Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Jun 2026

The role of synbiotic in the prevention of necrotizing enterocolitis in preterm neonates.

Protocol summary

Study aim
Investigate the effect of synbiotic on breast feeding tolerance in preterm neonate and the age of the full oral nutrition and necrotizing enterocolitis amount.

Design
This is a randomized, double-blind, placebo-controlled study. 118 preterm infants are randomly divided into two equal groups.neonates in the first group will receive 1/25 cc/kg/ day oral symbiotic, and the second group will receive 1/25 cc/kg/day distilled water as placebo.In both groups, in case of pre-daily milk intake tolerance, milk intake will increase by 20 cc/kg/day and before and after the intervention, some factors will be recorded including the time to reach full oral nutrition, duration of hospitalization, weight of discharge, status of necrotizing enterocolitis and its severity, and neonate mortality.

Settings and conduct
The study was performed in Imam Reza Hospital in Kermanshah after obtaining written consent from parents by a randomized, double-blind manner. The researcher, patients, and parents are unaware of the type of prescription drug.

Participants/Inclusion and exclusion criteria
Inclusion criteria: Gestational age less than 34 weeks, elapse of maximum 28 days after birth, birth weight 1000 to 1500 gr. Exclusion criteria: Certain and choronic diseases

Intervention groups
1/25 cc/kg/day oral synbiotic in treatment group.1/25 cc/kg/day distilled water as placebo in control group (placebo sachet with the same shape and color to synbiotic)

Main outcome variables
The breast milk tolerance The rate of Necrotizing enterocolitis The age of the full oral nutrition

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20180519039715N2**
Registration date: **2019-10-06, 1398/07/14**
Registration timing: **retrospective**

Last update: **2019-10-06, 1398/07/14**
Update count: **0**

Registration date
2019-10-06, 1398/07/14

Registrant information

Name
Sara Hookari

Name of organization / entity

Country
Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2018-09-23, 1397/07/01

Expected recruitment end date
2019-09-22, 1398/06/31

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The role of synbiotic in the prevention of necrotizing enterocolitis in preterm neonates.

Public title
The role of synbiotic in the prevention of necrotizing enterocolitis in preterm neonates.
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Admission to the Neonatal Intensive Care Unit (NICU) at birth Gestational age less than 34 weeks (early preterm) Elapse of maximum 28 days after birth birth weight 1000 to 1500 gr Lack of affliction with gastrointestinal obstruction, amphalocele, gastroschis, congenital heart disease, clinical or proven sepsis, grade 2 and 3 asphyxia No history of immunodeficiency among relatives No maternal drug addiction Avoidance of breast-feeding to feed neonate Avoidance of synbiotic supplementation consumption by the infant mother
Exclusion criteria:
Gestational age over 34 weeks Elapse of over 28 days since the birth of infant Birth weight less than 1000 (due to high mortality rates) and more than 1500 gr Neonate's affliction with gastrointestinal obstruction, amphalocele, gastroschis, congenital heart diseases, clinical or proven sepsis, grade 2 and grade 3 asphyxia History of immunodeficiency among relatives Neonate with addicted mother Babies fed with powdered milk Oral administration of synbiotic supplement by neonate's mother
Age
From **1 day** old to **28 days** old
Gender
Both

Phase
1
Groups that have been masked

- Participant
- Investigator
- Outcome assessor
- Data analyser

Sample size
Target sample size: **118**
Randomization (investigator's opinion)
Randomized
Randomization description
Randomization was performed by assigning one to one according to the neonatal medical record number. The neonate with the even case number were assigned to the intervention group and the neonate with the odd case number were assigned to the placebo group.
Blinding (investigator's opinion)
Double blinded
Blinding description
In this study, the parents of the participants were blind and unaware of the type of drug (synbiotic or placebo).The main researcher is blind. One of the staff is responsible for prescribing and secretly prescribing the drug and the resident and the other nurse are responsible for data collection.The data analyzer also announces the results in groups A and B. The efficacy evaluator is also unaware of the type of medication prescribed for each patient.
Placebo
Used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Kermanshah University of Medical Sciences
Street address
Building No.2, Shahid Beheshti Blvd, Vice Chancellor for Research Affairs, Kermanshah University of Medical Sciences Kermanshah
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Postal code
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Approval date
2018-03-14, 1396/12/23
Ethics committee reference number
IR.KUMS.REC.1396.702

Health conditions studied

1

Description of health condition studied
Necrotizing enterocolitis
ICD-10 code
P77
ICD-10 code description
Necrotizing enterocolitis of newborn

Primary outcomes

1

Description
Duration to reach full oral nutrition (150 cc kg/day)
Timepoint
Measuring the time from birth to reach the age of full oral nutrition (150 cc/kg/day)
Method of measurement
Asking parents

2

Description
Breast feeding tolerance
Timepoint

Measuring the amount of breast milk consumed per day and then daily until discharge

Method of measurement

Asking parents

3

Description

Necrotizing enterocolitis

Timepoint

Measurement from birth to discharge and daily

Method of measurement

Stage 1 (suspicion to enterocolitis): The symptoms include apnea, lethargy, bloody stool, abdominal distension, temperature instability, the residue in the stomach, lack of radiologic evidence. Stage 2 (proven enterocolitis): Symptoms of stage I + thrombocytopenia ± mild metabolic acidosis, abdominal tenderness, and presence of pneumatosis or gas in the portal vein. Stage 3 (advanced enterocolitis): Symptoms of stage 2 + hypotension, bradycardia, severe apnea, metabolic and respiratory acidosis, diffuse intravascular coagulation, clear abdominal tenderness, neutropenia, pneumoperitonitis.

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: 1/25 cc/kg/day oral synbiotic (Made by bio-fermentation Co. in IRI, 1/25 cc synbiotic combination consisting of probiotic compounds contains Lactobacillus reuteri 4*108 CFU, Lactobacillus rhamnosus 2*109 CFU, Bifidobacterium infantis 3*108 CFU and prebiotic compounds including Fructooligosaccharides (FOS) 3% and other ingredients including Sunflower oil, MCT oil (Medium-chain triglycerides), Silicon dioxide (SiO2) and Natural flavor).

Category

Prevention

2

Description

Control group: 1/25 cc/kg/day oral distilled water as placebo (placebo sachet with the same shape and color to symbiotic).

Category

Placebo

Recruitment centers

1

Recruitment center

Name of recruitment center

Imam Reza Hospital

Full name of responsible person

Dr. Ali Soroush

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Sponsors / Funding sources

1

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Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Kermanshah University of Medical Sciences

Proportion provided by this source

100

Public or private sector

Public

Domestic or foreign origin

Domestic

Category of foreign source of funding

empty

Country of origin

Type of organization providing the funding

Academic

Person responsible for general inquiries

Contact

Name of organization / entity

Kermanshah University of Medical Sciences

Full name of responsible person
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
Adherence to study ethical standards
Study Protocol
Undecided - It is not yet known if there will be a plan to make this available
Statistical Analysis Plan
Undecided - It is not yet known if there will be a plan to make this available
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available
Analytic Code
Undecided - It is not yet known if there will be a plan to make this available
Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available