



## Clinical trial results:

### An Open-label, Multi-centre, Un-controlled Trial to Assess Efficacy and Safety of NNC-0156-0000-0009 during Surgical Procedures in Patients with Haemophilia B.

#### Summary

EudraCT number	2010-023070-40
Trial protocol	FR GB NL DE IT ES GR AT
Global end of trial date	02 December 2013

#### Results information

Result version number	v1 (current)
This version publication date	15 March 2016
First version publication date	28 July 2015

#### Trial information

##### Trial identification

Sponsor protocol code	NN7999-3773
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##### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT01386528
WHO universal trial number (UTN)	U1111-1121-4554

Notes:

#### Sponsors

Sponsor organisation name	Novo Nordisk A/S
Sponsor organisation address	Novo Allé, Bagsvaerd, Denmark, 2860
Public contact	Global Clinical Registry (GCR,1452), Novo Nordisk A/S, clinicaltrials@novonordisk.com
Scientific contact	Global Clinical Registry (GCR,1452), Novo Nordisk A/S, clinicaltrials@novonordisk.com

Notes:

#### Paediatric regulatory details

Is trial part of an agreed paediatric investigation plan (PIP)	Yes
EMA paediatric investigation plan number(s)	EMA-000731-PIP01-09
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	27 May 2014
Is this the analysis of the primary completion data?	Yes
Primary completion date	02 December 2013
Global end of trial reached?	Yes
Global end of trial date	02 December 2013
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

To evaluate the haemostatic effect of nonacog beta pegol (N9-GP) during surgical procedures in patients with haemophilia B.

Protection of trial subjects:

The trial was conducted in accordance with the Declaration of Helsinki (Seoul, October 2008), the ICH Good Clinical Practice (Geneva, May 1996) and FDA 21 CFR 312.120.

Background therapy:

Not applicable.

Evidence for comparator:

Not applicable.

Actual start date of recruitment	08 June 2012
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	United Kingdom: 2
Country: Number of subjects enrolled	Italy: 1
Country: Number of subjects enrolled	Romania: 1
Country: Number of subjects enrolled	Malaysia: 2
Country: Number of subjects enrolled	South Africa: 2
Country: Number of subjects enrolled	Taiwan: 1
Country: Number of subjects enrolled	Turkey: 1
Country: Number of subjects enrolled	United States: 3
Worldwide total number of subjects	13
EEA total number of subjects	4

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

## Subject disposition

### Recruitment

Recruitment details:

The 10 sites in 8 countries enrolled patients: Italy (1 site), Malaysia (1 site), Romania (1 site), South Africa (1 site), Taiwan (1 site), Turkey (1 site), UK (2 sites), US (2 sites).

### Pre-assignment

Screening details:

Patients enrolled in the present trial could be recruited from the pivotal trial (NN7999-3747) or the extension trial (NN7999-3775). In addition, new patients could also be recruited into the present trial.

### Period 1

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

Blinding implementation details:

Not applicable.

### Arms

Arm title	nonacog beta pegol
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Arm description:

New patients as well as transferred patients from the pivotal trial (NN7999-3747) or the extension trial (NN7999-3775) received nonacog beta pegol at screening and followed a preventive treatment regimen with nonacog beta pegol until one week before the day of surgery. No more than 4 hours prior to the planned surgical procedure, all patients received a single bolus injection of 80 U/kg of nonacog beta pegol. Postoperatively, the patients received fixed doses of 40 U/kg repeated at the investigator's discretion aiming for no less than the FIX levels recommended by the World Federation of Hemophilia. Nonacog beta pegol was administered intravenously (into the vein).

Arm type	Experimental
Investigational medicinal product name	nonacog beta pegol (N9-GP)
Investigational medicinal product code	NNC 0156-0000-009
Other name	
Pharmaceutical forms	Powder for solution for injection, Solvent for solution for infusion
Routes of administration	Intravenous use

Dosage and administration details:

The new patients were dosed once with 40 U/kg nonacog beta pegol at screening. The FIX (coagulation factor 9) activity after 30 minutes at this visit, was used to determine if dose adjustments were necessary during the peri-operative period. For patients who had been on prophylaxis with 40 U/kg in the preceding trial, the most recent FIX activity level 30 minutes post-dose was used instead. All patients received a pre-operative dose of nonacog beta pegol 15 minutes to 4 hours prior to the surgery and before any procedures were undertaken including anaesthesia. The pre-operative dose was a single bolus injection of 80 U/kg. It was recommended to give a dose of 40 U/kg 24-48 hours after the pre-operative dose depending on the desired FIX activity level. From the day after surgery (Day 1) and through Day 6, nonacog beta pegol dosing was adjusted to aim for a FIX activity level of approximately 0.50 U/mL.

