Clinical trial results:
Postoperative analgesia after elective hip surgery - effect of obturator nerve blockade

Summary

EudraCT number	2017-000068-14
Trial protocol	DK
Global end of trial date	08 June 2018

Results information

Result version number	v1 (current)
This version publication date	27 November 2019
First version publication date	27 November 2019

Trial information

Trial identification

Sponsor protocol code	HIP/FUSION#2

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT03064165
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Thomas Fichtner Bendtsen
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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	14 June 2018
Is this the analysis of the primary completion data?	Yes
Primary completion date	08 June 2018
Global end of trial reached?	Yes
Global end of trial date	08 June 2018
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To estimate the effect of obturator nerve blockade on postoperative opioid consumption 0-12 hours after total hip replacement.

Protection of trial subjects:

No specific measures was observed.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	01 May 2017
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	Denmark: 62
Worldwide total number of subjects	62
EEA total number of subjects	62

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	41
85 years and over	4

Subject disposition

Recruitment

Recruitment details:

We included patients aged ≥18 years with ASA I–III status who were scheduled for primary THA in spinal anesthesia at the Elective Surgery Center, Silkeborg Regional Hospital, Silkeborg, Denmark.

Pre-assignment

Screening details:

Assessed for eligibility, n=284; Excluded, n=222, cause of exclusion: Meeting exclusion criteria, n=154, Declined to participate, n=33, Other reasons, n=35; Randomized, n=62, thereof: Completing trial, n=60, Excluded after inclusion, n=2.

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, Monitor, Data analyst, Carer, Assessor

Arms

Are arms mutually exclusive?	Yes
Arm title	Active nerve block

Arm description:

Subjects received an active obturator nerve block within 1 hour after total hip arthroplasty.

Arm type	Experimental
Investigational medicinal product name	Bupivacaine 5 mg/mL with epinephrine 5 µg/mL
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Perineural use

Dosage and administration details:

Single injection of 15 mL bupivacaine 5 mg/mL with epinephrine 5 µg/mL in the interfacial plane between the pectineus and external obturator muscles.

Arm title	Sham nerve block

Arm description:

Subjects received a sham obturator nerve block (placebo) within 1 hour after total hip arthroplasty.

Arm type	Placebo
Investigational medicinal product name	Normal saline
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Perineural use

Dosage and administration details:

Single injection of 15 mL bupivacaine 5 mg/mL with epinephrine 5 µg/mL in the interfacial plane between the pectineus and external obturator muscles.

Number of subjects in period 1	Active nerve block	Sham nerve block
Started	31	31
Completed	30	30
Not completed	1	1
Protocol deviation	1	1

Baseline characteristics

End points

End points reporting groups	
Reporting group title	Active nerve block
Reporting group description:	
Subjects received an active obturator nerve block within 1 hour after total hip arthroplasty.	
Reporting group title	Sham nerve block
Reporting group description:	
Subjects received a sham obturator nerve block (placebo) within 1 hour after total hip arthroplasty.	

Primary: Cumulated opioid dose (0-12 h)	
End point title	Cumulated opioid dose (0-12 h)
End point description:	
Opioid consumption was converted to Oram morphine equivalents	
End point type	Primary
End point timeframe:	
0-12 hours after surgery	

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: milligram(s)				
arithmetic mean (standard deviation)	39.9 (± 22.3)	40.5 (± 30.5)		

Statistical analyses

Statistical analysis title	Student t-test
Comparison groups	Sham nerve block v Active nerve block
Number of subjects included in analysis	60
Analysis specification	Pre-specified
Analysis type	equivalence
P-value	= 0.93
Method	t-test, 2-sided
Parameter estimate	Mean difference (final values)
Point estimate	0.6
Confidence interval	
level	95 %
sides	2-sided
lower limit	-14
upper limit	13
Variability estimate	Standard error of the mean
Dispersion value	6.9

Secondary: Cumulated opioid dose (12-18 h)

End point title	Cumulated opioid dose (12-18 h)

End point description:

End point type	Secondary

End point timeframe:

12–18 hours after surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: milligram(s)				
median (inter-quartile range (Q1-Q3))	12.5 (0 to 17.0)	10.1 (0 to 17.3)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score at rest (1 h)

End point title	Pain score at rest (1 h)

End point description:

Pain evaluated by subject on numeric rating score from 0 (no pain) to 10 (worst pain imaginable)

End point type	Secondary

End point timeframe:

1 hour after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score at rest (2 h)

End point title	Pain score at rest (2 h)

End point description:

Pain evaluated by subject on numeric rating score from 0 (no pain) to 10 (worst pain imaginable)

End point type	Secondary

End point timeframe:

2 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Scale				
median (inter-quartile range (Q1-Q3))	0 (0 to 2)	0 (0 to 2)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score at rest (5 h)

End point title	Pain score at rest (5 h)

End point description:

Pain evaluated by subject on numeric rating score from 0 (no pain) to 10 (worst pain imaginable)

End point type	Secondary

End point timeframe:

5 hours after end-of-surgery.

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	2 (1 to 3)	2.5 (2 to 3.25)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score at rest (7 h)

End point title	Pain score at rest (7 h)

End point description:

Pain evaluated by subject on numeric rating score from 0 (no pain) to 10 (worst pain imaginable)

End point type	Secondary

End point timeframe:

7 hours after end-of-surgery.

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	2 (1 to 3)	2 (1 to 3)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score at rest (24 h)

End point title	Pain score at rest (24 h)

End point description:

End point type	Secondary

End point timeframe:

24 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	1 (0 to 2)	1 (0 to 2)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score during passive 90° flexion of the hip (1 h)

End point title	Pain score during passive 90° flexion of the hip (1 h)

End point description:

Pain evaluated by subject on numeric rating score from 0 (no pain) to 10 (worst pain imaginable)

End point type	Secondary

End point timeframe:

1 hour after end-of-surgery.

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score during passive 90° flexion of the hip (2 h)

End point title	Pain score during passive 90° flexion of the hip (2 h)

End point description:

Pain evaluated by subject on numeric rating score from 0 (no pain) to 10 (worst pain imaginable)

End point type	Secondary

End point timeframe:

2 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	0 (0 to 2)	0.5 (0 to 3)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score during passive 90° flexion of the hip (5 h)

End point title	Pain score during passive 90° flexion of the hip (5 h)

End point description:

Pain evaluated by subject on numeric rating score from 0 (no pain) to 10 (worst pain imaginable)

End point type	Secondary

End point timeframe:

5 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	3.5 (1 to 5)	3 (2 to 5)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score during passive 90° flexion of the hip (7 h)

End point title	Pain score during passive 90° flexion of the hip (7 h)
End point description:	
Pain evaluated by subject on numeric rating score from 0 (no pain) to 10 (worst pain imaginable)	
End point type	Secondary
End point timeframe:	
5 hours after end-of-surgery	

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	4 (2.5 to 5)	3 (2 to 6)		

Statistical analyses

No statistical analyses for this end point

Secondary: Pain score during passive 90° flexion of the hip (24 h)

End point title	Pain score during passive 90° flexion of the hip (24 h)
End point description:	
Pain evaluated by subject on numeric rating score from 0 (no pain) to 10 (worst pain imaginable)	
End point type	Secondary
End point timeframe:	
24 hours after end-of-surgery	

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	3 (2 to 4)	3 (1 to 5.25)		

Statistical analyses

No statistical analyses for this end point

Secondary: Intensity of nausea (1 h)

End point title	Intensity of nausea (1 h)

End point description:

Nausea evaluated by subject on numeric rating score from 0 (no nausea) to 10 (worst nausea imaginable)

End point type	Secondary

End point timeframe:

1 hour after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Intensity of nausea (2 h)

End point title	Intensity of nausea (2 h)

End point description:

Nausea evaluated by subject on numeric rating score from 0 (no nausea) to 10 (worst nausea imaginable)

End point type	Secondary

End point timeframe:

2 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Intensity of nausea (5 h)

End point title	Intensity of nausea (5 h)

End point description:

Nausea evaluated by subject on numeric rating score from 0 (no nausea) to 10 (worst nausea imaginable)

End point type	Secondary

End point timeframe:

5 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Intensity of nausea (7 h)

End point title	Intensity of nausea (7 h)

End point description:

Nausea evaluated by subject on numeric rating score from 0 (no nausea) to 10 (worst nausea imaginable)

End point type	Secondary

End point timeframe:

7 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Intensity of nausea (24 h)

End point title	Intensity of nausea (24 h)

End point description:

Nausea evaluated by subject on numeric rating score from 0 (no nausea) to 10 (worst nausea imaginable)

End point type	Secondary

End point timeframe:

24 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Number of episodes of emesis (0-18 h)

End point title	Number of episodes of emesis (0-18 h)

End point description:

End point type	Secondary

End point timeframe:

0 to 18 hours after end-of surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Number of episodes				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Cumulated dose of ondansetron (0-18 h)

End point title	Cumulated dose of ondansetron (0-18 h)

End point description:

End point type	Secondary

End point timeframe:

0 to 18 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: milligram(s)				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Cumulated dose of droperidol (0-18 h)

End point title	Cumulated dose of droperidol (0-18 h)

End point description:

End point type	Secondary

End point timeframe:

0 to 18 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: milligram(s)				
median (inter-quartile range (Q1-Q3))	0 (0 to 0)	0 (0 to 0)		

Statistical analyses

No statistical analyses for this end point

Secondary: Time to discharge from the postanesthesia care unit (PACU)

End point title	Time to discharge from the postanesthesia care unit (PACU)

End point description:

End point type	Secondary

End point timeframe:

From end-of-surgery until discharge from PACU.

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: minute				
arithmetic mean (standard deviation)	106 (± 38)	123 (± 49)		

Statistical analyses

No statistical analyses for this end point

Secondary: Time to discharge from the hospital

End point title	Time to discharge from the hospital

End point description:

End point type	Secondary

End point timeframe:

Time from end-of-surgery to discharge from hospital.

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: hour				
median (inter-quartile range (Q1-Q3))	28 (26 to 29)	28 (26 to 29)		

Statistical analyses

No statistical analyses for this end point

Secondary: Duration of the spinal anesthesia

End point title	Duration of the spinal anesthesia

End point description:

End point type	Secondary

End point timeframe:

Time from end-of-surgery until subject regains normal sensibility on anterior surface of femur.

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: minute				
arithmetic mean (standard deviation)	152 (± 38)	167 (± 44)		

Statistical analyses

No statistical analyses for this end point

Secondary: Quality of sleep

End point title	Quality of sleep

End point description:

Quality of sleep during the first night after surgery

End point type	Secondary

End point timeframe:

24 hours

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Categorical (see below)				
Sleep undisturbed	6	5		
Sleep disturbed but not by pain	21	18		
Sleep disturbed by pain	3	7		

Statistical analyses

No statistical analyses for this end point

Secondary: Ability to ambulate (5 h)

End point title	Ability to ambulate (5 h)

End point description:

The ability to ambulate was assessed by physiotherapists using a standardized ambulation test ranging from 0 (subject was unable to ambulate to sitting position) to 8 (subject could walk with elbow crutches without personal physical support).

End point type	Secondary

End point timeframe:

5 hours after end-of-surgery

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	6 (4.5 to 8)	7 (6 to 8)		

Statistical analyses

No statistical analyses for this end point

Secondary: Muscular control of the operated leg during ambulation (5 h)

End point title	Muscular control of the operated leg during ambulation (5 h)

End point description:

The range of the muscular control score was 0 (subject was unable to ambulate to sitting position) to 3 (subject had good muscular control of the operated leg during all activities)

End point type	Secondary

End point timeframe:

5 hours after end-of-surgery.

End point values	Active nerve block	Sham nerve block		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	30	30		
Units: Numeric Rating Score				
median (inter-quartile range (Q1-Q3))	2.5 (2 to 3)	3 (2.5 to 3)		

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information	
Timeframe for reporting adverse events: 24 hours after end-of-surgery	
Assessment type	Systematic
Dictionary used	
Dictionary name	MedDRA
Dictionary version	21
Reporting groups	
Reporting group title	Active nerve block
Reporting group description: Subjects received an active obturator nerve block within 1 hour after total hip arthroplasty.	
Reporting group title	Sham nerve block
Reporting group description: Subjects received a sham obturator nerve block (placebo) within 1 hour after total hip arthroplasty.	

Serious adverse events	Active nerve block	Sham nerve block	
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 31 (0.00%)	0 / 31 (0.00%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events	0	0	

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

Non-serious adverse events	Active nerve block	Sham nerve block	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	10 / 31 (32.26%)	10 / 31 (32.26%)	
Nervous system disorders			
Decreased consciousness			
alternative assessment type: Non-systematic			
subjects affected / exposed	0 / 31 (0.00%)	1 / 31 (3.23%)	
occurrences (all)	0	1	
Vertigo / indisposition			
subjects affected / exposed	3 / 31 (9.68%)	2 / 31 (6.45%)	
occurrences (all)	3	2	
Fainting			

subjects affected / exposed	1 / 31 (3.23%)	0 / 31 (0.00%)	
occurrences (all)	0	0	
Confusion postoperative			
subjects affected / exposed	0 / 31 (0.00%)	1 / 31 (3.23%)	
occurrences (all)	0	0	
Blood and lymphatic system disorders			
Seepage from surgical wound			
subjects affected / exposed	4 / 31 (12.90%)	2 / 31 (6.45%)	
occurrences (all)	4	2	
Arterial hypotension			
subjects affected / exposed	0 / 31 (0.00%)	2 / 31 (6.45%)	
occurrences (all)	0	0	
Gastrointestinal disorders			
Nausea and/or vomiting			
subjects affected / exposed	2 / 31 (6.45%)	4 / 31 (12.90%)	
occurrences (all)	2	4	
Renal and urinary disorders			
Urinary retention			
subjects affected / exposed	1 / 31 (3.23%)	0 / 31 (0.00%)	
occurrences (all)	1	0	
Acute-in-chronic renal failure			
subjects affected / exposed	0 / 31 (0.00%)	1 / 31 (3.23%)	
occurrences (all)	0	1	
Endocrine disorders			
Anafylactoid reaction			
subjects affected / exposed	1 / 31 (3.23%)	0 / 31 (0.00%)	
occurrences (all)	1	0	

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

Online references

http://www.ncbi.nlm.nih.gov/pubmed/31650529