

MANGO PROJECT

RANDOMIZED CONTROL TESTING IN NON-INFERIORITY

Where: 10 health centers in the district of Fada N'Gourma, Burkina Faso

When: 2015-2020

Who: 801 children aged 6 to 59 months SAM according to WHZ < -3 and/or MUAC < 115mm with appetite

What: To prove under ideal conditions the efficacy of a reduced dose of RUTF compared to a standard dose during the treatment of uncomplicated Severe Acute Malnutrition in children aged 6-59 months.



Standard Dose
n=399



Reduced Dose
n=402

Reduced dose from 3rd week onward, according to the child's weight.

Scientific Partners and Funders :

CIFF, ECHO, HIF- ELRHA, AAH Foundation
Univ. of Copenhagen, Centers for Disease Control and Prevention, (CDC, USA)

VITAMIN A AND IRON STATUS

INITIAL VITAMIN A AND IRON DEFICIENCIES WERE REDUCED IN BOTH GROUPS

Data collection

Blood samples taken from 801 SAM children at admission and discharge.

Biomarkers used to assess iron and vitamin A deficiencies

Anemia	Hemoglobin (Hb) < 110g/L
Storage Iron Deficiency	Serum Ferritin (SF) < 12 µg/L
Tissue Iron Deficiency	Soluble Transferrin Receptor (sTfR) > 8.3mg/l
Iron Deficiency Anemia	Hb < 110 g/L et SF < 12 µg/l
Vitamin A Deficiency	Retinol Binding Protein (RBP) < 0.7µmol/l

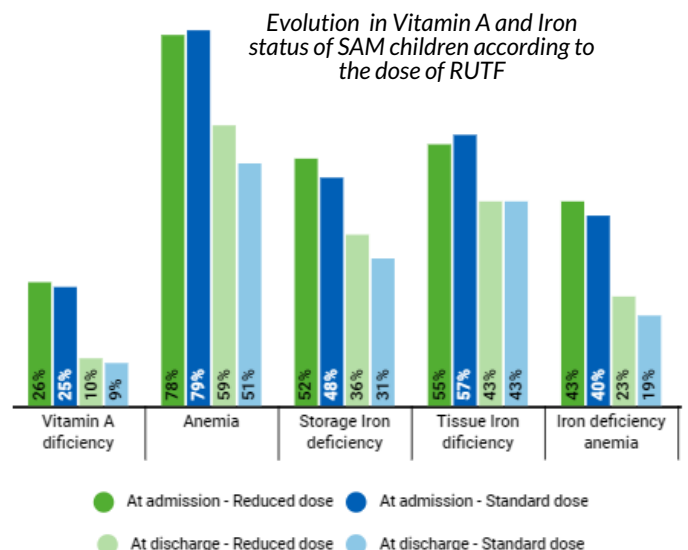
*Results adjusted based on 2 biomarkers of inflammation (CRP & AGP)

Results

Mean concentrations of all biomarkers of vitamin A and iron status improved between admission and discharge. Vitamin A deficiency decreased in the reduced group from 26% at admission to 10% at discharge and from 25% to 9% in the standard group. Iron deficiency anemia (IDA) decreased from 43% at admission to 23% at discharge for the reduced dose group and from 40% to 19% for the standard dose group.

There were no significant differences in Vitamin A deficiency, Storage and Tissue Iron deficiency and IDA between the two groups. But the reduced dose group had higher anemia (+9%) and lower hemoglobin, although this was marginally significant.

Recovered SAM children still had Vitamin A (9%) and Iron (35%) deficiencies compared to healthy children.



Key takeaways

The reduced dose has a similar effect as the standard dose on correcting Vitamin A and Iron deficiencies, except for hemoglobin which is slightly lower. Overall, in both groups, the treatment does not fully restore normal Vitamin A and Iron status.

GLOSSARY

- IDA** Iron Deficiency Anemia
- MUAC** Mid Upper Arm Circumference
- RUTF** Ready-to-Use Therapeutic Food
- SAM** Severe Acute Malnutrition
- WHZ** Weight For Height Z-score