



## Clinical trial results:

**Investigate the differences between treating Chronic Kidney Disease - Mineral and Bone Disorder with an iron-containing phosphate binder or a calcium-containing phosphate binder in Chronic Kidney Disease stage 3-5.**

### Summary

|                          |                  |
|--------------------------|------------------|
| EudraCT number           | 2017-002095-10   |
| Trial protocol           | DK               |
| Global end of trial date | 14 November 2019 |

### Results information

|                                |                 |
|--------------------------------|-----------------|
| Result version number          | v1 (current)    |
| This version publication date  | 02 January 2021 |
| First version publication date | 02 January 2021 |

### Trial information

#### Trial identification

|                       |           |
|-----------------------|-----------|
| Sponsor protocol code | MV-2-2017 |
|-----------------------|-----------|

#### Additional study identifiers

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

Notes:

### Sponsors

|                              |   |
|------------------------------|---|
| Sponsor organisation name    | Medicinsk forskning   |
| Sponsor organisation address | Lægårdvej 12, Holstebro, Denmark, 7500  |
| Public contact               | Marie Houmaa Vrist, Universitetsklinik for Nyresygdomme og Blodtryksforhøjelse, Regionshospitalet Holstebro, +45 78436585, Jesper.Noergaard.Bech@vest.rm.dk |
| Scientific contact           | Marie Houmaa Vrist, Universitetsklinik for Nyresygdomme og Blodtryksforhøjelse, Regionshospitalet Holstebro, +45 78436585, Jesper.Noergaard.Bech@vest.rm.dk |

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                       | 09 December 2019 |
| Is this the analysis of the primary completion data? | Yes              |
| Primary completion date                              | 14 November 2019 |
| Global end of trial reached?                         | Yes              |
| Global end of trial date                             | 14 November 2019 |
| Was the trial ended prematurely?                     | Yes              |

Notes:

## General information about the trial

Main objective of the trial:

To investigate whether treatment with an iron- or calcium-containing phosphate binder can affect differently the results from 18F-NaF PET/CT, bALP, osteocalcin, FGF23 og OPG/RANKL ratio. Differences in the stiffness of blood vessel assessed with applanation tonometry. Finally, we investigate changes in calcium score (TBR) and iron status

Protection of trial subjects:

Blood samples every second week

Background therapy: -

Evidence for comparator: -

|   |                 |
|---|-----------------|
| Actual start date of recruitment                          | 17 January 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 | Denmark: 27 |
| Worldwide total number of subjects   | 27          |
| EEA total number of subjects         | 27          |

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)                      | 15 |
| From 65 to 84 years                       | 12 |
| 85 years and over                         | 0  |

## Subject disposition

### Recruitment

Recruitment details:

Deltagerne er rekrutteret til ambulatoriet nyremedicisk Dagafsnit, holstebro Regionshospital, danmark

### Pre-assignment

Screening details:

30-80 years and CKD stage 3-5d

### Period 1

|                              |                         |
|------------------------------|-------------------------|
| Period 1 title               | Behandlingsperiode 1    |
| Is this the baseline period? | No                      |
| Allocation method            | Randomised - controlled |
| Blinding used                | Not blinded             |

### Arms

|                              |          |
|------------------------------|----------|
| Are arms mutually exclusive? | Yes      |
| <b>Arm title</b>             | Velphoro |

Arm description: -

|  |                 |
|--|-----------------|
| Arm type                               | Experimental    |
| Investigational medicinal product name | Velphoroo       |
| Investigational medicinal product code |                 |
| Other name                             |                 |
| Pharmaceutical forms                   | Chewable tablet |
| Routes of administration               | Oral use        |

Dosage and administration details:

Treatment with SO or CC aimed to reduce p-phosphate to < 1.8 mmol/L (CC up to 3600 mg/day; SO up to 3000 mg/day). However, if dose escalation did not reduce phosphate levels < 1.8 mmol/L, and the phosphate levels remained stable, further dose escalations were not performed. Treatment periods were 8 weeks however, if phosphorus level was not stable, the treatment was continued, though maximum 15 weeks. The treatment periods were separated by at minimum of a 2-week washout period. A run-in period of 2 weeks was applied if the patient already was treated with a phosphate binder.

|                  |               |
|------------------|---------------|
| <b>Arm title</b> | Unikalk basic |
|------------------|---------------|

Arm description: -

|  |                   |
|--|-------------------|
| Arm type                               | Active comparator |
| Investigational medicinal product name | Unikalk basic     |
| Investigational medicinal product code |                   |
| Other name                             |                   |
| Pharmaceutical forms                   | Tablet            |
| Routes of administration               | Oral use          |

Dosage and administration details:

Treatment with SO or CC aimed to reduce p-phosphate to < 1.8 mmol/L (CC up to 3600 mg/day; SO up to 3000 mg/day). However, if dose escalation did not reduce phosphate levels < 1.8 mmol/L, and the phosphate levels remained stable, further dose escalations were not performed. Treatment periods were 8 weeks however, if phosphorus level was not stable, the treatment was continued, though maximum 15 weeks. The treatment periods were separated by at minimum of a 2-week washout period. A run-in period of 2 weeks was applied if the patient already was treated with a phosphate binder.

| Number of subjects in period 1 | Velphoro | Unikalk basic |
|--------------------------------|----------|---------------|
| Started                        | 13       | 13            |
| Completed                      | 8        | 9             |
| Not completed                  | 5        | 4             |
| Consent withdrawn by subject   | 2        | 1             |
| Physician decision             | -        | 2             |
| Adverse event, non-fatal       | 3        | -             |
| Protocol deviation             | -        | 1             |

## Period 2

|                              |                         |
|------------------------------|-------------------------|
| Period 2 title               | Behandlingsperiode 2    |
| Is this the baseline period? | Yes <sup>[1]</sup>      |
| Allocation method            | Randomised - controlled |
| Blinding used                | Not blinded             |

## Arms

|  |                 |
|--|-----------------|
| Are arms mutually exclusive?           | Yes             |
| <b>Arm title</b>                       | Velphoro        |
| Arm description: -                     |                 |
| Arm type                               | Experimental    |
| Investigational medicinal product name | Velphoro        |
| Investigational medicinal product code |                 |
| Other name                             |                 |
| Pharmaceutical forms                   | Chewable tablet |
| Routes of administration               | Oral use        |

### Dosage and administration details:

Treatment with SO or CC aimed to reduce p-phosphate to < 1.8 mmol/L (CC up to 3600 mg/day; SO up to 3000 mg/day). However, if dose escalation did not reduce phosphate levels < 1.8 mmol/L, and the phosphate levels remained stable, further dose escalations were not performed. Treatment periods were 8 weeks however, if phosphorus level was not stable, the treatment was continued, though maximum 15 weeks. The treatment periods were separated by at minimum of a 2-week washout period. A run-in period of 2 weeks was applied if the patient already was treated with a phosphate binder.

|  |                   |
|--|-------------------|
| <b>Arm title</b>                       | unikalk           |
| Arm description: -                     |                   |
| Arm type                               | Active comparator |
| Investigational medicinal product name | Unikalk basic     |
| Investigational medicinal product code |                   |
| Other name                             |                   |
| Pharmaceutical forms                   | Tablet            |
| Routes of administration               | Oral use          |

### Dosage and administration details:

Treatment with SO or CC aimed to reduce p-phosphate to < 1.8 mmol/L (CC up to 3600 mg/day; SO up to 3000 mg/day). However, if dose escalation did not reduce phosphate levels < 1.8 mmol/L, and the phosphate levels remained stable, further dose escalations were not performed. Treatment periods were 8 weeks however, if phosphorus level was not stable, the treatment was continued, though maximum 15 weeks. The treatment periods were separated by at minimum of a 2-week washout period. A run-in period of 2 weeks was applied if the patient already was treated with a phosphate binder.

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Notes:

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

Justification: Resultaterne fra de deltagere der ikke har gennemført begge behandlingsperioder er ikke analyseret og derfor er baseline mest repræsentativt uden disse for at se om grupperne er ens

| Number of subjects in period 2 <sup>[2]</sup> | Velphoro | unikalk |
|---|----------|---------|
|   |          |         |
| Started                                       | 9        | 8       |
| Completed                                     | 7        | 7       |
| Not completed                                 | 2        | 1       |
| Consent withdrawn by subject                  | -        | 1       |
| Adverse event, non-fatal                      | 1        | -       |
| Protocol deviation                            | 1        | -       |

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Notes:

[2] - The number of subjects reported to be in the baseline period are not the same as the worldwide number enrolled in the trial. It is expected that these numbers will be the same.

Justification: En deltager bliver inkluderet men ønsker allerede inden han er randomiseret alligevel ikke deltagelse.

## Baseline characteristics

### Reporting groups

|                                |          |
|--------------------------------|----------|
| Reporting group title          | Velphoro |
| Reporting group description: - |          |
| Reporting group title          | unikalk  |
| Reporting group description: - |          |

| Reporting group values                                | Velphoro | unikalk | Total |
|---|----------|---------|-------|
| Number of subjects                                    | 9        | 8       | 17    |
| Age categorical<br>Units: Subjects                    |          |         |       |
| In utero  |          |         | 0     |
| Preterm newborn infants<br>(gestational age < 37 wks) |          |         | 0     |
| Newborns (0-27 days)                                  |          |         | 0     |
| Infants and toddlers (28 days-23<br>months)           |          |         | 0     |
| Children (2-11 years)                                 |          |         | 0     |
| Adolescents (12-17 years)                             |          |         | 0     |
| Adults (18-64 years)                                  |          |         | 0     |
| From 65-84 years                                      |          |         | 0     |
| 85 years and over                                     |          |         | 0     |
| Age continuous<br>Units: years                        |          |         |       |
| arithmetic mean                                       | 61       | 64      |       |
| standard deviation                                    | ± 4.2    | ± 8.3   | -     |
| Gender categorical<br>Units: Subjects                 |          |         |       |
| Female  | 2        | 4       | 6     |
| Male  | 7        | 4       | 11    |

