



Clinical trial results: The role of leptin in regulating hepatic lipid metabolism in humans Summary

| | |
|--------------------------|------------------|
| EudraCT number | 2017-003014-22 |
| Trial protocol | AT |
| Global end of trial date | 24 November 2024 |

Results information

| | |
|--------------------------------|---------------|
| Result version number | v1 (current) |
| This version publication date | 25 April 2026 |
| First version publication date | 25 April 2026 |

Trial information

Trial identification

| | |
|-----------------------|-------------|
| Sponsor protocol code | Thalamus_V3 |
|-----------------------|-------------|

Additional study identifiers

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

Notes:

Sponsors

| | |
|------------------------------|---|
| Sponsor organisation name | Medical University of Vienna |
| Sponsor organisation address | Waehringer Guertel 18-20, Vienna, Austria, 1090 |
| Public contact | Sekretariat Endokrinologie, Medical University of Vienna, 0043 14040043100, peter.wolf@meduniwien.ac.at |
| Scientific contact | Sekretariat Endokrinologie, Medical University of Vienna, 0043 14040043100, peter.wolf@meduniwien.ac.at |

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 | 01 August 2022 |
| Is this the analysis of the primary completion data? | Yes |
| Primary completion date | 01 August 2022 |
| Global end of trial reached? | Yes |
| Global end of trial date | 24 November 2024 |
| Was the trial ended prematurely? | No |

Notes:

General information about the trial

Main objective of the trial:

Define the role of leptin action in regulating hepatic VLDL secretion, lipid content and energy metabolism in healthy human subjects

Protection of trial subjects:

Study days according to standardised operating procedures

Background therapy: -

Evidence for comparator: -

| | |
|---|--------------|
| Actual start date of recruitment | 01 June 2018 |
| Long term follow-up planned | No |
| Independent data monitoring committee (IDMC) involvement? | Yes |

Notes:

Population of trial subjects

Subjects enrolled per country

| | |
|--------------------------------------|-------------|
| Country: Number of subjects enrolled | Austria: 47 |
| Worldwide total number of subjects | 47 |
| EEA total number of subjects | 47 |

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) | 47 |
| From 65 to 84 years | 0 |
| 85 years and over | 0 |

Subject disposition

Recruitment

Recruitment details:

Recruitment was done in the outpatient's department via online advertisement

Pre-assignment

Screening details:

Inclusion and exclusion criteria: male, aged between 18 and 70 years with plasma triglycerides below 150 mg/dL at screening. In cohort 3, female liver transplant recipients were also eligible. Further inclusion criteria for cohort 3 were: liver transplantation more than 6 months

Period 1

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

Arms

| | |
|---|---|
| Arm title | Metreleptin |
| Arm description: active substance (metreleptin; 0,1 mg/kg/BW) or placebo as single s.c. injection; cross-over design | |
| Arm type | Active comparator |
| Investigational medicinal product name | Metreleptin |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Powder and solvent for solution for injection |
| Routes of administration | Subcutaneous use |

Dosage and administration details:

Dosage and administration details:
0,1 mg/kg/BW

| Number of subjects in period 1 | Metreleptin |
|--------------------------------|-------------|
| Started | 47 |
| Completed | 42 |
| Not completed | 5 |
| Screening failure | 1 |
| Adverse event, non-fatal | 1 |
| Protocol deviation | 2 |
| Hypertriglyceridemia | 1 |

Baseline characteristics

Reporting groups

| | |
|-----------------------|-----------------------------------|
| Reporting group title | Healthy subjects (overall period) |
|-----------------------|-----------------------------------|

Reporting group description: -

| Reporting group values | Healthy subjects (overall period) | Total | |
|--|-----------------------------------|-------|--|
| Number of subjects | 47 | 47 | |
| 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) | 47 | 47 | |
| From 65-84 years | 0 | 0 | |
| 85 years and over | 0 | 0 | |
| Gender categorical | | | |
| Units: Subjects | | | |
| Female | 12 | 12 | |
| Male | 35 | 35 | |

Subject analysis sets

| | |
|----------------------------|-------------|
| Subject analysis set title | Metreleptin |
|----------------------------|-------------|

| | |
|---------------------------|--------------|
| Subject analysis set type | Per protocol |
|---------------------------|--------------|

Subject analysis set description:

0,1 mg/kg/BW as a single injection (1x)

| | |
|----------------------------|---------|
| Subject analysis set title | Placebo |
|----------------------------|---------|

| | |
|---------------------------|--------------|
| Subject analysis set type | Per protocol |
|---------------------------|--------------|

Subject analysis set description:

0,9% NaCl (equal volume), s.c. injection

| Reporting group values | Metreleptin | Placebo | |
|--|-------------|---------|--|
| Number of subjects | 42 | 42 | |
| 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) | 42 | 42 | |

| | | | |
|-------------------|---|---|--|
| From 65-84 years | 0 | 0 | |
| 85 years and over | 0 | 0 | |

| | | | |
|--------------------|----|----|--|
| Gender categorical | | | |
| Units: Subjects | | | |
| Female | 11 | 11 | |
| Male | 31 | 31 | |

End points

End points reporting groups

| | |
|---|--------------|
| Reporting group title | Metreleptin |
| Reporting group description: active substance (metreleptin; 0,1 mg/kg/BW) or placebo as single s.c. injection; cross-over design | |
| Subject analysis set title | Metreleptin |
| Subject analysis set type | Per protocol |
| Subject analysis set description: 0,1 mg/kg/BW as a single injection (1x) | |
| Subject analysis set title | Placebo |
| Subject analysis set type | Per protocol |
| Subject analysis set description: 0,9% NaCl (equal volume), s.c. injection | |

Primary: VLDL triglyceride secretion rate

| | |
|---|----------------------------------|
| End point title | VLDL triglyceride secretion rate |
| End point description: Intralipid protocol | |
| End point type | Primary |
| End point timeframe: measured 1x / treatment arm | |

| End point values | Metreleptin | Placebo | | |
|-----------------------------|----------------------|----------------------|--|--|
| Subject group type | Subject analysis set | Subject analysis set | | |
| Number of subjects analysed | 42 | 42 | | |
| Units: mg/h | | | | |
| number (not applicable) | 438 | 329 | | |

Statistical analyses

| | |
|---|-----------------------|
| Statistical analysis title | Paired T-tests |
| Statistical analysis description: Paired T-tests | |
| Comparison groups | Metreleptin v Placebo |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other |
| P-value | < 0.05 |
| Method | t-test, 2-sided |

Adverse events

Adverse events information

Timeframe for reporting adverse events:

Study duration

| | |
|-----------------|------------|
| Assessment type | Systematic |
|-----------------|------------|

Dictionary used

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

| | |
|--------------------|------|
| Dictionary version | 25.0 |
|--------------------|------|

Reporting groups

| | |
|-----------------------|-----------------------|
| Reporting group title | Metreleptin + Placebo |
|-----------------------|-----------------------|

Reporting group description: -

| Serious adverse events | Metreleptin + Placebo | | |
|---|--------------------------|--|--|
| Total subjects affected by serious adverse events | | | |
| subjects affected / exposed | 0 / 47 (0.00%) | | |
| number of deaths (all causes) | 0 | | |
| number of deaths resulting from adverse events | 0 | | |

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

| Non-serious adverse events | Metreleptin + Placebo | | |
|---|--------------------------|--|--|
| Total subjects affected by non-serious adverse events | | | |
| subjects affected / exposed | 1 / 47 (2.13%) | | |
| Skin and subcutaneous tissue disorders | | | |
| mild anaphylactoid reaction to intralipid infusion | | | |
| subjects affected / exposed | 1 / 47 (2.13%) | | |
| occurrences (all) | 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

Online references

<http://www.ncbi.nlm.nih.gov/pubmed/36220067>

<http://www.ncbi.nlm.nih.gov/pubmed/40204211>