⁽⁸⁾ In our study of 19 cases, the underlying causes were as follows:

They also contribute to high mortality among NRC admissions. OP treatment centres with Ready To Use Therapeutic Food (RTUTF) was a huge success in some African and Asian countries (Bangladesh). It reduces hospital-borne (Nosocomial) infections and hospitalisation rates reduce which is beneficial for the child and its family, as being away from home adversely affects the emotional state of the child.

CONCLUSIONS

- The rates of default and cure are in the alarming range in our study.
- Management of non-responders - no clear guidelines set.
- After stabilisation, OP treatment has high success rate.⁽⁹⁾

Message

Cure rates may be higher if more children of primary/nutritional SAM are referred from the community.⁽¹⁰⁾ Cure rates of secondary/non-nutritional SAM as observed in this study are low and there is a high rate of non-responders. Hence, revised guidelines must be set regarding acceptable levels of care and management protocol for non-responders by WHO/NRHM for complete success of the program and also bridging the gap between medical colleges and peripheral health care workers, namely ASHA and ANM.

ABBREVIATIONS

NRC- Nutritional rehabilitation centre.

SAM- Severe acute malnutrition.

NRHM- National rural health mission.

RTUTF- Ready to use therapeutic food.

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