



Clinical trial results:

The role of mast cells on duodenal permeability after duodenal acid perfusion in healthy volunteers

Summary

| | |
|--------------------------|------------------|
| EudraCT number | 2015-000244-42 |
| Trial protocol | BE |
| Global end of trial date | 13 December 2016 |

Results information

| | |
|--------------------------------|---------------|
| Result version number | v1 (current) |
| This version publication date | 10 April 2025 |
| First version publication date | 10 April 2025 |

Trial information

Trial identification

| | |
|-----------------------|-------------------------------------|
| Sponsor protocol code | acid_permeability_healthyvolunteers |
|-----------------------|-------------------------------------|

Additional study identifiers

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

Notes:

Sponsors

| | |
|------------------------------|---|
| Sponsor organisation name | UZLeuven / KULeuven / TARGID |
| Sponsor organisation address | herestraat 49, Leuven, Belgium, 3000 |
| Public contact | Jan Tack, UZLeuven / KULeuven / TARGID, jan.tack@kuleuven.be |
| Scientific contact | Jan Tack, UZLeuven / KULeuven / TARGID, jan.tack@kuleuven.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 | 13 December 2016 |
| Is this the analysis of the primary completion data? | Yes |
| Primary completion date | 13 December 2016 |
| Global end of trial reached? | Yes |
| Global end of trial date | 13 December 2016 |
| Was the trial ended prematurely? | No |

Notes:

General information about the trial

Main objective of the trial:

To assess the effect of mast cell inhibition on duodenal mucosal integrity of healthy volunteers after acid infusion in the duodenum

Protection of trial subjects:

healthy volunteers

Background therapy: -

Evidence for comparator: -

| | |
|---|---------------|
| Actual start date of recruitment | 30 April 2015 |
| 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: 20 |
| Worldwide total number of subjects | 20 |
| EEA total number of subjects | 20 |

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) | 20 |
| From 65 to 84 years | 0 |
| 85 years and over | 0 |

Subject disposition

Recruitment

Recruitment details:

Healthy volunteers were recruited from a mailing list

Pre-assignment

Screening details:

exclusion of gastrointestinal symptoms

no history of gastrointestinal disease

no regular use of medication besides oral contraceptives,

no type 1 or 2 diabetes

no first-degree family members with type 1 diabetes, celiac disease or inflammatory bowel disease

no first-degree family members with type 1 diabetes, celiac disease or IBD

Period 1

| | |
|------------------------------|--|
| Period 1 title | 2 week mast cell stabilization or plac |
| Is this the baseline period? | No |
| Allocation method | Randomised - controlled |
| Blinding used | Double blind |
| Roles blinded | Subject, Investigator, Data analyst |

Arms

| | |
|------------------------------|----------------------|
| Are arms mutually exclusive? | No |
| Arm title | disodiumcromoglycate |

Arm description:

intake of disodiumcromoglycate

(DSCG; Nalcrom, Italchimici SpA, Rome, Italy), a mast cell stabilizer, 200 mg qid for 2 weeks before the acid perfusion study

| | |
|--|----------------------|
| Arm type | Experimental |
| Investigational medicinal product name | disodiumcromoglycate |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Capsule |
| Routes of administration | Oral use |

Dosage and administration details:

intake of oral disodiumcromoglycate (DSCG; Nalcrom, Italchimici SpA, Rome, Italy), a mast cell stabilizer, 200 mg qid for 2 weeks before study day with acid perfusion study

| | |
|------------------|---------|
| Arm title | placebo |
|------------------|---------|

Arm description:

intake of oral placebo (190 mg mannitol) qid during 2 weeks before the acid perfusion study

| | |
|--|----------|
| Arm type | Placebo |
| Investigational medicinal product name | placebo |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Capsule |
| Routes of administration | Oral use |

Dosage and administration details:

Oral intake of placebo capsule (190 mg mannitol) qid for 2 weeks before the acid perfusion study day

| Number of subjects in period 1 | disodium cromoglycate | placebo |
|--------------------------------|-----------------------|---------|
| Started | 10 | 10 |
| Completed | 10 | 10 |

Period 2

| | |
|------------------------------|-------------------------------------|
| Period 2 title | part 1 saline/acid perfusion |
| Is this the baseline period? | No |
| Allocation method | Randomised - controlled |
| Blinding used | Double blind |
| Roles blinded | Subject, Investigator, Data analyst |

