Non-Interventional, Exploratory, Phase IV, Single-Blind, Cross-Sectional, Randomised, Cross-over Study Evaluating Patient Palatability and Preference of 3 Potassium Binders, Sodium Polystyrene Sulphonate (SPS) or Calcium Polystyrene Sulphonate (CPS), Sodium Zirconium Cyclosilicate (Lokelma®), and Calcium Patiromer Sorbitex (Veltassa®) in Patients with Chronic Kidney Disease and Hyperkalaemia (APPETIZE)

First published: 08/07/2020

Last updated: 11/11/2022

Study Finalised

Administrative details

EU PAS number

EUPAS36248

Study ID

49737

DARWIN EU® study

No

Study countries

- [ ] Canada
- [ ] France
- [ ] Italy
- [ ] Spain
- [ ] United States

Study description

Sodium zirconium cyclosilicate (hereafter referred to as Lokelma) has been approved in adults for effective and safe treatment of hyperkalaemia (HK), a metabolic condition characterised by elevated serum potassium (K+) levels above the normal range of 3.5–5.0 mmol/L. Patients with chronic kidney disease (CKD), diabetes, and those prescribed renin angiotensin aldosterone system inhibitor (RAASi) therapy are at an increased risk of HK due to abnormal K+ homeostasis, mainly due to impaired renal excretion. Sodium polystyrene sulphonate (SPS) or calcium polystyrene sulphonate (CPS) (hereafter referred to as S/CPS) are traditional K+ binders which are commonly prescribed but are poorly tolerated by patients due to lack of palatability and gastrointestinal (GI) constipation, leading to low adherence. Additionally, S/CPS use has been associated with serious GI adverse events (AEs, bleeding, ischemic colitis, colonic necrosis, colon perforation). Recently approved novel K+ binders, such as sodium zirconium cyclosilicate (Lokelma) and calcium patiromer sorbitex (hereafter referred to as Veltassa), are anecdotally reported to be more palatable and better tolerated in comparison to S/CPS, and provide additional

treatment options to fulfil the unmet need for treatment of HK. There is a need to generate evidence for patients and physicians (nephrologists and cardiologists) on patient palatability and patient preference for currently available K+ binders and how preference could impact the likelihood of adherence and enable long-term HK pharmacological treatment.

Study status

Finalised

Research institutions and networks

Institutions

Multiple centres: 32 centres are involved in the study

Contact details

Study institution contact

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Study contact

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Primary lead investigator

Wittbrodt Eric

Primary lead investigator

Study timelines

Date when funding contract was signed
Planned: 29/05/2020

Actual: 25/03/2020

Study start date
Planned: 31/08/2020

Actual: 23/10/2020

Data analysis start date
Planned: 03/03/2022

Actual: 03/03/2022

Date of final study report
Planned: 16/09/2022

Actual: 21/10/2022

Sources of funding

- Pharmaceutical company and other private sector

More details on funding

AstraZeneca AB

Study protocol

D9480c00016_Study Protocol_V2.0_FINAL_02 June 2020 with signature.pdf

(2.02 MB)

Regulatory

Was the study required by a regulatory body?

No

Is the study required by a Risk Management Plan (RMP)?

Not applicable

Methodological aspects

Study type

Study type list

Study topic:

Human medicinal product

Disease /health condition

Study type:

Non-interventional study

Scope of the study:

Drug utilisation

Other

If ‘other’, further details on the scope of the study

Patient taste preference

Data collection methods:

Primary data collection

Main study objective:

To compare patient-reported overall taste between Lokelma and Veltassa, and between Lokelma and S/CPS

Study Design

Non-interventional study design

Other

Non-interventional study design, other

Phase IV, exploratory, cross-over, active comparator controlled study

Study drug and medical condition

Medicinal product name

LOKELMA

VELTASSA

Anatomical Therapeutic Chemical (ATC) code

(V03AE01) polystyrene sulfonate

polystyrene sulfonate

Medical condition to be studied

Chronic kidney disease

Hyperkalaemia

Population studied

Short description of the study population

The study subjects were patients with dialysis and non-dialysis chronic kidney disease (CKD) and hyperkalaemia (HK) aged 18 years or older treated with sodium zirconium cyclosilicate (Lokelma®), calcium patiromer sorbitex (Veltassa®), sodium polystyrene sulphonate and calcium polystyrene sulphonate (CPS).

Inclusion criteria:

• Participants must be adults aged ≥18 years, at the time of signing the informed consent.

• Participants should have CKD defined by having an estimated glomerular filtration rate (eGFR) <60 mL/min/1.73 m2 (calculated using CKD-EPI equation) measured twice at least 90 days apart

• Prevalent HK with serum K+ >5 mmol/L

• Male and/or female

• Capable of giving signed informed consent as described in Appendix A which includes compliance with the requirements and restrictions listed in the informed consent form (ICF) and in this protocol. Informed consent must be obtained prior to any study-specific procedures performed.

Exclusion criteria:

• Screening serum K+ value which, in the opinion of the investigator, requires immediate medical intervention (ie, cannot wait until after tasting procedures)

• As judged by the investigator, any evidence of any condition which in the investigator's opinion makes it undesirable for the participant to participate in the study

• Known history of drug or alcohol abuse within 6 months of screening

• History of QT prolongation associated with other medications that required discontinuation of that medication, including congenital long QT syndrome

• Symptomatic or uncontrolled atrial fibrillation despite treatment, or

asymptomatic sustained ventricular tachycardia. Participants with atrial fibrillation controlled by medication are permitted

• Have a life expectancy of <6 months

• 12-lead ECG with reported QTcF >550 msec at screening

• Are current smoker

• Have mouth ulcers/mouth infection, respiratory infection, nasal congestion, or other condition, medication, or procedure which may interfere with sense of smell or taste, in opinion of the investigator

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Age groups

- Adults (18 to < 46 years)
- Adults (46 to < 65 years)
- Adults (65 to < 75 years)
- Adults (75 to < 85 years)
- Adults (85 years and over)

Special population of interest

Renal impaired

Estimated number of subjects

148

Study design details

Outcomes

To compare patient-reported overall palatability (composite of taste, texture, smell, and mouthfeel) between Lokelma and Veltassa, and between Lokelma and S/CPS in the United States (US), To compare: patient-reported overall palatability, between Lokelma & Veltassa, and between Lokelma & S/CPS,

patient-reported emotional response to overall palatability, between Lokelma & Veltassa, & between Lokelma and S/CPS. To describe and compare scoring & emotional response for how willing patients would be to take each K+ binder, describe patient-reported preference by ranking the NIMPs.

Data analysis plan

The primary endpoint is the overall Scoring (0-10) of taste. The primary analysis is to compare the scoring between Lokelma and Veltassa, and between Lokelma and S/CPS. The null hypotheses (H0) are that the oveThe primary endpoint is the overall palatability Scoring (0-40), a composite score of taste, texture, smell, and mouthfeel. The primary analysis is to compare the scoring between Lokelma and Veltassa, and between Lokelma and S/CPS in the US. AstraZeneca hypothesizes that palatability, in terms of taste, texture, smell, and mouthfeel, will score higher (better) for Lokelma, when compared with Veltassa and S/CPS. Additionally, emotional response scores (towards appeal, engagement and empowerment) will score higher (better) for Lokelma, when compared with Veltassa and S/CPS. Each objective will be analysed per country/region. In addition, the difference in results per regions and overall may be explored as outlined in the Study Objectives.

Documents

Study results

APPETIZE Abstract_04Nov2022.pdf (1.88 MB)

Data management

ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

Data sources

Data sources (types)

Other

Data sources (types), other

Prospective patient-based data collection

Use of a Common Data Model (CDM)

CDM mapping

No

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

No