ISRCTN93834662 https://doi.org/10.1186/ISRCTN93834662

The beneficial effect on gastrointestinal discomfort and intestinal function of a dietary supplement based on a probiotic blend, fructooligosaccharides, chamomile extract, and B vitamins in patients with irritable bowel syndrome

Submission date 25/11/2024	**Recruitment status** No longer recruiting	[X] Prospectively registered [ ] Protocol [ ] Statistical analysis plan [ ] Results [ ] Individual participant data [ ] Record updated in last year
Registration date 26/11/2024	**Overall study status** Completed	
Last Edited 29/07/2025	**Condition category** Digestive System	

Plain English summary of protocol

Background and study aims

The product tested in this study, trade name Pegaso® EnteroDophilus®, is a food supplement based on the combination of specific probiotics as lactobacilli and bifidobacteria, which promote the balance of intestinal microflora (Lactobacillus acidophilus LA1 + Lactobacillus reuteri LR92 + Bifidobacterium breve Bbr8), with prebiotic fructooligosaccharides (FOSs), chamomile aerial parts extract (Matricaria chamomilla L.) titrated 10% in apigenin for its contribution to normal gastrointestinal motility, and vitamin B1, B2, and B6 able to maintain normal mucous membranes and support energy metabolism. The clinical study will evaluate the effectiveness of Pegaso® EnteroDophilus® in functional intestinal complaints based on microbiota alterations (dysbiosis) such as cramps, bloating, and hyperactive intestine. Functional gastrointestinal disorders (FGIDs) are defined as a complex of complaints with many sufferers worldwide, including in Italy according to a recent study that involves gut health but also implies mood disorders. Indeed, epidemiological data provide clear evidence that in subgroups of cases, gastrointestinal (GI) symptoms occur first and mood disorders occur later, while in other patients the opposite appears to occur. Due to the close connection between the gut and the brain, chronic intestinal complaints reduce the quality of physical and psychological life. These disorders include irritable bowel syndrome (IBS), a long-term gastrointestinal disorder, classified as a functional disorder, which causes recurrent attacks of abdominal pain or discomfort associated with bowel habits. The aim of this study is to evaluate the effectiveness of a food supplement containing a mixture of a probiotics pool, fructo-oligosaccharides, chamomile extract (Matricaria chamomilla L. – aerial parts), and B vitamins, for the management of perceived gastrointestinal symptoms and intestinal function balance in patients with FGIDs.

Who can participate?
Patients aged 18-70 years of both sexes with FGIDs, in particular IBS-D, characterized by various symptoms including abdominal pain, fullness, bloating, flatulence, and frequent bowel movements.

What does the study involve?
Participants are randomly allocated to one of two groups. One group will be given the food supplement and the other group will be given a placebo for 3 months (12 weeks), according to the following dosage: two capsules per day to be swallowed with a small amount of water.

What are the possible benefits and risks of participating?
Based on the clinical and preclinical data currently available on the active ingredients that make up the Pegaso® EnteroDohilus® capsules food supplement, it is hoped that following its intake, an improvement in symptoms and gastrointestinal function may occur, with a positive impact on the perceived quality of life. However, it cannot be said that the treatment is certainly effective.

Where is the study run from?
COMEGEN General practitioner's medical center (Italy)

When is the study starting and how long is it expected to run for?
March 2024 to July 2025

Who is funding the study?
Schwabe Pharma Italia S.r.l. (Italy)

Who is the main contact?
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Study information

Scientific Title
Efficacy study of a dietary supplement based on a probiotic blend, fructooligosaccharides, chamomile extract (Matricaria chamomilla L. – aerial parts), and B vitamins on gastrointestinal discomfort and intestinal function in patients with Irritable Bowel Syndrome with dysbiosis and increased bowel activity, impacting quality of life: a single-center, placebo-controlled, randomized, parallel arms, double-blind clinical study, with a follow-up period

Acronym
DPEG24

Study objectives
The study will aim to evaluate the efficacy of a dietary supplement based on a combination of probiotics, fructo-oligosaccharides, chamomile extract (Matricaria chamomilla L. – aerial parts), and B vitamins for the improvement of gastrointestinal discomfort global symptoms and the regulation of bowel movements in subjects with functional gastrointestinal disorders (FGIDs), in particular Irritable Bowel Syndrome - Diarrhea predominant form (IBS-D), characterized by various symptoms including abdominal pain, fullness, bloating, flatulence, and frequent bowel movements.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 04/09/2024, Ethics Committee Campania 1 (Via Mariano Semmola, 53, Naples, 80131, Italy; +39 (0)81/17770131; comitatoetico@istitutotumori.na.it), ref: Prot n° 04/24

Primary study design
Interventional

Study design
Interventional monocentric randomized parallel-group two-arm double-blind placebo-controlled clinical trial

Study type(s)
Prevention, Quality of life, Efficacy

Health condition(s) or problem(s) studied
Functional gastrointestinal disorders (FGIDs), in particular irritable bowel syndrome - diarrhea predominant form (IBS-D)

Interventions
The subjects recruited in the present clinical study will be randomized into the following experimental groups:
Group 1: Subjects will receive the food supplement, which contains a combination of probiotics, fructooligosaccharides, chamomile extract (Matricaria chamomilla L. – aerial parts), and B vitamins.
Group 2: Subjects will receive the placebo.

The treatment period duration will be 3 months (84 days). The follow-up period, without any treatment, will be 1 month (28 days).

The two treatments will be made unrecognizable to maintain the double-blind design as the packaging is identical, and the dosage forms are in the same color, shape, weight, and taste.

The randomization sequence will be generated by a statistician using STATA 16 software (Stata Statistical Software: Release 16. College Station, TX: StataCorp LLC) and the randomization list has been kept hidden. The participants were assigned to each of the two treatments randomly and unpredictably, through simple randomization. The randomization code will consist of a three-digit number as indicated in the respective Case Report Form (CRF).

Participants will undergo five visits (baseline, before treatment initiation = t0, after 28 days from the start of the first treatment period = t1, after 56 days from the start of the first treatment period = t2, after 84 days from the start of the first treatment period = t3, 28 days after the end of treatment, the conclusion of the follow-up period, tf) in an outpatient setting. After each clinical visit, all data are filled in the CRF by physicians.

The clinical trial design is reported below:
T0 (baseline, Before treatment initiation):
- Evaluation of eligibility through the application of inclusion and exclusion criteria.

- An HIV test will be performed using a combined rapid saliva test (4th-generation test), which detects both HIV antibodies produced by the individual and viral components (such as the p24 antigen). As reported on the Ministry of Health's website (https://www.salute.gov.it/portale/hiv/dettaglioContenutiHIV.jsp?lingua=italiano&id=185&area=aids&menu=vuoto), this test can detect infection as early as 20 days post-exposure. The HIV test result is available within a few minutes and will be conducted at the medical office. If the result is indeterminate or reactive (positive), the subject will not be recruited.
- FOR WOMEN OF CHILDBEARING AGE: At the initial visit, women of childbearing age will undergo a pregnancy test using a test that measures beta-HCG (human chorionic gonadotropin) levels, which begin to be produced at the time of implantation in the uterine wall, approximately one week after fertilization. This test, with results available within a few minutes, will be conducted at the medical office. If the result is indeterminate or positive, the subject will not be recruited.
- Randomization
- Validated questionnaire for self-assessment of gastrointestinal symptom-related quality of life: Gastrointestinal Quality of Life Index (GIQLI)
- Validated questionnaire for the self-assessment of IBS-related symptoms: IBS-Severity Scoring System (IBS-SSS)
- Perception of overall quality of life with Short Form 12 questionnaire (SF-12)
- Stool consistency – Bristol Stool Form Scale (BSFS)
- Bowel movement frequency (BM) average BM/week for the previous 4 weeks
- Delivery of the Bowel Function Diary
- In a sub-group of a total of 30 subjects (15 from the active group and 15 from the placebo group) collection of fecal samples for the analysis of relative abundance of probiotics and inflammatory markers, respectively.

T1 (After 28 days of treatment):
- GIQLI
- IBS-SSS
- SF-12
- BSFS
- BM
- Collection and delivery of the Bowel Function Diary for the following treatment period
- Collection of treatment boxes (compliance assessment) and delivery of boxes for the subsequent treatment

T2 (after 56 days of treatment):
- GIQLI
- IBS-SSS
- SF-12
- BSFS
- BM
- Collection and delivery of the Bowel Function Diary for the following treatment period
- Collection of treatment boxes (compliance assessment) and delivery of boxes for the subsequent treatment

T3 (after 84 days of treatment):
- GIQLI
- IBS-SSS
- SF-12
- BSFS
- BM

- Collection and delivery of the Bowel Function Diary for the following treatment period
- Collection of fecal samples for the analysis of relative abundance of probiotics and inflammatory markers, respectively.
- Collection of treatment boxes (compliance assessment)

Tf (28 days after the end of treatment, conclusion of the follow-up period):
- GIQLI
- IBS-SSS
- SF-12
- BSFS
- BM
- Collection of the Bowel Function Diary
- Collection of fecal samples for the analysis of the relative abundance of probiotics

During the study, the following practices will be applied. During the entire duration of the study, subjects will be prohibited from taking dietary supplements and medications, except those for the regulation of intestinal function, provided they are reported to the physician and recorded as “salvage treatment.” Throughout the study, subjects will be required to complete the bowel function diary. The recruited subjects who are part of the subgroup of 30 participants (15 from the placebo group and 15 from the treatment group) must deliver fecal samples to the experimental center at predetermined visits. The center will handle the storage and shipment of these samples to the Department of Experimental Medicine, Microbiology Section, University of Campania Luigi Vanvitelli, Piazza Luigi Miraglia 02, 80138 Naples, which will conduct the analyses. The Microbiology Section laboratory at the University of Campania Vanvitelli has a designated area for the storage of biological samples. These samples will be kept for an additional 2 months after the study concludes. It is specified that these samples will be retained for the purposes of the study and will be destroyed after this period.

Intervention Type
Supplement

Primary outcome(s)
1. Gastrointestinal symptom-related quality of life assessed using the Gastrointestinal Quality of Life Index (GIQLI) at baseline (t0), day 28 (t1), day 56 (t2), day 84 (t3), and 28 days post-treatment (follow-up - tf)
2. IBS-related symptoms assessed using the IBS-Severity Scoring System (IBS-SSS) at baseline (t0), day 28 (t1), day 56 (t2), day 84 (t3), and 28 days post-treatment (follow-up - tf)

Key secondary outcome(s)
1. Overall quality of life assessed using Short Form-12 (SF-12) at baseline (t0), day 28 (t1), day 56 (t2), day 84 (t3), and 28 days post-treatment (follow-up - tf)
2. Stool consistency assessed using the Bristol Stool Form Scale (BSFS) at baseline (t0), day 28 (t1), day 56 (t2), day 84 (t3), and 28 days post-treatment (follow-up - tf)
3. Number of bowel movements per week (Bowel Movements - BM), reported by the subject at each study visit (average BM/week for the previous 4 weeks) and recorded in the daily bowel function diary throughout the study period at baseline (t0), day 28 (t1), day 56 (t2), day 84 (t3), and 28 days post-treatment (follow-up - tf)
4. The frequency and severity of Functional Gastrointestinal Disorders (FGIDs) evaluated using a 5-point Likert scale (0 no discomfort - 5 maximum discomfort), included in the daily bowel function diary completed for the entire duration of the study
5. The frequency of "salvage treatment" use, including motility-inhibiting medications, recorded

through entries in the daily bowel function diary completed for the entire duration of the study
6. Intestinal inflammation assessed through the analysis of fecal inflammatory markers calprotectin and zonulin in a cohort of 30, with 15 from the treatment group and 15 from the placebo group, at baseline (t0), day 84 (t3)
7. Relative abundance of microbial species present in the treatment (Lactobacillus reuteri LR92, Lactobacillus acidophilus LA1, Bifidobacterium breve Bbr8) assessed to evaluate the colonization ability of the treatment under investigation. The investigation will be conducted on fecal samples. This analysis will be performed on a cohort of 30 subjects, with 15 from the treatment group and 15 from the placebo group at baseline (t0), day 84 (t3), 28 days post-treatment (follow-up – tf)

Completion date
30/07/2025

Eligibility

Key inclusion criteria
1. Are aged between 18 and 70 years
2. Are able to understand and sign the informed consent
3. Have a negative HIV test
4. Have a negative pregnancy test
5. Exhibit symptoms of IBS-D for at least 3 months (with onset at least 6 months prior), characterized by recurrent abdominal pain occurring at least once per week, associated with two or more of the following criteria: pain associated with defecation, pain associated with a change in stool frequency, pain associated with a change in stool form
6. Have, on a weekly basis, stool consistency with more than 25% of loose stools and less than 25% of hard stools in the preceding month
7. Have a GIQLI score ≤125
8. Have an IBS-SSS score ≥75 (mild IBS) and <300 (moderate IBS)
9. Are capable of understanding and adhering to the protocol requirements
10. Are not currently taking and have not taken any medication throughout the study period, except for medications that inhibit intestinal function. When necessary, their use will be recorded as salvage treatment

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 Years

Upper age limit
70 Years

Sex

All

Key exclusion criteria
1. Are aged <18 or >70 years
2. Are pregnant, suspected to be pregnant, or planning to become pregnant
3. Are breastfeeding
4. Are dependent or not self-sufficient
5. Show unwillingness to collaborate
6. Have difficulties in attending the study site within the required time frames
7. Are deemed ineligible by the principal investigator due to the presence of other conditions considered incompatible with enrollment and requiring pharmacological treatments
8. Have acquired immunodeficiency due to HIV
9. Have known allergies to the ingredients of the experimental products (active or placebo)
10. Have a GIQLI score >125
11. Have an IBS-SSS score <75 (absence of IBS)
12. Have an IBS-SSS score ≥300 (severe IBS)
13. Experience abdominal pain less than once a week
14. Have organic intestinal diseases
15. Have undergone gastrointestinal surgery
16. Have Parkinson's disease or Alzheimer's disease
17. Use opioid medications or other drugs with a significant impact on intestinal function (e.g., antidepressants, aluminum-containing antacids)
18. Abuse alcohol, drugs, caffeine, or theine
19. Are currently taking antibiotics or have taken antibiotics in the last four weeks, or in the past 6 months depending on the intensity and duration of the antibiotic treatment

Date of first enrolment
02/12/2024

Date of final enrolment
10/12/2024

Locations

Countries of recruitment
Italy

Study participating centre
COMEGEN General practitioner's medical center
Viale Maria Bakunin, 41
Naples
Italy
80126

Sponsor information

Organisation
Schwabe Pharma Italia S.r.l.

Funder(s)

Funder type
Industry

Funder Name
Schwabe Pharma Italia S.r.l.

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated and/or analysed during the current study will be published as a supplement to the subsequent results publication.

IPD sharing plan summary
Published as a supplement to the results publication