Arms

| | |
|------------------------------|--------|
| Are arms mutually exclusive? | Yes |
| Arm title | saline |

Arm description:

Afer a stabilization period of 20 min, one investigator started the infusion of saline in the duodenum at a rate of 5 mL min⁻¹ during 30 min, in a randomized, cross-over manner

| | |
|--|------------------------------------|
| Arm type | Placebo |
| Investigational medicinal product name | saline |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Solution for solution for infusion |
| Routes of administration | Infusion |

Dosage and administration details:

an assembly including a pH electrode with an antimony pH sensor and a thin infusion tube (2 mm diameter) was introduced transnasally and positioned in the second portion of the duodenum afer an overnight fast. Infusion of saline in the duodenum at a rate of 5 mL min⁻¹ during 30 min

| | |
|------------------|---------------|
| Arm title | acid infusion |
|------------------|---------------|

Arm description:

Afer a stabilization period of 20 min, one investigator started the infusion of f 0.1 N HCl (acid) in the duodenum at a rate of 5 mL min⁻¹ during 30 min, in a randomized, cross-over manner

| | |
|--|-----------------------|
| Arm type | Active comparator |
| Investigational medicinal product name | 0.1 N HCl (acid) |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Solution for infusion |
| Routes of administration | Other use |

Dosage and administration details:

an assembly including a pH electrode with an antimony pH sensor and a thin infusion tube (2 mm diameter) was introduced transnasally and positioned in the second portion of the duodenum afer an overnight fast. Infusion of 0.1 N HCl (acid) in the duodenum at a rate of 5 mL min⁻¹ during 30 min

| Number of subjects in period 2 | saline | acid infusion |
|--------------------------------|--------|---------------|
| Started | 10 | 10 |
| Completed | 10 | 10 |

Period 3

| | |
|------------------------------|-------------------------------------|
| Period 3 title | overall trial |
| Is this the baseline period? | Yes ^[1] |
| Allocation method | Randomised - controlled |
| Blinding used | Double blind |
| Roles blinded | Subject, Investigator, Data analyst |

Arms

| | |
|--|------------------------|
| Arm title | overall trial |
| Arm description: - | |
| Arm type | overall trial subjects |
| Investigational medicinal product name | disodiumcromoglycate |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Capsule |
| Routes of administration | Oral use |

Dosage and administration details:

intake of oral disodiumcromoglycate (DSCG; Nalcrom, Italchimici SpA, Rome, Italy), a mast cell stabilizer, 200 mg qid for 2 weeks before study day with acid perfusion study

| | |
|--|----------|
| Investigational medicinal product name | placebo |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Capsule |
| Routes of administration | Oral use |

Dosage and administration details:

Oral intake of placebo capsule (190 mg mannitol) qid for 2 weeks before the acid perfusion study day

| | |
|--|------------------------------------|
| Investigational medicinal product name | saline |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Solution for solution for infusion |
| Routes of administration | Infusion |

Dosage and administration details:

an assembly including a pH electrode with an antimony pH sensor and a thin infusion tube (2 mm diameter) was introduced transnasally and positioned in the second portion of the duodenum after an overnight fast. Infusion of saline in the duodenum at a rate of 5 mL min⁻¹ during 30 min

| | |
|--|-----------------------|
| Investigational medicinal product name | 0.1 N HCl (acid) |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Solution for infusion |
| Routes of administration | Other use |

Dosage and administration details:

an assembly including a pH electrode with an antimony pH sensor and a thin infusion tube (2 mm diameter)

was introduced transnasally and positioned in the second portion of the duodenum after an overnight fast. Infusion of 0.1 N HCl (acid) in the duodenum at a rate of 5 mL min⁻¹ during 30 min

Notes:

[1] - Period 1 is not the baseline period. It is expected that period 1 will be the baseline period.

Justification: The study was divided into 2 parts with each 10 healthy volunteers. In total there were 20 participants. Period 3 was made as the overall study to be able to set the baseline characteristics of all 20 participants together.

| Number of subjects in period 3 | overall trial |
|---------------------------------------|---------------|
| Started | 20 |
| Completed | 20 |

Baseline characteristics

Reporting groups

| | |
|-----------------------|---------------|
| Reporting group title | overall trial |
|-----------------------|---------------|

Reporting group description:

full group: part 1 + part 2

| Reporting group values | overall trial | Total | |
|------------------------|---------------|-------|--|
| Number of subjects | 20 | 20 | |
| Age categorical | | | |
| Units: Subjects | | | |
| Adults (18-64 years) | 20 | 20 | |
| Age continuous | | | |
| Units: years | | | |
| arithmetic mean | 28.9 | | |
| standard deviation | ± 8 | - | |
| Gender categorical | | | |
| Units: Subjects | | | |
| Female | 14 | 14 | |
| Male | 6 | 6 | |

End points

End points reporting groups

| | |
|---|----------------------|
| Reporting group title | disodiumcromoglycate |
| Reporting group description: intake of disodiumcromoglycate (DSCG; Nalcrom, Italchimici SpA, Rome, Italy), a mast cell stabilizer, 200 mg qid for 2 weeks before the acid perfusion study | |
| Reporting group title | placebo |
| Reporting group description: intake of oral placebo (190 mg mannitol) qid during 2 weeks before the acid perfusion study | |
| Reporting group title | saline |
| Reporting group description: After a stabilization period of 20 min, one investigator started the infusion of saline in the duodenum at a rate of 5 mL min ⁻¹ during 30 min, in a randomized, cross-over manner | |
| Reporting group title | acid infusion |
| Reporting group description: After a stabilization period of 20 min, one investigator started the infusion of 0.1 N HCl (acid) in the duodenum at a rate of 5 mL min ⁻¹ during 30 min, in a randomized, cross-over manner | |
| Reporting group title | overall trial |
| Reporting group description: - | |

Primary: Intra gastric pressure

| | |
|--|------------------------|
| End point title | Intra gastric pressure |
| End point description: | |
| End point type | Primary |
| End point timeframe: A high-resolution manometry (HRM) catheter was inserted. After a stabilization period of 20 min, infusion of 0.1 N HCl (acid) or saline was started in the duodenum at a rate of 5 mL min ⁻¹ during 30 min, in a randomized, cross-over manner. | |

| End point values | disodiumcromoglycate | placebo | saline | acid infusion |
|---|----------------------|-----------------|-----------------|-----------------|
| Subject group type | Reporting group | Reporting group | Reporting group | Reporting group |
| Number of subjects analysed | 10 | 10 | 10 | 10 |
| Units: mmHg | | | | |
| least squares mean (standard deviation) | -39.8 (± 17.8) | -36.7 (± 9.1) | 9.6 (± 8.1) | -52.4 (± 13.2) |

Statistical analyses

| | |
|----------------------------|------------------------|
| Statistical analysis title | IGP infusion vs saline |
| Comparison groups | saline v acid infusion |

| | |
|---|-----------------|
| Number of subjects included in analysis | 20 |
| Analysis specification | Pre-specified |
| Analysis type | superiority |
| P-value | = 0.003 |
| Method | t-test, 1-sided |

Primary: Intra gastric pressure

| | |
|-----------------|------------------------|
| End point title | Intra gastric pressure |
|-----------------|------------------------|

End point description:

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

End point timeframe:

a high-resolution manometry (HRM) catheter) was inserted through the nose and positioned in the gastric fundus. After a stabilization period of 20 min infusion of 0.1 N HCl (acid) or saline in the duodenum at a rate of 5 mL min⁻¹ during 30 min.

| End point values | disodiumcromo glycate | placebo | | |
|-----------------------------|--------------------------|-----------------|--|--|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 10 | 10 | | |
| Units: mmHg | | | | |
| median (standard deviation) | -39.8 (± 17.8) | -36.7 (± 9.1) | | |

Statistical analyses

| | |
|---|--------------------------------|
| Statistical analysis title | intra gastric pressure |
| Comparison groups | placebo v disodiumcromoglycate |
| Number of subjects included in analysis | 20 |
| Analysis specification | Pre-specified |
| Analysis type | superiority |
| P-value | = 0.86 |
| Method | t-test, 1-sided |

Adverse events

Adverse events information^[1]

Timeframe for reporting adverse events:

For each individual, corresponds to timeframe of study participation (from signing of informed consent until last visit).

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

Dictionary used

| | |
|-----------------|--------|
| Dictionary name | MedDRA |
|-----------------|--------|

| | |
|--------------------|----|
| Dictionary version | 23 |
|--------------------|----|

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

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: there were no AE during this trial

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/33060783>