



## Clinical trial results:

**Tick borne diseases in norwegian general practice. A randomized, controlled trial for treatment of erythema migrans in norwegian general practice. A comparison of phneoxymetylpenicillin, amoxicillin and doxycycline.**

### Summary

EudraCT number	2010-023747-15
Trial protocol	NO
Global end of trial date	10 December 2014

### Results information

Result version number	v1 (current)
This version publication date	22 February 2020
First version publication date	22 February 2020
Summary attachment (see zip file)	Paper (Eliassen_Comparison_EM_CMI_2018.pdf)

### Trial information

#### Trial identification

Sponsor protocol code	070411
-----------------------	--------

#### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT01368341
WHO universal trial number (UTN)	-

Notes:

### Sponsors

Sponsor organisation name	University of Oslo
Sponsor organisation address	HELSAM/ASP, Oslo, Norway, 0318
Public contact	Antibiotic centre of Primary Care, University of Oslo, +47 22 85 06 55, post@antibiotikasenteret.no
Scientific contact	Antibiotic centre of Primary Care, University of Oslo, +47 22 85 06 55, post@antibiotikasenteret.no

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	02 March 2015
Is this the analysis of the primary completion data?	Yes
Primary completion date	10 December 2013
Global end of trial reached?	Yes
Global end of trial date	10 December 2014
Was the trial ended prematurely?	No

Notes:

## General information about the trial

Main objective of the trial:

Compare three antibiotic regimes for treatment of erythema migrans (EM).

Main objective is duration of Erythema migrans (EM). On day 1 duration until first the consultation is registered. Day 1-14 the EM is registered in a patient diary. On day 14 the doctor is asked whether the EM has disappeared. If not the patient is followed by phone from the researchers. On day 90 they are additionally asked for how long it lasted.

Protection of trial subjects:

All patients received active treatment for their EM

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	01 June 2011
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	Norway: 188
Worldwide total number of subjects	188
EEA total number of subjects	188

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)	130
From 65 to 84 years	55
85 years and over	3

## Subject disposition

### Recruitment

Recruitment details:

All patients aged at least 18 years with clinical diagnosis of erythema migrans ("a macular rash expanding from the site of the tick bite") were eligible for inclusion.

### Pre-assignment

Screening details:

Please see screening details elsewhere

### Period 1

Period 1 title	2011-2013 (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Single blind
Roles blinded	Subject

Blinding implementation details:

Patients were given a neutral carton of medication to be opened after the first consultation. The carton contained information about the trial and the study medication, and whom to contact in case of any adverse event. The original medication package from the manufacturer, with the original product information, was included. Patients therefore knew which study drug they were given, but their GP and the researchers did not. Randomisation lists were available after the complete follow up.

### Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Phenoxymethylpenicillin

Arm description: -

Arm type	Active comparator
Investigational medicinal product name	Phenoxymethylpenicillin
Investigational medicinal product code	J01CE02
Other name	Weifapenin Weifa 650 mg
Pharmaceutical forms	Tablet
Routes of administration	Gastroenteral use

Dosage and administration details:

650 mg, two tablets three times daily

<b>Arm title</b>	Amoxicillin
------------------	-------------

Arm description: -

Arm type	Active comparator
Investigational medicinal product name	Amoxicillin
Investigational medicinal product code	J01CA04
Other name	Amoxicillin Mylan 500 mg
Pharmaceutical forms	Capsule
Routes of administration	Gastroenteral use

Dosage and administration details:

one capsule three times daily

<b>Arm title</b>	Doxycycline
------------------	-------------

Arm description: -

Arm type	Active comparator
----------	-------------------

Investigational medicinal product name	Doxycycline
Investigational medicinal product code	J01AA02
Other name	Doxycyklin Hexal 100 mg
Pharmaceutical forms	Tablet
Routes of administration	Gastroenteral use

Dosage and administration details:

one tablet twice daily

<b>Number of subjects in period 1</b>	Phenoxymethylpenicillin	Amoxicillin	Doxycycline
Started	56	64	68
Completed	47	56	58
Not completed	9	8	10
Lost to follow-up	9	8	10

## Baseline characteristics

### Reporting groups

Reporting group title	2011-2013
-----------------------	-----------

Reporting group description: -

Reporting group values	2011-2013	Total	
Number of subjects	188	188	
Age categorical			
Patients included were 18-85 years of age			
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)	130	130	
From 65-84 years	55	55	
85 years and over	3	3	
Gender categorical			
Units: Subjects			
Female	113	113	
Male	75	75	

## End points

### End points reporting groups

Reporting group title	Phenoxymethylpenicillin
Reporting group description: -	
Reporting group title	Amoxicillin
Reporting group description: -	
Reporting group title	Doxycycline
Reporting group description: -	

### Primary: Duration of EM after treatment

End point title	Duration of EM after treatment
End point description: xx	
End point type	Primary
End point timeframe: Patients were followed for 1 year. We found a wide range of duration of EM: 3-293 days. As the median duration were 13-14 days in all Groups, duration was verified in half of the patients at the day 14 Control. The rest were followed regularly until time	

End point values	Phenoxymethylpenicillin	Amoxicillin	Doxycycline	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	56 <sup>[1]</sup>	64	68	
Units: Days	56	64	68	

Notes:

[1] - One lost to follow-up by day 14, but the main end point of EM duration was registered.

<b>Attachments (see zip file)</b>	Duration EM/20180207_CLM-17-13016_Figure 2a.tif
-----------------------------------	---

### Statistical analyses

<b>Statistical analysis title</b>	Kaplan-Meier
Statistical analysis description: The primary outcome is shown in a Kaplan-Meier plot and tested using the log-rank test.	
Comparison groups	Phenoxymethylpenicillin v Amoxicillin v Doxycycline
Number of subjects included in analysis	188
Analysis specification	Pre-specified
Analysis type	equivalence
P-value	≤ 0.05
Method	Logrank

### Secondary: concomittant symptoms

End point title	concomittant symptoms
End point description:	
Tiredness	
Headache	
Joint pain	
Neck stiffness	
Fever	
Palpitations	
Myalgia	
Sore throat	
Tender skin	
Dizziness	
Nausea	
Chest pain	
Diarrhea	
Chills	
Hot flushes	
Coughing	
(Multiple EMs)	
End point type	Secondary
End point timeframe:	
During treatment day 1-14	

End point values	Phenoxymethyl penicillin	Amoxicillin	Doxycycline	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	55	64	67	
Units: concomittant symptoms	17	17	17	

## Statistical analyses

Statistical analysis title	ANOVA
Statistical analysis description:	
means were compared using ANOVA, and categorical data were analyzed using c-square tests. Multiple pair-wise comparisons were carried out if the c-square test rejected the null hypothesis of equality of the proportions. The method is also called post-hoc c-square test of proportions.	
Comparison groups	Phenoxymethylpenicillin v Amoxicillin v Doxycycline
Number of subjects included in analysis	186
Analysis specification	Pre-specified
Analysis type	equivalence
P-value	< 0.05
Method	ANOVA
Parameter estimate	Mean difference (final values)

## Secondary: Side effects

End point title	Side effects
-----------------	--------------



End point description:

Diarrhea  
Nausea  
Skin rash  
Other

End point type	Secondary
----------------	-----------

End point timeframe:

During treatment days 1-14

End point values	Phenoxymethylpenicillin	Amoxicillin	Doxycycline	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	55	64	67	
Units: Number	55	64	67	

## Statistical analyses

Statistical analysis title	ANOVA
----------------------------	-------

Statistical analysis description:

means were compared using ANOVA, and categorical data were analyzed using c-square tests. Multiple pair-wise comparisons were carried out if the c-square test rejected the null hypothesis of equality of the proportions

Comparison groups	Phenoxymethylpenicillin v Amoxicillin v Doxycycline
Number of subjects included in analysis	186
Analysis specification	Pre-specified
Analysis type	equivalence <sup>[2]</sup>
P-value	< 0.05
Method	ANOVA

Notes:

[2] - means were compared using ANOVA, and categorical data were analyzed using c-square tests. Multiple pair-wise comparisons were carried out if the c-square test rejected the null hypothesis of equality of the proportions

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Patients were followed for 1 year

Assessment type	Non-systematic
-----------------	----------------

### Dictionary used

Dictionary name	Reported
-----------------	----------

Dictionary version	1
--------------------	---

### Reporting groups

Reporting group title	Phenoxymethylpenicillin
-----------------------	-------------------------

Reporting group description: -

Reporting group title	Amoxicillin
-----------------------	-------------

Reporting group description: -

Reporting group title	Doxycycline
-----------------------	-------------

Reporting group description: -

Serious adverse events	Phenoxymethylpenicillin	Amoxicillin	Doxycycline
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 56 (0.00%)	0 / 64 (0.00%)	0 / 68 (0.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0

Frequency threshold for reporting non-serious adverse events: 1 %

Non-serious adverse events	Phenoxymethylpenicillin	Amoxicillin	Doxycycline
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 56 (0.00%)	1 / 64 (1.56%)	1 / 68 (1.47%)
Gastrointestinal disorders			
Diarrhea			
subjects affected / exposed	0 / 56 (0.00%)	1 / 64 (1.56%)	0 / 68 (0.00%)
occurrences (all)	0	1	0
Skin and subcutaneous tissue disorders			
Sunburn			
subjects affected / exposed	0 / 56 (0.00%)	0 / 64 (0.00%)	1 / 68 (1.47%)
occurrences (all)	0	0	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