Clinical trial results:
A RANDOMIZED, CONTROLLED, DOUBLE-BLIND, MULTICENTER CLINICAL TRIAL ON HOME PARENTERAL NUTRITION USING AN OMEGA-3 FATTY ACID ENRICHED MCT/LCT LIPID EMULSION

Summary

EudraCT number	2015-000849-23
Trial protocol	NL GB
Global end of trial date	19 July 2022

Results information

Result version number	v1 (current)
This version publication date	10 August 2023
First version publication date	10 August 2023

Trial information

Trial identification

Sponsor protocol code	HC-G-H-1403

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT03282955
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	B. Braun Melsungen AG, Division Hospital Care
Sponsor organisation address	Carl-Braun-Straße 1, Melsungen, Germany, 34212
Public contact	Medical Scientific Affairs Hospital Care / Clinical Development, B. Braun Melsungen AG, studies@bbraun.com
Scientific contact	Medical Scientific Affairs Hospital Care / Clinical Development, B. Braun Melsungen AG, studies@bbraun.com

Notes:

Paediatric regulatory details

Is trial part of an agreed paediatric investigation plan (PIP)	No
Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial?	No
Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial?	No

Notes:

Results analysis stage

Analysis stage	Final
Date of interim/final analysis	07 July 2023
Is this the analysis of the primary completion data?	Yes
Primary completion date	19 July 2022
Global end of trial reached?	Yes
Global end of trial date	19 July 2022
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

The primary objective of the study is to investigate safety and tolerability of an Omega-3-FA-enriched lipid emulsion in adult patients with chronic intestinal failure (CIF) in need of long-term home parenteral nutrition (HPN). It is aimed to show non-inferiority of the lipid emulsion Lipidem (investigational test product) in comparison to the lipid emulsion Lipofundin MCT (investigational reference product) with regard to liver function.

Protection of trial subjects:

The study was performed in accordance with the ethical principles that have their origin in the "Declaration of Helsinki" and its amendments in force at the time of the study.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	08 January 2018
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	Netherlands: 7
Country: Number of subjects enrolled	Poland: 38
Country: Number of subjects enrolled	United Kingdom: 3
Country: Number of subjects enrolled	France: 21
Country: Number of subjects enrolled	Italy: 5
Worldwide total number of subjects	74
EEA total number of subjects	71

Notes:

Subjects enrolled per age group

In utero	0
Preterm newborn - gestational age < 37 wk	0
Newborns (0-27 days)	0
Infants and toddlers (28 days-23 months)	0
Children (2-11 years)	0

Adolescents (12-17 years)	0
Adults (18-64 years)	61
From 65 to 84 years	12
85 years and over	1

Subject disposition

Recruitment

Recruitment details:

First patient in: 08JAN2018
Last patient out: 24MAY2022
Decision to terminate the study early was taken on 19 July 2022 due to unsufficient recruitment. Eleven initiated sites in PL, IT, NL, UK and F, of which 9 sites successfully enrolled patients and contributed to the analyses.

Pre-assignment

Screening details:

A total of 74 patients were screened (All Patient Screened Set) and enrolled (Intention-to-treat Set, ITT). 2 patients were not exposed to IP and are therefore excluded from all patients treated set (APTS, safety set).

Period 1

Period 1 title	Overall trial (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator

Blinding implementation details:

Blinded IP was provided to those investigational sites where the patient added lipid to the PN by him/herself. In those study sites where either the hospital pharmacy or a compounding unit (CU) prepared AIO PN-admixtures including the IP as the lipid part, unblinded IP was delivered to the pharmacy/ CU. The independent statistician provided randomization envelopes to the unblinded pharmacist for treatment allocation. The label of the AIO admixture did not show any unblinding information.

Arms

Are arms mutually exclusive?	Yes
Arm title	Test group

Arm description:

Omega-3 FA enriched LE Lipidem as lipid component of PN

Arm type	Experimental
Investigational medicinal product name	Lipidem® 200 mg/ml
Investigational medicinal product code	
Other name	Lipoplus®
Pharmaceutical forms	Emulsion for infusion
Routes of administration	Infusion , Intravenous use

Dosage and administration details:

The IPs were delivered as the lipid part of the PN. Besides the lipid, PN contained glucose, amino acids, electrolytes, trace elements and vitamins and were administered according to the individual patient's normal prescription. To be eligible for the study, a patient's prescription should have included a weekly lipid dose of at least 3.0 g lipid per kg (BW).

Arm title	Control group

Arm description:

Lipofundin MCT as lipid component of PN

Arm type	Active comparator
Investigational medicinal product name	Lipofundin MCT
Investigational medicinal product code	
Other name	Medialipide
Pharmaceutical forms	Emulsion for infusion
Routes of administration	Infusion , Intravenous use

Dosage and administration details:

The IPs were delivered as the lipid part of the PN. Besides the lipid, PN contained glucose, amino acids, electrolytes, trace elements and vitamins and were administered according to the individual patient's normal prescription. To be eligible for the study, a patient's prescription should have included a weekly lipid dose of at least 3.0 g lipid per kg (BW).

Number of subjects in period 1[1]	Test group	Control group
Started	38	34
Completed	36	31
Not completed	2	3
Consent withdrawn by subject	1	2
Adverse event, non-fatal	1	1

Notes:

[1] - The number of subjects reported to be in the baseline period are not the same as the worldwide number enrolled in the trial. It is expected that these numbers will be the same.
Justification: 2 subjects had been enrolled, but they have not been treated and were therefore not included in the safety and efficacy analyses population.

Baseline characteristics

Reporting groups	
Reporting group title	Test group
Reporting group description:	
Omega-3 FA enriched LE Lipidem as lipid component of PN	
Reporting group title	Control group
Reporting group description:	
Lipofundin MCT as lipid component of PN	

Reporting group values	Test group	Control group	Total
Number of subjects	38	34	72
Age categorical Units: Subjects			
In utero	0	0	0
Preterm newborn infants (gestational age < 37 wks)	0	0	0
Newborns (0-27 days)	0	0	0
Infants and toddlers (28 days-23 months)	0	0	0
Children (2-11 years)	0	0	0
Adolescents (12-17 years)	0	0	0
Adults (18-64 years)	31	28	59
From 65-84 years	6	6	12
85 years and over	1	0	1
Age continuous Units: years			
arithmetic mean	50.13	52.44	
standard deviation	± 15.82	± 15.50	-
Gender categorical Units: Subjects			
Female	22	10	32
Male	16	24	40
Pathological Classification of Intestinal failure Units: Subjects			
Short bowel syndrome	26	24	50
Intestinal dysmotility	6	6	12
Intestinal fistula	3	3	6
Mechanical obstruction	2	0	2
Extensive small bowel mucosal disease	1	1	2
Underlying Disease of chronic intestinal failure Units: Subjects			
Surgical complications	8	6	14
Mesenteric ischemia	8	5	13
Crohn´s disease	7	5	12
Primary chronic intestinal pseudo-obstruction	3	3	6

Secondary chronic intestinal pseudo-obstruction	0	4	4
Radiation enteritis	1	3	4
Adhesions	2	1	3
Volvulus	0	2	2
Other	9	5	14

Subject analysis sets

Subject analysis set title	All Patients Treated Set
Subject analysis set type	Intention-to-treat

Subject analysis set description:

All randomized patients enrolled in the study (irrespective of the compliance with the planned treatment regimen) identical to all patients of the ITT set who received at least one dose of the trial medication. This was used as Safety Set.

Reporting group values	All Patients Treated Set		
Number of subjects	72		
Age categorical Units: Subjects			
In utero	0		
Preterm newborn infants (gestational age < 37 wks)	0		
Newborns (0-27 days)	0		
Infants and toddlers (28 days-23 months)	0		
Children (2-11 years)	0		
Adolescents (12-17 years)	0		
Adults (18-64 years)	59		
From 65-84 years	12		
85 years and over	1		
Age continuous Units: years			
arithmetic mean	51.22		
standard deviation	± 15.6		
Gender categorical Units: Subjects			
Female	32		
Male	40		
Pathological Classification of Intestinal failure Units: Subjects			
Short bowel syndrome	50		
Intestinal dysmotility	12		
Intestinal fistula	6		
Mechanical obstruction	2		
Extensive small bowel mucosal disease	2		
Underlying Disease of chronic intestinal failure Units: Subjects			
Surgical complications	14		
Mesenteric ischemia	13		

Crohn´s disease	12		
Primary chronic intestinal pseudo-obstruction	6		
Secondary chronic intestinal pseudo-obstruction	4		
Radiation enteritis	4		
Adhesions	3		
Volvulus	2		
Other	14		

End points

End points reporting groups

Reporting group title	Test group
Reporting group description:	
Omega-3 FA enriched LE Lipidem as lipid component of PN	
Reporting group title	Control group
Reporting group description:	
Lipofundin MCT as lipid component of PN	
Subject analysis set title	All Patients Treated Set
Subject analysis set type	Intention-to-treat
Subject analysis set description:	
All randomized patients enrolled in the study (irrespective of the compliance with the planned treatment regimen) identical to all patients of the ITT set who received at least one dose of the trial medication. This was used as Safety Set.	

Primary: Change of liver function parameters defined as the sum of the N(0,1)-transformed differences in bilirubin (BILI), alanine transaminase (ALT) and aspartate transaminase (AST) from Baseline (BL) to V2

End point title	Change of liver function parameters defined as the sum of the N(0,1)-transformed differences in bilirubin (BILI), alanine transaminase (ALT) and aspartate transaminase (AST) from Baseline (BL) to V2
End point description:	
End point type	Primary
End point timeframe:	
8 weeks on average upt to 12 weeks (from BL to V2)	

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	30		
Units: unknown				
arithmetic mean (standard deviation)	0.0223 (± 3.0816)	-0.0260 (± 1.8287)		

Statistical analyses

Statistical analysis title	Non-inferiority test for the primary outcome
Statistical analysis description:	
Non-inferiority Test for the Primary Outcome - Sum of Changes of Three Liver Function Parameters in the VCAS	
Comparison groups	Test group v Control group

Number of subjects included in analysis	65
Analysis specification	Pre-specified
Analysis type	non-inferiority[1]
P-value	= 0.9404
Method	t-test, 1-sided
Parameter estimate	Mean difference (final values)
Confidence interval	
level	95 %
sides	2-sided
lower limit	-1.2353
upper limit	1.3318
Variability estimate	Standard deviation
Dispersion value	2.5815

Notes:

[1] - The test procedure to show non-inferiority was a one-sided two-sample t-test (α-level: 0.025) for mean differences assuming equal variances and normality. The non-inferiority margin was defined as 1.151.
The 2-sided confidence intervall was chosen to provide an upper and lower limit for the point estimate.

Secondary: Total BILI, change from BL to V2

End point title	Total BILI, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Change from Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	30		
Units: micromole(s)/litre				
arithmetic mean (standard deviation)	0.15 (± 3.14)	0.04 (± 3.32)		

Statistical analyses

No statistical analyses for this end point

Secondary: ALT, change from BL to V2

End point title	ALT, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Change form Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	30		
Units: micromole(s)/litre				
arithmetic mean (standard deviation)	0.01 (± 0.53)	-0.01 (± 0.23)		

Statistical analyses

No statistical analyses for this end point

Secondary: AST, change from BL to V2

End point title	AST, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Change from Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	30		
Units: micromole(s)/litre				
arithmetic mean (standard deviation)	-0.03 (± 0.38)	-0.02 (± 0.19)		

Statistical analyses

No statistical analyses for this end point

Secondary: Conjugated Bilirubin, change from BL to V2

End point title	Conjugated Bilirubin, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	31	29		
Units: micromole(s)/litre				
arithmetic mean (standard deviation)	0.72 (± 3.10)	-0.04 (± 1.57)		

Statistical analyses

No statistical analyses for this end point

Secondary: AST/ALT, change from BL to V2

End point title	AST/ALT, change from BL to V2
End point description: De Ritis quotient	
End point type	Secondary
End point timeframe: Baseline to Visit 2	

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	31		
Units: quotient				
arithmetic mean (standard deviation)	0.53 (± 1.00)	0.89 (± 2.52)		

Statistical analyses

No statistical analyses for this end point

Secondary: ALP, change from BL to V2

End point title	ALP, change from BL to V2
End point description:	
End point type	Secondary
End point timeframe: Baseline to Visit 2	

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	30		
Units: microkat/litre				
arithmetic mean (standard deviation)	0.13 (± 0.66)	-0.15 (± 1.46)		

Statistical analyses

No statistical analyses for this end point

Secondary: GGT, change from BL to V2

End point title	GGT, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	30		
Units: microkat/litre				
arithmetic mean (standard deviation)	0.02 (± 0.38)	-0.11 (± 1.64)		

Statistical analyses

No statistical analyses for this end point

Secondary: WBC, change from BL to V2

End point title	WBC, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	31		
Units: 10^9/litre				
arithmetic mean (standard deviation)	0.45 (± 1.42)	0.19 (± 1.39)		

Statistical analyses

No statistical analyses for this end point

Secondary: RBC, change from BL to V2

End point title	RBC, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	31		
Units: 10^12/litre				
arithmetic mean (standard deviation)	-0.02 (± 0.28)	-0.10 (± 0.28)		

Statistical analyses

No statistical analyses for this end point

Secondary: Haemoglobin, change from BL to V2

End point title	Haemoglobin, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	31		
Units: gram(s)/litre				
arithmetic mean (standard deviation)	0.52 (± 8.82)	-1.75 (± 8.22)		

Statistical analyses

No statistical analyses for this end point

Secondary: Haematocrit, change from BL to V2

End point title	Haematocrit, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	31		
Units: Litre/litre				
arithmetic mean (standard deviation)	-0.00 (± 0.03)	-0.01 (± 0.03)		

Statistical analyses

No statistical analyses for this end point

Secondary: Platelets, change from BL to V2

End point title	Platelets, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	31		
Units: 10^9/litre				
arithmetic mean (standard deviation)	3.06 (± 41.11)	6.9 (± 50.33)		

Statistical analyses

No statistical analyses for this end point

Secondary: INR, change from BL to V2

End point title	INR, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	27	25		
Units: ratio				
arithmetic mean (standard deviation)	-0.01 (± 0.25)	-0.16 (± 0.71)		

Statistical analyses

No statistical analyses for this end point

Secondary: Prothrombin Time, change from BL to V2

End point title	Prothrombin Time, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	6	3		
Units: second				
arithmetic mean (standard deviation)	-0.80 (± 1.15)	1.27 (± 5.16)		

Statistical analyses

No statistical analyses for this end point

Secondary: Activated partial thromboplastine time (ratio), change from BL to V2

End point title	Activated partial thromboplastine time (ratio), change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	9	9		
Units: Ratio				
arithmetic mean (standard deviation)	-0.02 (± 0.12)	-0.04 (± 0.16)		

Statistical analyses

No statistical analyses for this end point

Secondary: Activated partial thromboplastin time (s), change from BL to V2

End point title	Activated partial thromboplastin time (s), change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	25	19		
Units: second				
arithmetic mean (standard deviation)	0.02 (± 3.85)	0.97 (± 7.69)		

Statistical analyses

No statistical analyses for this end point

Secondary: Triene:tetraene ratio (plasma), change from BL to V2

End point title	Triene:tetraene ratio (plasma), change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	27		
Units: Ratio				
arithmetic mean (standard deviation)	-0.011 (± 0.024)	-0.008 (± 0.028)		

Statistical analyses

No statistical analyses for this end point

Secondary: Triene:tetraene ratio (RBC), change from BL to V2

End point title	Triene:tetraene ratio (RBC), change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	27		
Units: Ratio				
arithmetic mean (standard deviation)	0.000 (± 0.004)	-0.001 (± 0.004)		

Statistical analyses

No statistical analyses for this end point

Secondary: Eicosapentaenoic acid, change from BL to V2

End point title	Eicosapentaenoic acid, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	27		
Units: percent				
median (inter-quartile range (Q1-Q3))	1.60 (0.53 to 2.38)	0.02 (-0.12 to 0.12)		

Statistical analyses

No statistical analyses for this end point

Secondary: Docosahexaenoic acid, change from BL to V2

End point title	Docosahexaenoic acid, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	27		
Units: percent				
median (inter-quartile range (Q1-Q3))	1.47 (0.51 to 2.08)	-0.02 (-0.35 to 0.10)		

Statistical analyses

No statistical analyses for this end point

Secondary: BMI, change from BL to V2

End point title	BMI, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	36	31		
Units: kilogram(s)/square metre				
arithmetic mean (standard deviation)	0.4 (± 0.7)	0.2 (± 0.7)		

Statistical analyses

No statistical analyses for this end point

Secondary: EQ-5D-5L Health State Score, change from BL to V2

End point title	EQ-5D-5L Health State Score, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	36	34		
Units: points				
arithmetic mean (standard deviation)	-0.00 (± 0.14)	0.01 (± 0.11)		

Statistical analyses

No statistical analyses for this end point

Secondary: EQ-VAS, change from BL to V2

End point title	EQ-VAS, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	36	31		
Units: score				
arithmetic mean (standard deviation)	4.28 (± 14.21)	2.29 (± 13.19)		

Statistical analyses

No statistical analyses for this end point

Secondary: Blood glucose, change from BL to V2

End point title	Blood glucose, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	32	31		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	0.43 (± 0.94)	-0.14 (± 1.33)		

Statistical analyses

No statistical analyses for this end point

Secondary: Sodium, change from BL to V2

End point title	Sodium, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	31		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	0.18 (± 2.67)	-0.58 (± 2.74)		

Statistical analyses

No statistical analyses for this end point

Secondary: Chloride, change from BL to V2

End point title	Chloride, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	31		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	-0.19 (± 3.33)	-0.15 (± 4.08)		

Statistical analyses

No statistical analyses for this end point

Secondary: Potassium, change from BL to V2

End point title	Potassium, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	31		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	0.06 (± 0.37)	0.01 (± 0.46)		

Statistical analyses

No statistical analyses for this end point

Secondary: Calcium, change from BL to V2

End point title	Calcium, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	31		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	-0.01 (± 0.15)	-0.01 (± 0.10)		

Statistical analyses

No statistical analyses for this end point

Secondary: Magnesium, change from BL to V2

End point title	Magnesium, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	30		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	0.00 (± 0.09)	-0.00 (± 0.06)		

Statistical analyses

No statistical analyses for this end point

Secondary: Phosphate, change from BL to V2

End point title	Phosphate, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	30		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	-0.02 (± 0.18)	-0.00 (± 0.16)		

Statistical analyses

No statistical analyses for this end point

Secondary: Serum creatinine, change from BL to V2

End point title	Serum creatinine, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	31		
Units: micromole(s)/litre				
arithmetic mean (standard deviation)	3.87 (± 32.42)	0.43 (± 9.23)		

Statistical analyses

No statistical analyses for this end point

Secondary: Triglyceride, change from BL to V2

End point title	Triglyceride, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	36	30		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	0.10 (± 0.55)	0.19 (± 0.68)		

Statistical analyses

No statistical analyses for this end point

Secondary: Cholesterol, change from BL to V2

End point title	Cholesterol, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	36	30		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	0.01 (± 0.39)	0.02 (± 0.71)		

Statistical analyses

No statistical analyses for this end point

Secondary: High-density lipoprotein, change from BL to V2

End point title	High-density lipoprotein, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	36	30		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	-0.12 (± 0.19)	0.03 (± 0.23)		

Statistical analyses

No statistical analyses for this end point

Secondary: Low-density lipoprotein, change from BL to V2

End point title	Low-density lipoprotein, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	36	30		
Units: millimole(s)/litre				
arithmetic mean (standard deviation)	0.07 (± 0.33)	-0.08 (± 0.76)		

Statistical analyses

No statistical analyses for this end point

Secondary: C-reactive protein, change from BL to V2

End point title	C-reactive protein, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	35	30		
Units: nanomole(s)/litre				
arithmetic mean (standard deviation)	37.16 (± 160.03)	-24.65 (± 209.18)		

Statistical analyses

No statistical analyses for this end point

Secondary: alpha-Tocopherol, change from BL to V2

End point title	alpha-Tocopherol, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	4	5		
Units: micromole(s)/litre				
arithmetic mean (standard deviation)	-3.00 (± 6.60)	-1.94 (± 10.99)		

Statistical analyses

No statistical analyses for this end point

Secondary: Vitamin E, change from BL to V2

End point title	Vitamin E, change from BL to V2

End point description:

End point type	Secondary

End point timeframe:

Baseline to Visit 2

End point values	Test group	Control group		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	10	10		
Units: micromole(s)/litre				
arithmetic mean (standard deviation)	2.30 (± 4.97)	3.81 (± 7.18)		

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information	
Timeframe for reporting adverse events: 08-Jan-2018 - 19-Jul-2022	
Assessment type	Systematic
Dictionary used	
Dictionary name	MedDRA
Dictionary version	20.1
Reporting groups	
Reporting group title	Lipidem
Reporting group description: Test Group	
Reporting group title	Lipofundin MCT
Reporting group description: Control Group	

Serious adverse events	Lipidem	Lipofundin MCT	
Total subjects affected by serious adverse events			
subjects affected / exposed	5 / 38 (13.16%)	3 / 34 (8.82%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events	0	0	
Blood and lymphatic system disorders			
Anaemia			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Gastrointestinal disorders			
Abdominal pain			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Intestinal pseudo-obstruction			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Infections and infestations			
Device related infection			

subjects affected / exposed	1 / 38 (2.63%)	2 / 34 (5.88%)	
occurrences causally related to treatment / all	0 / 1	0 / 2	
deaths causally related to treatment / all	0 / 0	0 / 0	
Dermo-hypodermitis			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Stoma site infection			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Product issues			
Device breakage			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Device dislocation			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	

Frequency threshold for reporting non-serious adverse events: 0 %

Non-serious adverse events	Lipidem	Lipofundin MCT	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	15 / 38 (39.47%)	12 / 34 (35.29%)	
Vascular disorders			
Deep vein thrombosis			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Hypotension			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
General disorders and administration site conditions			

Fatigue			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Pyrexia			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Immune system disorders			
Drug hypersensitivity			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Respiratory, thoracic and mediastinal disorders			
Dyspnoea			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Dyspnoea exertional			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Epistaxis			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	2	0	
Product issues			
Device infusion issue			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Investigations			
Alanine aminotransferase increased			
subjects affected / exposed	3 / 38 (7.89%)	0 / 34 (0.00%)	
occurrences (all)	3	0	
Aspartate aminotransferase increased			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
White blood cell count increased			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Injury, poisoning and procedural complications			

Overdose			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Cardiac disorders			
Palpitations			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Nervous system disorders			
Headache			
subjects affected / exposed	1 / 38 (2.63%)	1 / 34 (2.94%)	
occurrences (all)	1	1	
Paraesthesia			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Blood and lymphatic system disorders			
Anaemia			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	2	0	
Gastrointestinal disorders			
Diarrhoea			
subjects affected / exposed	3 / 38 (7.89%)	0 / 34 (0.00%)	
occurrences (all)	3	0	
Abdominal pain			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Flatulence			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Intestinal pseudo-obstruction			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Nausea			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Vomiting			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	

Skin and subcutaneous tissue disorders			
Hyperhidrosis			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Musculoskeletal and connective tissue disorders			
Arthralgia			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Back pain			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Muscle spasms			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Infections and infestations			
Influenza			
subjects affected / exposed	0 / 38 (0.00%)	2 / 34 (5.88%)	
occurrences (all)	0	2	
Nasopharyngitis			
subjects affected / exposed	0 / 38 (0.00%)	2 / 34 (5.88%)	
occurrences (all)	0	2	
Breast abscess			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	
Bronchitis			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Laryngitis			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Lymphangitis			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Tracheitis			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	

Metabolism and nutrition disorders			
Hypokalaemia			
subjects affected / exposed	0 / 38 (0.00%)	1 / 34 (2.94%)	
occurrences (all)	0	1	
Hypophosphataemia			
subjects affected / exposed	1 / 38 (2.63%)	0 / 34 (0.00%)	
occurrences (all)	1	0	

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
20 July 2017	Substantial amendment 1.0: The exclusion criterion No. 4 was amended to harmonize the information about the contraindication between SmPC and Study Protocol, i.e., exclusion of patients with hypersensitivity for peanut. The exclusion criterion No. 16 was added to fulfil the requirements of the French Independent Ethics Committee concerning exclusion of persons of legal age who are the subject of a legal protection measure or who are unable to express their consent.
06 November 2019	Substantial amendment 4.0: Change of inclusion criterion "Patients with chronic intestinal failure receiving HPN including lipids in whom the parenteral macronutrients have not been changed by more than 10% for at least 3 months" in order to facilitate patient recruitment.

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

Limitations of the trial such as small numbers of subjects analysed or technical problems leading to unreliable data.

The study remains underpowered due to insufficient recruitment.

Notes: