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Effect of immunitum supplementation on prevention of recurrent infectious episodes in children with moderate malnutrition: a randomised, double-blind, placebo-controlled trial

Submission date
06/05/2017

Recruitment status
No longer recruiting

Registration date
04/07/2017

Overall study status
Completed

Last Edited
01/04/2019

Condition category
Infections and Infestations

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[_] Record updated in last year

Plain English summary of protocol

Background and study aims:
Improving child survival remains a significant challenge in low-income countries. The leading causes of death among children younger than five years of age are still preventable conditions including malaria, sudden chest infections and diarrheal diseases. In addition, malnutrition is still very common in low-income countries. It accounts for nearly half of the burden of under-five child death mainly through increasing vulnerability to infections. The aim of this study is to evaluate the effect of immunitum (an immune system booster micronutrient supplement) in preventing repeated infectious episodes in children with moderate malnutrition.

Who can participate?
Children who are aged 12 to 59 months, have moderate malnutrition and a history of recurrent chest and airways, and digestive system infections

What does the study involve?
Participants undergo a medical examination to determine their eligibility. They are then randomly assigned to one of two groups. Participants in the first group receive a capsule of immunitum to take by mouth twice daily. Those in the second group receive a capsule of a placebo (dummy drug) to take by mouth twice daily. Participants are followed up monthly for 12 months. The follow up include clinical examination, assessment of growth (weight and height) and general vitality. Blood and stool samples are taken at the start of the study and then during the sixth and twelfth months of the follow up.

What are the possible benefits and risks of participating?
Participants may benefit from the expected improvement in immune system and decrease in the number and severity of infectious episodes common in children with malnutrition. The risk to participants is minimal to none. There are no expected side effects as a result of taking the

supplement. However, participants are checked at each follow up and, in between, they are encouraged to report any unusual signs/symptoms.

Where is the study run from?
1. Gakurazo Health Center (Rwanda)
2. Kamabuye Health Center (Rwanda)
3. Mayange Health Center (Rwanda)

When is study starting and how long is it expected to run for?
March 2012 to October 2013

Who is the main contact?
Dr Lisine Tuyisenge
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Contact information

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Scientific

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
RPA0001

Study information

Scientific Title
Effect of immunitum supplementation on prevention of recurrent infectious episodes in children (aged 12 - 59 months) with moderate malnutrition: a randomised, double-blind, placebo-controlled trial

Study objectives
Daily supplementation of immunitum reduces infectious episodes in children with moderate malnutrition.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Rwanda National Ethic Committee (RNEC), ref: 158/RNEC/2011

Study design
Randomised double-blind placebo-controlled trial

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Other

Study type(s)
Prevention

Participant information sheet
See additional files (in French)

Health condition(s) or problem(s) studied
Recurrent infectious diseases in children with malnutrition:
1. ENT sphere infections
2. Broncho-pulmonary infections
3. Gastrointestinal tract infections
4. Malaria

Interventions
Participants are randomly allocated to one of two groups using a 1:1 randomisation at the time of enrolment to allocate five participants in each arm for every round of ten enrollments. The study is double-bling, with the study and control products being indistinugishable in shape, size, colour and taste. They are pre-labeled for the entire study by a third-party person who does not play a role in the study implementation.

Group 1: Participants in this group receive an oral capsule of immunitum twice daily.

Group 2: Participants receive the placebo oral capsule which is taken twice daily.

Participants in both groups receive the treatment for 12 months. Clinical follow up and study visits are the same for both groups, with the study product given at the time of enrollment and randomisation and then participants are seen monthly for a clinical follow-up, nutritional status and treatment compliance until month 12.

Intervention Type
Supplement

Primary outcome measure
1. Incidence of infectious diseases (e.g., ENT sphere infections, broncho-pulmonary infections, gastrointestinal tract infections, and malaria) common in children (12-59 months) with moderate malnutrition as defined by WHOis assessed by a trained general medical doctor with experience in pediatric case management in district hospitals (supervised daily and closely by an experienced pediatrician) Each enrolled participant was discussed together at her arrival at health center, on regular appointments, and every time a family called saying that the child has a health problem. In addition, when recruited children arrived to health centers, they were seen by a trained nurse working regularly in PCIME or IMCI (Integrated Management of Childhood Illness), who records the case in a dedicated register and reported the case immediately on phone when urgent or complicated situations. Otherwise the case was reported to the study team during the following monthly visit.
2. Severity and length (in days) of each infectious episode is measured by the medical doctor who is assigned to see participants from the beginning of the disease and follow participant till the end of episode of the disease. Symptoms notified at the beginning are verified every day by a community health worker who see the participant twice a day for giving the immunitum

/placebo and asks questions about the signs and symptoms of the disease at each visit then records in the trial notebook which is presented to the medical doctor at the regular visit at the health center or for severe cases at the district hospital, when the child is hospitalized.

Secondary outcome measures
1. Weight and height are measured using standard anthropomorphic techniques at health center during each monthly visit for 12 months
2. General vitality is assessed using the general vitality questionnaire that measures apathy, sleep, feeding and fatigue; at health center during each monthly visit for 12 months
3. Tolerance and compliance is assessed by the assigned community health worker at home, and then by the study team at health center during each monthly visit for 12 months
4. Proteinemia is measured using spectrophotometry, transferrin is measured by turbidimetry, CRP is measured by ELISA, blood sugar is measured by spectrometry, hemoglobin is measured by spectrometry, erythrocyte sedimentation rate, RBC, WBC, thick blood smear, HIV, stool (for parasites and culture when child has diarrhea, one of the stool sample taken at 12 months will be analysed for microbiome composition) are measured using sample analysis by specific lab techniques for each lab exam and following well defined lab protocols at baseline, six and 12 months
5. Levels of vitamins A, B1, B2, B9, B12, C, D, E, PP are measured using high-performance liquid chromatography at baseline, six and 12 months
6. Levels of iodine will be determined by mass spectrometry, sodium, potassium and chlorine by ion-selective electrode (ISE), selenium by atomic absorption spectroscopy, zinc by atomic absorption spectrophotometry, and iron by spectrophotometric assay at baseline, six and 12 months
7. Genomic analyses will be done by single nucleotide polymorphism and proteomics by electrophoresis at baseline, six and 12 months

Overall study start date
16/03/2012

Completion date
18/10/2013

Eligibility

Key inclusion criteria
1. Children aged 12 to 59 months
2. Moderate malnutrition as per WHO criteria
3. History of recurrent infectious episodes of upper and lower respiratory tract and gastrointestinal tract

Participant type(s)
Patient

Age group
Child

Lower age limit
12 Months

Upper age limit

59 Months

Sex
Both

Target number of participants
220

Key exclusion criteria
1. Children aged less than 12 months and 60 months and over
2. Suffering from severe malnutrition (MUAC<115 mm et W/A ≤ - 3 Z Score et H/A ≤ - 3 Z Score)
3. Suffering from a progressive disease (Tuberculosis, HIV)

Date of first enrolment
24/09/2012

Date of final enrolment
18/10/2012

Locations

Countries of recruitment
Rwanda

Study participating centre
Mayange Health Center
Bugesera
Rwanda
c/o 01

Study participating centre
Kamabuye Health Center
Bugesera
Rwanda
c/o 01

Study participating centre
Gakurazo Health Center
Bugesera
Rwanda
c/o 01

Sponsor information

Organisation
Foundation Actigenomics

Sponsor details
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Sponsor type
Other

Funder(s)

Funder type
Industry

Funder Name
Actigenomics SA

Funder Name
Africa Alive

Funder Name
Sucafina

Funder Name
Nutrigenomics

Funder Name
Renta 4

Results and Publications

Publication and dissemination plan
Planned peer reviewed publication and conference presentations.

Intention to publish date
31/12/2017

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study is not expected to be made available due to access being required by the Rwanda National Ethics Committee (RNEC) and by the principal investigator Dr. Lisine Tuyisenge tuyislisine@gmail.com.

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	version V2	03/07/2017	01/04/2019	No	Yes