# 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 |

**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 >= 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 |

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<br>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<br>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: | |
| Overal 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<br>Non-parametric data: Wilcoxon's test<br>Level of significance p< 0.05<br>Monte Carlo approach will be applied to simulate 10000 subjects for each regimen<br>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 |

| Dictionary used | |
|---|---|
| Dictionary name | MedDRA |
| Dictionary version | 24 |

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