# Clinical trial results:
# Colistin use in Cystic Fibrosis patients: pharmacokinetic studies (intravenous administration) in relation with pharmacodynamics, tolerance profile and risk of selection of resistance.

## Summary

| | |
|---|---|
| EudraCT number | 2013-004987-80 |
| Trial protocol | BE |
| Global end of trial date | 04 May 2020 |

### Results information

| | |
|---|---|
| Result version number | v1 (current) |
| This version publication date | 17 September 2025 |
| First version publication date | 17 September 2025 |
| Summary attachment (see zip file) | 2013-004987-80_results (2013-004987-80 - results - Standard doses of intravenous colistin do not achieve therapeutic plasma target levels in adult c.pdf) |

## Trial information

### Trial identification

| | |
|---|---|
| Sponsor protocol code | 2013-Colistin |

### Additional study identifiers

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

Notes:

### Sponsors

| | |
|---|---|
| Sponsor organisation name | HUB - Hôpital Erasme |
| Sponsor organisation address | Route de Lennik 808, Brussels, Belgium, |
| Public contact | Dr Wellemans Isabelle, HUB - Hôpital Erasme, 0032 25558111, isabelle.wellemans@erasme.ulb.ac.be |
| Scientific contact | Dr Wellemans Isabelle, HUB- Hôpital Erasme, 0032 25558111, isabelle.wellemans@erasme.ulb.ac.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 | 04 May 2020 |
| Is this the analysis of the primary completion data? | No |

| | |
|---|---|
| Global end of trial reached? | Yes |
| Global end of trial date | 04 May 2020 |
| Was the trial ended prematurely? | No |

Notes:

## General information about the trial

Main objective of the trial:

1) Prospectively evaluating the pharmacokinetics and pharmacodynamics of colistin in adult CF patients infected by multidrug resistant P. aeruginosa in order to propose algorithms for optimizing doses in this patients' population
2) Studying in vitro the pharmacodynamics of colistin activity against clinical isolates from the same patients when grown as biofilms as well as the conditions of drug exposure favoring selection of resistance in vitro.

Protection of trial subjects:

NA

Background therapy: -

Evidence for comparator: -

| | |
|---|---|
| Actual start date of recruitment | 03 February 2014 |
| 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: 24 |
| Worldwide total number of subjects | 24 |
| EEA total number of subjects | 24 |

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) | 24 |
| From 65 to 84 years | 0 |
| 85 years and over | 0 |

## Subject disposition

### Recruitment

Recruitment details:

Recruitment in Belgium. February 2014 - May 2020

### Pre-assignment

Screening details:

We, prospectively, evaluated the pharmacokinetic (PK) profile of intra-venous (iv) colistin as well as its safety in adult CF patients presenting an acute exacerbation
and colonized with Pa.

### Period 1

| | |
|---|---|
| Period 1 title | Overall trial (overall period) |
| Is this the baseline period? | Yes |
| Allocation method | Non-randomised - controlled |
| Blinding used | Not blinded |

Blinding implementation details:

The blinding was not applicable to the period

### Arms

| | |
|---|---|
| **Arm title** | CMS Therapy |

Arm description: -

| | |
|---|---|
| Arm type | Active comparator |
| Investigational medicinal product name | Colistin |
| Investigational medicinal product code | |
| Other name | Colistimethate Sodium |
| Pharmaceutical forms | Powder for solution for injection/infusion |
| Routes of administration | Intravenous use |

Dosage and administration details:

Colistin was administered as a solution for infusion at a dose of 2 million units every 8 hours.

| **Number of subjects in period 1** | CMS Therapy |
|---|---|
| Started | 24 |
| Completed | 17 |
| Not completed | 7 |
| Incomplete pharmacokinetic data collection for the | 7 |

## Baseline characteristics

| Reporting groups | |
|---|---|
| Reporting group title | Overall trial |

Reporting group description: -

| Reporting group values | Overall trial | Total | |
|---|---|---|---|
| Number of subjects | 24 | 24 | |
| Age categorical<br>Units: Subjects | | | |
| Adults (18-64 years) | 24 | 24 | |
| Age continuous<br>Units: years | | | |
| median | 34.5 | | |
| full range (min-max) | 20 to 57 | - | |
| Gender categorical<br>Units: Subjects | | | |
| Female | 14 | 14 | |
| Male | 10 | 10 | |

## End points

### End points reporting groups

| Reporting group title | CMS Therapy |
|---|---|

Reporting group description: -

### Primary: Pharmacocinetic Colistine

| End point title | Pharmacocinetic Colistine[1] |
|---|---|

End point description:

Cmax for CMS. We included 24 patients [14 F, median age (min-max) 34.5 yrs (20–57), body weight 57 kg (40–69), serum creatinine 0.7 mg/dL (0.47– 1.1)]. PK data are at present available from 17 patients. Cmax for CMS was 10.4 (8.4–12.4) mg/L, for total colistin A+B 1.97 (1.31–2.55) mg/L and for unbound colistin A+B 0.55 (0.37–0.69) mg/L. At trough level, all total colistin results (0.48 [0.25–0.67] mg/L) and unbound colistin (0.05 [0.03–0.09] mg/L) were inferior to the MIC of isolated strains and protein binding of colistin was high 87.5 (83.7–90.1) %.

| End point type | Primary |
|---|---|

End point timeframe:

End of Trial

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: No formal statistical analysis was performed for this primary endpoint, as the study aimed to provide a descriptive pharmacokinetic characterization of colistin exposure in cystic fibrosis patients. The results are presented as median values with interquartile ranges, reflecting the variability in drug exposure without the need for hypothesis testing.

| **End point values** | CMS Therapy | | | |
|---|---|---|---|---|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 17 | | | |
| Units: mg.h/L | | | | |
| arithmetic mean (full range (min-max)) | 10.4 (8.4 to 12.4) | | | |

### Statistical analyses

No statistical analyses for this end point

## Adverse events

| Adverse events information[1] | |
|---|---|
| Timeframe for reporting adverse events: February 2014 - May 2020 | |
| Assessment type | Systematic |

| Dictionary used | |
|---|---|
| Dictionary name | Inv assesment |
| Dictionary version | NA |

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

Notes:

[1] - There are no non-serious adverse events recorded for these results. It is expected that there will be at least one non-serious adverse event reported.
Justification: No non-serious adverse events were reported during the study. Patients tolerated the treatment well, and no clinically relevant adverse reactions were observed in the monitored population. This aligns with the safety profile of colistin in this specific patient group and study conditions

## 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