



Clinical trial results:

Assessment of the optimal dosing of piperacillin-tazobactam in intensive care unit patients: extended versus continuous infusion

Summary

EudraCT number	2010-021050-20
Trial protocol	BE
Global end of trial date	16 November 2012

Results information

Result version number	v1 (current)
This version publication date	08 September 2024
First version publication date	08 September 2024

Trial information

Trial identification

Sponsor protocol code	AGO/2010/003
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Additional study identifiers

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

Notes:

Sponsors

Sponsor organisation name	Ghent University Hospital
Sponsor organisation address	Corneel Heymanslaan 10, Ghent, Belgium, 9000
Public contact	Hiruz CTU, Ghent University Hospital, +32 93320500, hiruz.ctu@uzgent.be
Scientific contact	Hiruz CTU, Ghent University Hospital, +32 93320500, hiruz.ctu@uzgent.be

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	16 November 2012
Is this the analysis of the primary completion data?	Yes
Primary completion date	16 November 2012
Global end of trial reached?	Yes
Global end of trial date	16 November 2012
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To compare the standard extended dosing regimen of piperacillin-tazobactam with continuous infusion to determine the optimal dosing in an intensive care population using pharmacokinetic/pharmacodynamic approaches

Protection of trial subjects:

Ethics review and approval, informed consent, supportive care and routine monitoring.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	23 September 2010
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	Belgium: 14
Worldwide total number of subjects	14
EEA total number of subjects	14

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)	14
From 65 to 84 years	0
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

14 patients were screened in the period from 23-09-2010 till 16-11-2012. 14 patients were included, 14 patients were randomised. 13 patients were included and completed the trial. End of trial notification was dated xx-mmm-yyyy (last patient last visit) and submitted to EC 24-04-2018.

Pre-assignment

Screening details:

Inclusion Criteria:

Adult patients (> 18 years) admitted on the intensive care unit (surgical and medical surgery).

Starting a treatment with piperacillin/tazobactam

Signed informed consent

Hematocrit $\geq$ 21%

Available arterial line

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?	Yes
Arm title	Extended infusion

Arm description: -

Arm type	Active comparator
Investigational medicinal product name	Tazocin 4 g
Investigational medicinal product code	CAS 61477-96-1
Other name	
Pharmaceutical forms	Powder for solution for injection
Routes of administration	Intravenous use

Dosage and administration details:

Maximum dose allowed: 16 g

Intravenous use

Arm title	Continuous infusion
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Arm description: -

Arm type	Experimental
Investigational medicinal product name	Tazocin 4 g
Investigational medicinal product code	CAS 61477-96-1
Other name	
Pharmaceutical forms	Powder for solution for injection
Routes of administration	Intravenous use

Dosage and administration details:

Maximum dose allowed: 16 g

Intravenous use

Number of subjects in period 1	Extended infusion	Continuous infusion
Started	7	7
Completed	7	6
Not completed	0	1
Adverse event, non-fatal	-	1

Baseline characteristics

Reporting groups

Reporting group title

Overall Trial

Reporting group description: -

Reporting group values	Overall Trial	Total	
Number of subjects	14	14	
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)	0	0	
From 65-84 years	14	14	
85 years and over	0	0	
Gender categorical			
Units: Subjects			
Female	0	0	
Male	14	14	

End points

End points reporting groups

Reporting group title	Extended infusion
Reporting group description: -	
Reporting group title	Continuous infusion
Reporting group description: -	

Primary: Primary

End point title	Primary
End point description:	
End point type	Primary
End point timeframe:	
Overall study	

End point values	Extended infusion	Continuous infusion		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	7	7		
Units: Subjects	7	7		

Statistical analyses

Statistical analysis title	Statistical analysis
Statistical analysis description:	
Parametric data: unpaired t-test or students t-test	
Non-parametric data: Wilcoxon's test	
Level of significance $p < 0.05$	
Monte Carlo approach will be applied to simulate 10000 subjects for each regimen	
De statistical analyses will be performed with the support of "cel Gezondheidsstatistiek, UGent/UZGent"	
Comparison groups	Extended infusion v Continuous infusion
Number of subjects included in analysis	14
Analysis specification	Pre-specified
Analysis type	other
P-value	= 0
Method	See article

Adverse events

Adverse events information

Timeframe for reporting adverse events:

Overall study

Assessment type	Non-systematic
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Dictionary used

Dictionary name	MedDRA
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Dictionary version	24
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Reporting groups

Reporting group title	Extended infusion
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Reporting group description: -

Reporting group title	Continuous infusion
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Reporting group description: -

Serious adverse events	Extended infusion	Continuous infusion	
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events	0	0	
Endocrine disorders			
Acute tubular necrosis			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	

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

Non-serious adverse events	Extended infusion	Continuous infusion	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
Cardiac disorders			
Hypertension			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences (all)	0	1	
Blood and lymphatic system disorders			
hypomagnesemia			

subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences (all)	0	1	
Hypophosphatemia			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences (all)	0	1	
Thrombopenia			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences (all)	0	1	
Hyperpotassemia			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences (all)	0	1	
Hypoalbuminaemia			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences (all)	0	1	
Low hematocrit			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences (all)	0	1	
Endocrine disorders			
Oliguria			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences (all)	0	1	
Anuria			
subjects affected / exposed	0 / 7 (0.00%)	1 / 7 (14.29%)	
occurrences (all)	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