## End points

### End points reporting groups

|                                |               |
|--------------------------------|---------------|
| Reporting group title          | Velphoro      |
| Reporting group description: - |               |
| Reporting group title          | Unikalk basic |
| Reporting group description: - |               |
| Reporting group title          | Velphoro      |
| Reporting group description: - |               |
| Reporting group title          | unikalk       |
| Reporting group description: - |               |

### Primary: Ki (lumbal)

|                        |                            |
|------------------------|----------------------------|
| End point title        | Ki (lumbal) <sup>[1]</sup> |
| End point description: |                            |
| End point type         | Primary                    |
| End point timeframe:   |                            |
| end of study           |                            |

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: Der er ikke valgt statistiske analyser, da data fra dette projekt er kombineret med et lignende projekt for at opnå brugbare resultater. Dette vil blive publiceret i en kommende artikel.

| End point values                     | Velphoro        | unikalk         |  |  |
|--------------------------------------|-----------------|-----------------|--|--|
| Subject group type                   | Reporting group | Reporting group |  |  |
| Number of subjects analysed          | 7               | 7               |  |  |
| Units: ml/min-1/ml-1                 |                 |                 |  |  |
| arithmetic mean (standard deviation) | 0.027 (± 0.01)  | 0.030 (± 0.01)  |  |  |

### Statistical analyses

No statistical analyses for this end point

### Secondary: osteocalcin

|                        |             |
|------------------------|-------------|
| End point title        | osteocalcin |
| End point description: |             |
| End point type         | Secondary   |
| End point timeframe:   |             |
| end of study           |             |

| End point values                     | Velphoro        | unikalk         |  |  |
|--------------------------------------|-----------------|-----------------|--|--|
| Subject group type                   | Reporting group | Reporting group |  |  |
| Number of subjects analysed          | 7               | 7               |  |  |
| Units: ug/L                          |                 |                 |  |  |
| arithmetic mean (standard deviation) | 149 (± 180)     | 134 (± 174)     |  |  |

### Statistical analyses

No statistical analyses for this end point

### Secondary: bALP

|                        |           |
|------------------------|-----------|
| End point title        | bALP      |
| End point description: |           |
| End point type         | Secondary |
| End point timeframe:   |           |
| end of study           |           |

| End point values                     | Velphoro        | unikalk         |  |  |
|--------------------------------------|-----------------|-----------------|--|--|
| Subject group type                   | Reporting group | Reporting group |  |  |
| Number of subjects analysed          | 7               | 7               |  |  |
| Units: µg/l                          |                 |                 |  |  |
| arithmetic mean (standard deviation) | 17.13 (± 6.4)   | 22.8 (± 11.4)   |  |  |

### Statistical analyses

No statistical analyses for this end point



## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Fra første scanning til 48 timer efter sidste scanning

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

### Dictionary used

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

|                    |    |
|--------------------|----|
| Dictionary version | 21 |
|--------------------|----|

### Reporting groups

|                       |          |
|-----------------------|----------|
| Reporting group title | Velphoro |
|-----------------------|----------|

Reporting group description: -

| Serious adverse events                            | Velphoro       |  |  |
|---|----------------|--|--|
| Total subjects affected by serious adverse events |                |  |  |
| subjects affected / exposed                       | 0 / 22 (0.00%) |  |  |
| number of deaths (all causes)                     | 0              |  |  |
| number of deaths resulting from adverse events    | 0              |  |  |

Frequency threshold for reporting non-serious adverse events: 1 %

| Non-serious adverse events                            | Velphoro        |  |  |
|---|-----------------|--|--|
| Total subjects affected by non-serious adverse events |                 |  |  |
| subjects affected / exposed                           | 7 / 22 (31.82%) |  |  |
| Gastrointestinal disorders                            |                 |  |  |
| kvalme, opkast, forstoppelse eller mavesmerter        |                 |  |  |
| subjects affected / exposed                           | 7 / 22 (31.82%) |  |  |
| occurrences (all)                                     | 7               |  |  |

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

Limitations of the trial such as small numbers of subjects analysed or technical problems leading to unreliable data.

|   |
|---|
| Resultaterne fra dette studie vil blive publiceret sammen med data fra et tilsvarende studie med dialysepatienter, så antallet af deltager bliver højere og studiet dermed opnår nok power. |
|---|

Notes: