Clinical trial results:
A trial to compare the pharmacokinetics and pharmacodynamics of insulin lispro administered s.c. into lipohypertrophic or normal abdominal adipose tissue in subjects with diabetes mellitus type 1

Summary

EudraCT number	2014-003144-12
Trial protocol	DE
Global end of trial date	25 November 2014

Results information

Result version number	v1 (current)
This version publication date	31 January 2020
First version publication date	31 January 2020

Trial information

Trial identification

Sponsor protocol code	DBC-14LIPOINJ01

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT02221323
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Profil Institut für Stoffwechselforschung GmbH
Sponsor organisation address	Hellersbergstr. 9, Neuss, Germany, 41460
Public contact	Regulatory Affairs Manager, Profil Institut für Stoffwechselforschung GmbH, +49 21314018145, regulatory@profil.com
Scientific contact	Regulatory Affairs Manager, Profil Institut für Stoffwechselforschung GmbH, +49 21314018145, regulatory@profil.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	18 November 2015
Is this the analysis of the primary completion data?	Yes
Primary completion date	25 November 2014
Global end of trial reached?	Yes
Global end of trial date	25 November 2014
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To compare the pharmacokinetic and pharmacodynamic effects of insulin lispro during the first 4 hours after s.c. administration into either lipohypertrophic or normal adipose tissue during a euglycaemic clamp examination.

Protection of trial subjects:

A common risk of all available insulin preparations will be that subjects participating in this study may experience hypoglycaemia. In order to minimize the risk of hypoglycaemia after insulin injection close monitoring of subjects' blood glucose level will occur in a medically supervised environment.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	29 September 2014
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	Germany: 13
Worldwide total number of subjects	13
EEA total number of subjects	13

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)	13
From 65 to 84 years	0
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

Screening occured in one trial site.

Pre-assignment

Screening details:

Eighteen (18) subjects were screened and 13 were considered eligible and randomised. All 13 randomised subjects completed the trial.

Period 1

Period 1 title	Overall trial (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Not blinded

Arms

Are arms mutually exclusive?	No
Arm title	1st arm - lipohypertrophic adipose tissue

Arm description: -

Arm type	Experimental
Investigational medicinal product name	Insulin lispro
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Six dose administrations within 16 days; 0.9 IU/kg international unit(s)/kilogram

Arm title	2nd arm - normal adipose tissue

Arm description: -

Arm type	Experimental
Investigational medicinal product name	Insulin lispro
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Subcutaneous use

Dosage and administration details:

Six dose administrations within 16 days; 0.9 IU/kg international unit(s)/kilogram

Number of subjects in period 1	1st arm - lipohypertrophic adipose tissue	2nd arm - normal adipose tissue
Started	13	13
Completed	13	13

Baseline characteristics

Reporting groups	
Reporting group title	Overall trial

Reporting group description: -

Reporting group values	Overall trial	Total	
Number of subjects	13	13	
Age categorical Units: Subjects			
In utero	0	0	
Preterm newborn infants (gestational age < 37 wks)	0	0	
Newborns (0-27 days)	0	0	
Infants and toddlers (28 days-23 months)	0	0	
Children (2-11 years)	0	0	
Adolescents (12-17 years)	0	0	
Adults (18-64 years)	13	13	
From 65-84 years	0	0	
85 years and over	0	0	
Age continuous Units: years			
arithmetic mean	50.1		
full range (min-max)	32 to 62	-	
Gender categorical Units: Subjects			
Female	1	1	
Male	12	12	

End points

End points reporting groups

Reporting group title	1st arm - lipohypertrophic adipose tissue
Reporting group description: -	
Reporting group title	2nd arm - normal adipose tissue
Reporting group description: -	

Primary: Summary statistics of pooled primary PK endpoint

End point title	Summary statistics of pooled primary PK endpoint
End point description:	
End point type	Primary
End point timeframe: 0-4h	

End point values	1st arm - lipohypertrophic adipose tissue	2nd arm - normal adipose tissue		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	13	13		
Units: h*mU/L				
arithmetic mean (full range (min-max))	131.10 (2.50 to 271.65)	164.90 (68.88 to 312.74)		

Statistical analyses

Statistical analysis title	PK analysis
Comparison groups	1st arm - lipohypertrophic adipose tissue v 2nd arm - normal adipose tissue
Number of subjects included in analysis	26
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.0021
Method	ANOVA

Primary: Summary statistics of pooled primary PD endpoint

End point title	Summary statistics of pooled primary PD endpoint
End point description:	
End point type	Primary

End point timeframe:
0-4h

End point values	1st arm - lipohypertrophic adipose tissue	2nd arm - normal adipose tissue		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	13	13		
Units: mg/kg				
arithmetic mean (full range (min-max))	625.13 (41.01 to 1727.8)	775.07 (356.26 to 1475.3)		

Statistical analyses

Statistical analysis title	PD analysis
Comparison groups	1st arm - lipohypertrophic adipose tissue v 2nd arm - normal adipose tissue
Number of subjects included in analysis	26
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0.039
Method	ANOVA

Adverse events

Adverse events information	
Timeframe for reporting adverse events:	
Overall trial	
Assessment type	Non-systematic

Dictionary used	
Dictionary name	MedDRA
Dictionary version	17.1

Reporting groups	
Reporting group title	Overall trial

Reporting group description: -

Serious adverse events	Overall trial		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 13 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		

Frequency threshold for reporting non-serious adverse events: 5 %

Non-serious adverse events	Overall trial		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	1 / 13 (7.69%)		
General disorders and administration site conditions			
Headache			
subjects affected / exposed	1 / 13 (7.69%)		
occurrences (all)	1		
Respiratory, thoracic and mediastinal disorders			
Chest pain			
subjects affected / exposed	1 / 13 (7.69%)		
occurrences (all)	1		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported