

**Cochrane Review (2013)
of
Severe Acute Malnutrition (SAM) /
Moderate Acute Malnutrition (MAM)**

**Dr. Prakash S. Shrestha
President,
Nepal Breastfeeding Promotion Forum
Professor in Child Health
Institute of Medicine**

A. Ready to use therapeutic food for home based treatment of Severe Acute Malnutrition (SAM) in children from six months to five years to age (review)

Done by:-

- 1. Anel Schoonus - Faculty of Medicine & Health Sciences
Stellenbosch University**
- 2. Martani Lmobard – Division of Human Nutrition
Stellenbosch University**
- 3. Alfred Munkiwa - University of the Witwatersrand**
- 4. Etienne Nel - Department of Paediatric
Stellenbosch University**
- 5. Jimmy Volmink - South African Medical Research
Council**

Background:-

Treating severe acute malnourished children in hospitals is not always desirable & practical in rural setting, and home treatment may be better.

Objective:-

To assess effects of home based RUTF on recovery, relapse and mortality in children with Severe Acute Malnutrition (SAM)

Selection Criteria:-

Randomized or quasi-randomized controlled trials in children between 6 months to 5 yrs of age with SAM treated at home with RUTF compared to standard diet or different regimes and formations of RUTF compared to each other.

Main Results:-

Four trials all conducted at Malawi

Three having high risk of Bias

One have low risk of Bias

- A. RUTF meeting total daily requirement verses standard diet – Three quasi randomized trials**

- B. RUTF supplement versus RUTF meeting total daily requirements – Two quasi randomized trials**

- C. RUTF containing less milk powder versus standard RUTR – One trial with radomized**

Comparison I:

RUTF meeting total daily requirement *versus* standard diet (flour porridge)

- **Cibberto 2005:- Quasi-randomized cluster trial of 645 children in 352 (HIV status not reported)**
- **Manary 2004:- Quasi-randomized cluster trial of 186 HIV uninfected children**
- **Ndekha 2005:- Quasi-randomized cluster trial of 65 HIV infected children**

Comparison II:

RUTF supplement *versus* RUTF meeting total daily requirements

- **Manary 2004:- Quasi-randomized cluster trial of 165 HIV – uninfected children**
- **Nedekha 2005:- Quasi-randomized cluster trial of 48 HIV infected children**

Comparison III:

RUTF containing less milk powder (10%) *versus* standard RUTF (25%)

- **Oakley 2010:- Individually randomized trial of 1874 children (HIV infected were excluded)**

Summary of Finding for the Main Comparison I

Population – Children aged 6 months to 5 years

Setting – Home based

Intervention:- RUTF

Comparison:- Standard diet

Outcomes

- a) Recovery**
- b) Relapse**
- c) Mortality**
- d) Weight gain**

Quality of Evidence

- Low**
- Very low**
- Very low**
- Very low**

Summary of Finding of Main Comparison II

Population – Children aged 6 months to 5 years

Setting – Home based

Intervention:- RUTF supplement

Comparison:- RUTF (total daily requirements)

Outcomes

- a) Recovery**
- b) Relapse**
- c) Mortality**
- d) Weight gain (HIV uninfected)**
- e) Weight gain (HIV infected)**

Quality of Evidence

Very low

Very low

Very low

Very low

Very low

Summary of Finding of Main Comparison III

Population – Children aged 6 months to 5 years

Setting – Home based

Intervention:- RUTF containing less milk powder

Comparison:- Standard RUTF

Outcomes

- a) Recovery**
- b) Relapse**
- c) Mortality**
- d) Weight gain**

Quality of Evidence

Moderate

low

Very low

Low

Author's Conclusion

Implication for practice

- **It was not possible to reach definitive conclusions regarding differences in clinical outcomes in children with SAM who were given home based RUTF compare to standard diet.**
- **RUTF or flour porridge can be used to treat SAM children at home depending on availability affordability & practicability.**

Implication Research

- **Well designed, adequately powered pragmatic RCTS of RUTF are needed.**
- **Focused on recovery, relapse and mortality.**
- **Cost implication should be reported in future studies.**

B. Specially formulated foods for treating children with Moderate Acute Malnutrition (MAM) in low and middle income countries (Review)

Done By:-

- 1. Marzia Lazzerini – Unit of Health Science Services
Research and International
Health, Italy**
- 2. Laura Robert – ” ”**
- 3. Paola Pani – ” ”**

Background

Moderate Acute Malnutrition affects around 10% of children under five years of age in low and middle income countries.

Objective

To evaluate the safety and effectiveness of different types of specially formulated foods for children with MAM in low & middle income countries

Selection Criteria

Randomized controlled trials (RCTs), Controlled trials (CCTs) Controlled before and after study (CBAS) and interrupted time series (IT) that evaluated specially formulated foods for the treatment of MAM in children between 6 months to 5 years in low and middle income countries.

Main Results

**Eight randomized control trials
(Seven of the trials were conducted in Africa)
Included studies were at low risk bias**

- A. Any specially formulated food *versus* standard care**
- B. Lipid-based nutrition supplements *versus* blended foods (dry food mixtures, without high lipid content) at full doses**
- C. Foods at complementary doses**
- D. Lipid based nutrition supplements *versus* specific types of blended foods**
- E. Different types of blended foods**
- F. Improved adequacy of home diet**

Specially formulated foods compared with standard care for treating children with MAM

Patients -	Children with MAM
Setting-	Low and middle income countries
Intervention-	Specially formulated foods
Controls-	Counselling and standard medical care without food provision

<i>Outcome</i>	<i>Quality of the Evidence</i>
a) Recovered	Moderate
b) Not-recovered	Low
c) Defaulted	Moderate
d) Weight gain total	Low
e) WHZ final	Moderate
f) MUAC gain	Very low
g) HAZ final	Low

Lipid based nutrient supplements full dose *versus* blended foods full dose for treating children with MAM

Population -	Children with MAM
Setting-	Low and middle income countries
Intervention-	Lipid based nutrient supplements at full dose
Controls-	Blended foods at full dose

<i>Outcome</i>	<i>Quality of the Evidence</i>
a) Recovered	Moderate
b) Not-recovered	High
c) Progression to SAM	High
d) Died	Moderate
e) Defaulted	Moderate
f) Weight gain	Moderated
g) WHZ gain	Moderate
h) MUAC gain	Moderate
i) Vomiting	Low

Lipid based nutrient supplements *versus* CSB++ for treating children with MAM

Population -	Children with MAM
Setting-	Low and middle income countries
Intervention-	Lipid based nutrient supplements
Controls-	CSB++ (Corn/Soy blended food enriched)

Outcome

- a) **Recovered**
- b) **Progression to SAM**
- c) **Defaulted**
- d) **Weight gain**
- e) **WHZ gain**
- f) **MUAC gain**
- g) **Height gain**

Quality of the Evidence

- Moderate**
- High**
- High**
- Moderated**
- Moderate**
- Moderate**
- High**

Author's Conclusions

Implication for practice

- **Provision of foods in addition to standard care or simple counselling improve a number of key outcome in children with Moderate Acute Malnutrition**
- **Different types of foods may be equally effective in short-term nutritional rehabilitation of children with MAM**
- **Blended foods such as CSB++ may be equally effective and cheaper than LNS**

Implication for Research

- 1. Special recipes to improve home diet, where this is feasible with locally available ingredients**
- 2. Studies comparing different types of blended foods**
- 3. Efficacy and effectiveness in region other than Africa, such as Asia and Latin America**
- 4. Result on lean body mass increase**
- 5. Long term efficacy outcome to explore the optimal duration of treatment for MAM**

IBFAN Statement

on

Cochrane Review

on

Commercial Ready –to-use-Therapeutic Foods

- **IBFAN recognizes that RUTFs and other commercial products are considered useful by many agencies in the treatment of SAM, largely because of their convenience**
- **Convenience cannot be the only criteria**
- **UN bodies and policy makers must ensure that factors like robust evidence of efficacy, cost, long term impact on nutrition, sustainability and replacement of traditional feeding practices are considered before products are promoted.**



**THANK
YOU**