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The effect of probiotic supplements on infants with crying/fussing caused by digestive problems (colic)

Submission date
27/11/2019

Recruitment status
No longer recruiting

Registration date
10/12/2019

Overall study status
Completed

Last Edited
28/09/2021

Condition category
Signs and Symptoms

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Infant with persistent crying/fussing is a behavioral problem in early infancy that involve long crying bouts and hard-to-soothe behavior for no apparent cause. The parents and caretakers often seek many treatments for these babies including the use of several drugs with serious side effect, vegetable fiber, lactose, sucrose solution, hypoallergenic diet, and herbal tea. But there still is no single effective and safe intervention or drug for babies' colic. Recent studies have reported that gut microbiota in these infants is imbalanced by lower amounts of beneficial bacterial and higher amounts of harmful bacterial. Thus, several researchers have suggested that specific probiotics may be useful for improving imbalance gut bacterial and reducing babies' crying time.
This study sought to explore the effectiveness of the two-combined probiotic strains in treating babies' crying and fussing.

Who can participate?
Babies aged under 12 weeks, with persistent crying/fussing

What does the study involve?
Eligible colic infants are randomly allocated to receive either the two specific probiotics by oil drops as the intervention group (IG) or a reference oil drop without probiotics as the placebo group (PG). Babies' caregivers administer five drops of one of the product orally to each infant daily for 21 days. Babies' caregivers are taught to use the Baby's Dietary to record the infant crying/fussing time and the frequency, the numbers of babies who were responding to the treatment, stool consistency, and frequency of stool.

What are the possible benefits and risks of participating?
The babies who are taking part in the study can decrease their crying/fussing behaviors, improve their fecal consistency and frequency and increase the caregivers' life quality during the intervention. The two specific strains in the investigational product are very safe and suitable for infant who meeting the inclusion criteria. And if an event occurs related to the conduct of the study or the development of the test product which may affect the safety of the study subjects,

the founder and the study investigator may take appropriate measures to protect the subjects against immediate hazards.

Where is the study run from?
1. Angel Children's Hospital, Chengdu, China
2. Qingbaijiang Maternal and Child Health Hospital, China
3. Chengdu Caojiaxiang Community Healthcare Center, China
4. Huili Maternity and Child Care Center, China

When is the study starting and how long is it expected to run for?
June 2018 to November 2019

Who is funding the study?
Maternal and Infant Health and Care Science Laborotory, China

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
MIHC/2017/10/AKO2018

Study information

Scientific Title
The efficacy of three weeks' daily supplementation with two-combined probiotic strains on infant colic

Study objectives
In comparison to the placebo group, the two-combined probiotic strains, B. longum CECT7894 (KABP042) and P. pentosaceus CECT8330 (KABP041), would reduce mean daily crying or fussing time, decrease daily episodes of crying or fussing, and improve the pediatric quality of life inventory after the intervention.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 05/03/2018, Institutional ethics committee of Angel Children's Hospital (No.46-1 Section 4 South Renmin Road Wuhou District, Chengdu City, Sichuan Province, 610042, China; +86-028-67899999-8063; no email provided), ref: 2018004

Primary study design
Interventional

Study design
Randomized double-blinded placebo-controlled parallel-group multicentre study

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Colic

Interventions
All eligible colic infants are randomized to receive either the probiotics as the intervention group (IG) or a reference product without probiotics as the placebo group (PG). The probiotic formula, comprising a sunflower oil suspension of the strains B. longum CECT7894 (KABP042) and P. pentosaceus CECT8330 (KABP041), contains 1 billion Colony-Forming Units (CFU) in each drop (1:1 for the two strains). Five drops (equal to 1 billion CFU) are taken once daily preferably at the same time of the day, e.g. in the morning. The reference product (placebo) is an identical sunflower oil without probiotics. Both the probiotics and the placebo are produced by AB-Biotics S.A.

Caregivers administer five drops of the study product orally to each infant daily for 21 days. The dose is not required to be given at a fixed time or given with feeds. However, for compliance and ease of administration, each family is recommended to give the dose with the same feed each day. The total duration of follow-up for all study arms is 13 months.

Randomization:
A blocked randomization schedule that maintains a balance between treatment arms will be prepared by an independent statistician, not directly involved in the analysis of the study results. The RAND function of Excel (Microsoft, Redmond, WA, USA) will be used to generate randomly permutated codes. To minimize potential biases, the study is double-blinded whereby treatment allocation is concealed from all study investigators and participants.

Intervention Type
Supplement

Primary outcome(s)
Mean daily crying or fussing time measured using parental self-report each day of the intervention

Key secondary outcome(s)
1. Number of daily episodes of crying or fussing measured using parental self-report each day of the intervention.
2. Infant quality of life measured using the pediatric quality of life inventory at the 7th, 14th and 21st day after the intervention

Completion date
01/11/2019

Eligibility

Key inclusion criteria
1. Crying or fussing episodes lasting more than 3 hours per day and occurring at least 3 days per week within 7 days prior to enrollment (ROME IV criteria)
2. Less than 3 months (12 weeks) of age
3. Equal to or greater than 37 weeks of gestation at birth
4. Vaginal delivery
5. Birth weight of more than 2500g
6. Provided voluntary written informed consent from parents of the infant

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Sex
All

Total final enrolment
112

Key exclusion criteria
1. Average weight gain < 100 grams/week from birth to the last recorded weight
2. Major medical problems (e.g. immunocompromised disease, major developmental or genetic abnormality)
3. Gastrointestinal disorder
4. Taking antibiotics four weeks prior to enrollment
5. Using the same probiotic strains in this study two weeks prior to enrollment
6. Taking antibiotics during the intervention

Date of first enrolment
01/06/2018

Date of final enrolment
01/06/2019

Locations

Countries of recruitment
China

Study participating centre
Qingbaijiang Maternal and Child Health Hospital
Qingbaijiang
China
610300

Study participating centre
Chengdu Caojiaxiang Community Healthcare Center
Chengdu
China
610084

Study participating centre
Huili Maternity and Child Care Center
Huili
China
615100

Study participating centre
Angel Children's Hospital
Chengdu
China
610042

Sponsor information

Organisation
Angel Children's Hospital

ROR
https://ror.org/008x2am79

Funder(s)

Funder type
Hospital/treatment centre

Funder Name
Maternal and Infant Health and Care Science Laborotory

Results and Publications

Individual participant data (IPD) sharing plan
The current data sharing plans for this study are unknown and will be available at a later date

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		10/09/2021	28/09/2021	Yes	No