<b>Number of subjects in period 1</b>	nonacog beta pegol
Started	13
Completed	13

## Baseline characteristics

### Reporting groups

Reporting group title	Overall Study
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Reporting group description:

The demographics and baseline characteristics are presented for the full analysis set (FAS) which included all patients exposed to nonacog beta pegol.

Reporting group values	Overall Study	Total	
Number of subjects	13	13	
Age categorical Units: Subjects			
Age continuous Units: years median full range (min-max)	39 15 to 56	-	
Gender categorical Units: Subjects			
Female	0	0	
Male	13	13	

## End points

### End points reporting groups

Reporting group title	nonacog beta pegol
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Reporting group description:

New patients as well as transferred patients from the pivotal trial (NN7999-3747) or the extension trial (NN7999-3775) received nonacog beta pegol at screening and followed a preventive treatment regimen with nonacog beta pegol until one week before the day of surgery. No more than 4 hours prior to the planned surgical procedure, all patients received a single bolus injection of 80 U/kg of nonacog beta pegol. Postoperatively, the patients received fixed doses of 40 U/kg repeated at the investigator's discretion aiming for no less than the FIX levels recommended by the World Federation of Hemophilia. Nonacog beta pegol was administered intravenously (into the vein).

### Primary: Haemostatic effect during surgery evaluated by the four-point response scale, assessed by the investigator/surgeon at the day of surgery – Four-point response scale: Excellent, good, moderate, poor.

End point title	Haemostatic effect during surgery evaluated by the four-point response scale, assessed by the investigator/surgeon at the day of surgery – Four-point response scale: Excellent, good, moderate, poor. <sup>[1]</sup>
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End point description:

Haemostatic effect during surgery was evaluated immediately after surgery (last stitch) using a four-point response scale:

– Four-point response scale: Excellent, good, moderate, poor.

The evaluation was done by the surgeon, anaesthesiologist and/or investigator based on experience as follows:

1. Excellent: Better than expected/predicted in this type of procedure.
2. Good: As expected in this type of procedure.
3. Moderate: Less than optimal for the type of procedure but haemostatic response maintained without change of treatment regimen.
4. Poor: Bleeding due to inadequate therapeutic response with adequate dosing, change of regimen required.

End point type	Primary
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End point timeframe:

During surgery (assessed immediately after surgery (last stitch)).

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: Endpoint is summarised as well as listed. No statistical analyses were planned for this endpoint.

End point values	nonacog beta pegol			
Subject group type	Reporting group			
Number of subjects analysed	13			
Units: Frequency				
number (not applicable)				
Excellent	10			
Good	3			
Moderate	0			
Poor	0			

## Statistical analyses

No statistical analyses for this end point

### Secondary: Consumption of N9-GP (U/kg BW) during surgery and post-operative period

End point title	Consumption of N9-GP (U/kg BW) during surgery and post-operative period
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End point description:

Mean consumption of nonacog beta pegol (U/kg) used for treatment per patient before surgery, during surgery (the time from knife to skin until last stitch) and post-operative period.

End point type	Secondary
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End point timeframe:

Before surgery is defined as the time from the patient entered the trial until the surgery. During surgery is defined as the time from knife to skin until last stitch. The post-operative period is defined as the time from Day 1 to Day 13

<b>End point values</b>	nonacog beta pegol			
Subject group type	Reporting group			
Number of subjects analysed	13			
Units: U/Kg				
arithmetic mean (standard deviation)				
Consumption used for treatment per patient	328.2 (± 113.1)			

## Statistical analyses

No statistical analyses for this end point

### Secondary: Transfusion requirements (fulfilling transfusion criteria) during surgery and the post-operative

End point title	Transfusion requirements (fulfilling transfusion criteria) during surgery and the post-operative
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End point description:

Mean quantity of transfusion during surgery (the time from knife to skin until last stitch) and the post-operative period (Day 1-13).

End point type	Secondary
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End point timeframe:

During surgery is defined as the time from knife to skin until last stitch. The post-operative period is defined as the time from Day 1 to Day 13.



End point values	nonacog beta pegol			
Subject group type	Reporting group			
Number of subjects analysed	13 <sup>[2]</sup>			
Units: mL				
arithmetic mean (standard deviation)				
During surgery	275 (± 35.4)			
Post operative period (Days 1-6)	266.7 (± 28.9)			

Notes:

[2] - Only 2 patients received transfusions.

## Statistical analyses

No statistical analyses for this end point

### Secondary: Haemoglobin pre and post surgery start (0, 1h, 24 h)

End point title	Haemoglobin pre and post surgery start (0, 1h, 24 h)
End point description:	The mean pre-surgery and post surgery haemoglobin level.
End point type	Secondary
End point timeframe:	Prior to surgery and post surgery start (0, 1h, 24 h)

End point values	nonacog beta pegol			
Subject group type	Reporting group			
Number of subjects analysed	13 <sup>[3]</sup>			
Units: mmol/L				
arithmetic mean (standard deviation)				
Prior to surgery	8.98 (± 0.67)			
1 hour post-surgery	8.37 (± 0.78)			
24 hours post-surgery	7.99 (± 1.13)			

Notes:

[3] - 10 and 12 subjects contributed to the analysis during 1 hour and 24 hour post-surgery respectively.

## Statistical analyses

No statistical analyses for this end point

### Secondary: Haemoglobin post surgery start - every 24 hours in the post-operative period.

End point title	Haemoglobin post surgery start - every 24 hours in the post-operative period.
End point description:	Mean haemoglobin level, every 24 hours in the post-operative period.

End point type	Secondary
End point timeframe:	
Every 24 hours in the post-operative period.	

<b>End point values</b>	nonacog beta pegol			
Subject group type	Reporting group			
Number of subjects analysed	0 <sup>[4]</sup>			
Units: mmol/L				
arithmetic mean (standard deviation)	( )			

Notes:

[4] - Patients could be discharged on Day 3 and so Hb could not be measured every 24 hrs post surgery.

### Statistical analyses

No statistical analyses for this end point

### Secondary: AE and SAEs reported during the trial period until the last visit.

End point title	AE and SAEs reported during the trial period until the last visit.
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End point description:

The number of adverse events and serious adverse events per patient years of exposure, reported during the trial period.

End point type	Secondary
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End point timeframe:

Adverse events from the first trial related activity after the patient had signed the informed consent and until post treatment follow-up period.

<b>End point values</b>	nonacog beta pegol			
Subject group type	Reporting group			
Number of subjects analysed	13			
Units: Events per patient year of exposure				
number (not applicable)				
Adverse events	12.12			
Serious adverse events	0			

### Statistical analyses

No statistical analyses for this end point

### Secondary: Incidence of inhibitors against FIX (≥0.6 BU) until the last visit

End point title	Incidence of inhibitors against FIX (≥0.6 BU) until the last visit
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End point description:

Number of patients with inhibitory antibodies.

End point type	Secondary
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End point timeframe:

During the trial from screening until last visit. The last visit is defined as the end of trial visit if the patient continues in the extension trial and as the follow-up visit if the patient does not continue in the extension trial.

<b>End point values</b>	nonacog beta pegol			
Subject group type	Reporting group			
Number of subjects analysed	13			
Units: Number of patients	0			

### Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

AEs from screening visit (day 0) and until post treatment follow-up period. Patients not continuing in the extension trial attended a follow-up visit 4 weeks  $\pm$  2 weeks after the last dose of nonacog beta pegol.

Adverse event reporting additional description:

The safety analysis set consists of all patients exposed to nonacog beta pegol.

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	unknown
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### Reporting groups

Reporting group title	Nonacog beta pegol
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Reporting group description:

New patients as well as transferred patients from Paradigm™ 2 (NN7999-3747) or Paradigm™ 4 (NN7999-3775) trials received nonacog beta pegol at screening, just prior to and during surgical intervention, administered intravenously (into the vein).

Serious adverse events	Nonacog beta pegol		
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	Nonacog beta pegol		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	9 / 13 (69.23%)		
Investigations			
Serum ferritin increased			
subjects affected / exposed	1 / 13 (7.69%)		
occurrences (all)	1		
Injury, poisoning and procedural complications			
Excoriation			
subjects affected / exposed	1 / 13 (7.69%)		
occurrences (all)	1		
Fall			

subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Vascular disorders Haemorrhage subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Hypertension subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
General disorders and administration site conditions Face oedema subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Pyrexia subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Blood and lymphatic system disorders Anaemia subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Eye disorders Conjunctival haemorrhage subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Gastrointestinal disorders Epigastric discomfort subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Nausea subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Oral mucosal erythema subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Vomiting			

subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Skin and subcutaneous tissue disorders Pruritus subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1		
Musculoskeletal and connective tissue disorders Musculoskeletal discomfort subjects affected / exposed occurrences (all)  Pain in extremity subjects affected / exposed occurrences (all)	1 / 13 (7.69%) 1  1 / 13 (7.69%) 1		

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
10 January 2012	Linguistic revision to one of the stopping rules. In addition, the protocol was amended on some operational issues and inconsistencies.
11 May 2012	Changes in the visual appearance of the trial product. Information on stop time of bleeding episode. Information on number of months on on-demand treatment. Information on screening of antibodies.
02 January 2013	The following countries were added to the list of participating countries: Austria, Greece, Latvia, Lithuania and Romania.

Notes:

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported