



## Clinical trial results:

### A Multi-Center, Open-Label, Single-Arm, Multiple Dose Study With HOE901-U300 to Assess the Ease of Use And Safety of a New U300 Pen Injector in Insulin-Naive Patients With T2DM

#### Summary

EudraCT number	2014-001253-16
Trial protocol	DE
Global end of trial date	20 November 2014

#### Results information

Result version number	v1 (current)
This version publication date	15 May 2016
First version publication date	15 May 2016

#### Trial information

##### Trial identification

Sponsor protocol code	PDY14065
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##### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT02227212
WHO universal trial number (UTN)	U1111-1155-7309

Notes:

##### Sponsors

Sponsor organisation name	Sanofi Aventis Recherche & Développement
Sponsor organisation address	1 avenue Pierre Brossolette, Chilly-Mazarin, France, 91380
Public contact	Trial Transparency Team, Sanofi Aventis Recherche & Développement, Contact-US@sanofi.com
Scientific contact	Trial Transparency Team, Sanofi Aventis Recherche & Développement, Contact-US@sanofi.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	05 December 2014
Is this the analysis of the primary completion data?	No
Global end of trial reached?	Yes
Global end of trial date	20 November 2014
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

To demonstrate the ease of use of the U300 pen injector in pen-naïve and insulin-naïve type 2 diabetes mellitus (T2DM) subjects in a 4-week once-daily dosing regimen with HOE901-U300.

Protection of trial subjects:

Subjects were fully informed of all pertinent aspects of the clinical trial as well as the possibility to discontinue at any time in language and terms appropriate for the subject and considering the local culture. During the course of the trial, subjects were provided with individual subject cards indicating the nature of the trial the subject is participating, contact details and any information needed in the event of a medical emergency.

Collected personal data and human biological samples were processed in compliance with the Sanofi-Aventis Group Personal Data Protection Charter ensuring that the Group abides by the laws governing personal data protection in force in all countries in which it operates.

Background therapy:

Subjects continued their background anti-hyperglycemic treatment during the study except sulfonylureas, glinides and other anti-hyperglycemic agents not approved in combination with Insulin.

Evidence for comparator: -

Actual start date of recruitment	22 August 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: 40
Worldwide total number of subjects	40
EEA total number of subjects	40

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)	17
From 65 to 84 years	23
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

The study was conducted at 7 centres in Germany. A total of 51 subjects were screened between 22 August 2014 and 30 September 2014.

### Pre-assignment

Screening details:

Of 51 screened subjects, 43 subjects were enrolled and 40 were treated.

### Period 1

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

### Arms

<b>Arm title</b>	HOE901-U300
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Arm description:

HOE901-U300 for 4 weeks using U300 pen injector.

Arm type	Experimental
Investigational medicinal product name	Insulin Glargine U300
Investigational medicinal product code	HOE901-U300
Other name	
Pharmaceutical forms	Solution for injection in pre-filled pen
Routes of administration	Subcutaneous use

Dosage and administration details:

HOE901-U300 (Insulin Glargine 300 U/ml) was self-administered once daily in evening. Subjects were individually up-titrated weekly from dose 0.2 U/kg seeking a fasting self-monitored plasma glucose (SMPG) in the range of 80 to 100 mg/dL/day (4.4 to 5.6 mmol/L). The injection time was fixed at the baseline visit and was maintained for the duration of the study with +/-1 hour window.

<b>Number of subjects in period 1</b>	HOE901-U300
Started	40
Completed	40

## Baseline characteristics

### Reporting groups

Reporting group title	HOE901-U300
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Reporting group description:

HOE901-U300 for 4 weeks using U300 pen injector.

Reporting group values	HOE901-U300	Total	
Number of subjects	40	40	
Age categorical			
Units: Subjects			
Age continuous			
Units: years			
arithmetic mean	66.2		
standard deviation	± 9.8	-	
Gender categorical			
Units: Subjects			
Female	21	21	
Male	19	19	

## End points

### End points reporting groups

Reporting group title	HOE901-U300
Reporting group description: HOE901-U300 for 4 weeks using U300 pen injector.	

### Primary: Percentage of Subjects with an Excellent/Good Responses on Ease of Use/Ease of Learning Questionnaires

End point title	Percentage of Subjects with an Excellent/Good Responses on Ease of Use/Ease of Learning Questionnaires <sup>[1]</sup>
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End point description:

The questionnaire consists of 8 questions to assess ease of use and 4 questions to assess ease of learning, ease of use in general, overall assessment of the pen, and does the subject recommend the pen. The responses for the first 11 questions were assessed on a 5-point Likert scale ranging from 1 (excellent) to 5 (very poor) about how easy it was to learn and use the pen device. The response of last question (Subject's recommendation of U300 pen injector) was evaluated in the form of 'Yes' or 'No' and % of subjects answering "yes" were reported. Analysis was performed on safety population, which included all enrolled subjects exposed to at least one dose of investigational medicinal product (IMP).

End point type	Primary
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End point timeframe:

Baseline, Week 4

Notes:

[1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: Data were descriptive in nature, hence statistical analysis could not be provided.

End point values	HOE901-U300			
Subject group type	Reporting group			
Number of subjects analysed	40			
Units: Percentage of subjects				
number (not applicable)				
Ease of selecting the dose (Baseline)	92.3			
Ease of selecting the dose (Week 4)	95			
Ease of correcting a misdialled dose (Baseline)	97.4			
Ease of correcting a misdialled dose (Week 4)	97.5			
Ease of reading the insulin dose (Baseline)	84.6			
Ease of reading the insulin dose (Week 4)	92.5			
Ease of feeling/hearing dialing clicks (Baseline)	76.9			
Ease of feeling/hearing dialing clicks (Week 4)	85			
Force/effort needed to inject insulin (Baseline)	89.7			
Force/effort needed to inject insulin (Week 4)	95			
Smoothness/gentleness of injection (Baseline)	89.7			
Smoothness/gentleness of injection (Week 4)	92.5			

Ease of knowing injection if complete (Baseline)	74.4			
Ease of knowing injection if complete (Week 4)	85			
Ease of reading remaining insulin (Baseline)	59			
Ease of reading remaining insulin (Week 4)	90			
Ease of learning (Baseline)	89.7			
Ease of learning (Week 4)	95			
General ease of use (Baseline)	92.3			
General ease of use (Week 4)	97.5			
Overall assessment (Baseline)	89.7			
Overall assessment (Week 4)	95			
Would you recommend U300 pen injector (Baseline)	100			
Would you recommend U300 pen injector (Week 4)	97.5			

## Statistical analyses

No statistical analyses for this end point

## Secondary: Change from Baseline in Total Treatment Satisfaction Score using Diabetes Treatment Satisfaction Questionnaire status (DTSQs)

End point title	Change from Baseline in Total Treatment Satisfaction Score using Diabetes Treatment Satisfaction Questionnaire status (DTSQs)
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End point description:

DTSQs is a validated questionnaire designed to measure total diabetes treatment satisfaction and perceived frequency of hyper and hypoglycemia. It consists of 8 questions which are answered on a 7-point Likert scale with responses ranging from 0 (very dissatisfied) to 6 (very satisfied). A total treatment satisfaction score range between 0 and 36 was calculated as the sum of the following single items: Item 1 (current treatment), Item 4 (convenience), Item 5 (flexibility), Item 6 (understanding), Item 7 (recommend), and Item 8 (continue). Analysis was performed on safety population. Number of subjects analysed = subjects with DTSQs assessment at specified time-points.

End point type	Secondary
End point timeframe:	
Baseline, Week 4	

<b>End point values</b>	HOE901-U300			
Subject group type	Reporting group			
Number of subjects analysed	39			
Units: score on a scale				
arithmetic mean (standard deviation)	1.13 (± 6.79)			

## Statistical analyses

No statistical analyses for this end point

### Secondary: Change in Fasting Plasma Glucose (FPG) from Baseline to Week 4

End point title	Change in Fasting Plasma Glucose (FPG) from Baseline to Week 4
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End point description:

Subjects were self-monitored their FPG as usually done in the standard care after initiating an insulin treatment in insulin-naïve subjects. Analysis was performed on safety population. Number of subjects analysed = subjects with FPG assessment at specified time-points.

End point type	Secondary
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End point timeframe:

Baseline, Week 4

<b>End point values</b>	HOE901-U300			
Subject group type	Reporting group			
Number of subjects analysed	38			
Units: mmol/L				
arithmetic mean (standard deviation)	-2.34 (± 2.54)			

### Statistical analyses

No statistical analyses for this end point

### Secondary: Number of subjects with Product Technical Complaints (PTC)

End point title	Number of subjects with Product Technical Complaints (PTC)
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End point description:

The incidences PTC with the new U300 pen injector were assessed using PTC forms. Any malfunction of the U300 pen injector whether or not associated with an AE, must have been reported to the monitoring team on a PTC form. Analysis was performed on safety population.

End point type	Secondary
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End point timeframe:

From Baseline to Week 4

<b>End point values</b>	HOE901-U300			
Subject group type	Reporting group			
Number of subjects analysed	40			
Units: Subjects				
number (not applicable)	0			



## Statistical analyses

No statistical analyses for this end point

### Secondary: Change from Baseline in Daily Insulin Dose to Week 4

End point title	Change from Baseline in Daily Insulin Dose to Week 4
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End point description:

Analysis was performed on safety population.

End point type	Secondary
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End point timeframe:

Baseline, Week 4

<b>End point values</b>	HOE901-U300			
Subject group type	Reporting group			
Number of subjects analysed	39			
Units: U/kg				
arithmetic mean (standard deviation)	0.15 (± 0.1)			

## Statistical analyses

No statistical analyses for this end point

### Secondary: Percentage of Subjects with Hypoglycemia Events

End point title	Percentage of Subjects with Hypoglycemia Events
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End point description:

Hypoglycemia events included: Severe (required assistance of another person to actively administer carbohydrate, glucagon, or other resuscitative actions) ; Documented symptomatic (typical symptoms of hypoglycemia were accompanied by plasma glucose = <3.9 mmol/L) ; Asymptomatic (not accompanied by typical symptoms of hypoglycemia but with plasma glucose = <3.9 mmol/L) ; Probable symptomatic (symptoms of hypoglycemia were not accompanied by a plasma glucose determination, but was presumably caused by plasma glucose = <3.9 mmol/L) ; And Relative (subjects reported any of the typical symptoms of hypoglycemia, and interpreted the symptoms as indicative of hypoglycemia, but with plasma glucose >3.9 mmol/L). Analysis was performed on safety population.

End point type	Secondary
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End point timeframe:

From Baseline to Week 4

<b>End point values</b>	HOE901-U300			
Subject group type	Reporting group			
Number of subjects analysed	40			
Units: Percentage of subjects				
number (not applicable)				
Any hypoglycemia event	17.5			
Asymptomatic hypoglycemia	7.5			
Documented hypoglycemia	10			

Probable hypoglycemia	0			
Relative hypoglycemia	2.5			
Severe Hypoglycemia	0			

## Statistical analyses

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No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

All Adverse Events (AE) were collected from signature of the informed consent form up to the final visit (Week 6) regardless of seriousness or relationship to investigational product.

Adverse event reporting additional description:

Reported adverse events are treatment emergent adverse events that is AEs that developed/worsened during the 'on treatment period' (the time from the first IMP administration until 2 days after the last dose of IMP).

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	17.1
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### Reporting groups

Reporting group title	HOE901-U300
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Reporting group description:

HOE901-U300 for 4 weeks using U300 pen injector.

Serious adverse events	HOE901-U300		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 40 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events			

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

Non-serious adverse events	HOE901-U300		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	11 / 40 (27.50%)		
Neoplasms benign, malignant and unspecified (incl cysts and polyps) Haemangioma Of Liver			
subjects affected / exposed	1 / 40 (2.50%)		
occurrences (all)	1		
Injury, poisoning and procedural complications Contusion			
subjects affected / exposed	1 / 40 (2.50%)		
occurrences (all)	1		
Cardiac disorders			

Mitral Valve Incompetence subjects affected / exposed occurrences (all)	1 / 40 (2.50%) 1		
Nervous system disorders Headache subjects affected / exposed occurrences (all)	1 / 40 (2.50%) 1		
General disorders and administration site conditions Injection Site Haematoma subjects affected / exposed occurrences (all)  Injection Site Pain subjects affected / exposed occurrences (all)  Peripheral Swelling subjects affected / exposed occurrences (all)	1 / 40 (2.50%) 1  1 / 40 (2.50%) 1  1 / 40 (2.50%) 1		
Ear and labyrinth disorders Vertigo subjects affected / exposed occurrences (all)	1 / 40 (2.50%) 1		
Immune system disorders Allergy To Arthropod Sting subjects affected / exposed occurrences (all)	1 / 40 (2.50%) 1		
Gastrointestinal disorders Diarrhoea subjects affected / exposed occurrences (all)	1 / 40 (2.50%) 1		
Infections and infestations Gastroenteritis subjects affected / exposed occurrences (all)  Nasopharyngitis subjects affected / exposed occurrences (all)  Urinary Tract Infection	1 / 40 (2.50%) 1  4 / 40 (10.00%) 4		

subjects affected / exposed	1 / 40 (2.50%)		
occurrences (all)	1		

## **More information**

### **Substantial protocol amendments (globally)**

Were there any global substantial amendments to the protocol? No

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### **Interruptions (globally)**

Were there any global interruptions to the trial? No

### **Limitations and caveats**

None reported