Cardiovascular and Renal Treatment in Heart Failure Patients with Hyperkalemia or High Risk of Hyperkalemia: Rationale and Design of the CARE-HK in HF Registry

Supplemental Materials

Supplemental Table 1. Primary and secondary objectives.

Primary objectives	
Adherence to treatment guidelines • To describe real-world RAASi treatment patterns overall and compare with treatment guideline recommendations (ie, RAASi optimization[a]). • To describe RAASi treatment modifications[b] following episodes of HK (sK^+ >5.0 mmol/L) over a short-term and long-term period.	**Patiromer effectiveness** • To describe real-world RAASi treatment patterns in patiromer-treated patients and compare with treatment guideline recommendations (ie, RAASi optimization[a]): o Compare RAASi treatment optimization between patiromer-treated patients and untreated patients.
Secondary objectives	
Adherence to treatment guidelines • To describe rates of events of clinical interest (recurrent HK, arrhythmias, hospitalizations, mortality) by RAASi treatment optimization.[a] • To evaluate physician-provided reasons for RAASi treatment decisions (if available). • To describe changes in disease status and functional capacity (if available) overall and by RAASi treatment optimization.[a]	**Patiromer effectiveness** • To describe sK^+ values over time in patiromer-treated patients, including before and after initiation of patiromer treatment.

[a]RAASi optimization defined as optimal RAASi treatment (≥50% of guideline-recommended doses [target doses shown to be efficacious in randomized controlled trials]), suboptimal RAASi treatment (<50% of guideline-recommended doses), and not treated (no RAASi treatment prescribed).
[b]RAASi treatment modifications defined as down-titration, interruption, or discontinuation.
HK, hyperkalemia; RAASi, renin–angiotensin–aldosterone system inhibitor; sK^+, serum potassium.

Supplemental Table 2. Primary and secondary endpoints.

Primary endpoints	
Adherence to treatment guidelines • Percentage of patients by RAASi optimization[a] overall. • Percentage of patients by RAASi dose modification in response to an HK episode (down-titration, interruption, discontinuation, no change). • Percentage of patients by RAASi treatment modifications (up-titration, down-titration, interruptions, discontinuations) in response to HK episodes, and following HK episodes at short-term (30 days) and long-term (6-monthly) intervals, including by sK^+ category (>5.0, >5.5, >6.0 mmol/L) at time of episode.	**Patiromer effectiveness** • Comparison of percentage of patients with RAASi treatment optimization[a] between patiromer-treated and untreated patients (applying appropriate matching methods) following HK episodes at long-term (6-monthly) intervals. • Describe RAASi treatment patterns in patiromer-treated patients following HK episodes (sK^+ >5.0 mmol/L) at short-term (30-day) and long-term (6-monthly) intervals.
Secondary endpoints	
Adherence to treatment guidelines • Occurrence and incidence of events of clinical interest by RAASi treatment optimization,[a] including: o HK episodes (further categorized by first and recurrent episodes), o Arrhythmias requiring emergency treatment, cardiac device implantation, or any rehabilitation,	**Patiromer effectiveness** Summary of sK^+ results over time, including before and after initiation of treatment with patiromer, and by sK^+ category (>5.0, >5.5, >6.0 mmol/L) at time of HK episode.

○ Hospitalizations or equivalent outpatient visits (all-cause, HF-related, HK-related, CVD-related, CKD-related), ○ Mortality (all-cause, HF-related, CVD-related, CKD-related). • Description of physician-provided reasons (and potential combinations) for treatment decisions at initiation or modification/discontinuation of RAASi treatment (as available), including evaluation of differences between patient or prescriber characteristics, and temporal changes in reasons. • Description and change of disease status measured by patient-reported outcomes (ie, KCCQ) and functional assessment (ie, NYHA, left ventricular ejection fraction, and n-terminal pro-brain natriuretic peptide) by RAASi treatment optimization.[a]	

[a]RAASi optimization defined as optimal RAASi treatment (≥50% of guideline-recommended doses [target doses showed to be efficacious in randomized controlled trials]), suboptimal RAASi treatment (<50% of guideline recommended doses), and not treated (no RAASi treatment prescribed).

CKD, chronic kidney failure; CVD, cardiovascular disease; HF, heart failure; HK, hyperkalemia; KCCQ, Kansas City Cardiomyopathy Questionnaire; NYHA, New York Heart Association; RAASi, renin–angiotensin–aldosterone system inhibitor; sK^+, serum potassium.