



# Plasma and Urine Potassium (K<sup>+</sup>) Changes after a Single Subcutaneous (SC) Injection of a Novel Formulation of Furosemide (FUR)

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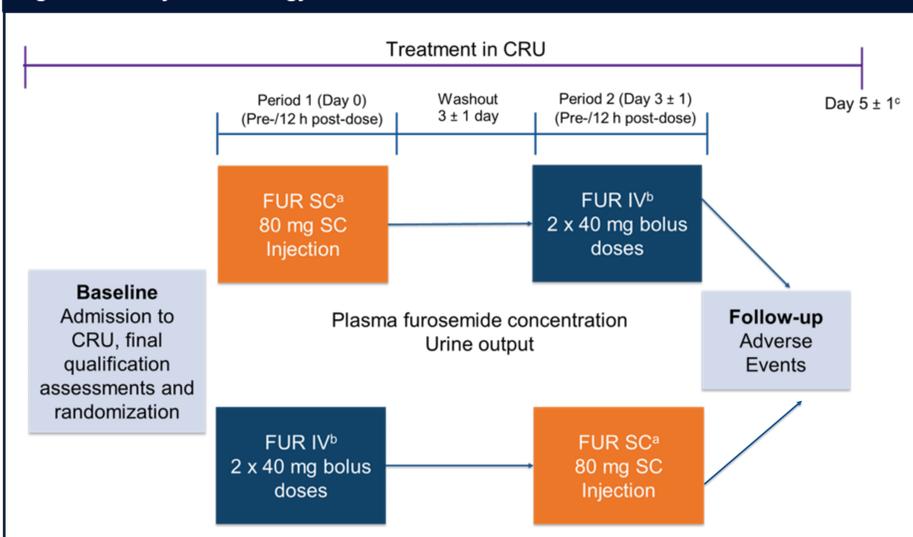
## INTRODUCTION AND OBJECTIVES

- Patients with HF and CKD are predisposed to dyskalemia due to the underlying disease process and pharmacotherapy.
- Loop diuretics inhibit reabsorption of sodium (Na<sup>+</sup>), chloride (Cl<sup>-</sup>) and K<sup>+</sup> which can result in hypokalemia.
- SCP-111 (FUR SC) is novel-formulation of FUR 80 mg/mL in development administered as 80 mg SC injection.
- FUR SC has equivalent bioavailability to furosemide IV (FUR IV) and similar UO and natriuresis<sup>1</sup>. The purpose of this analysis was to assess plasma and urinary K<sup>+</sup> after single dose of FUR SC and FUR IV.

## METHODS

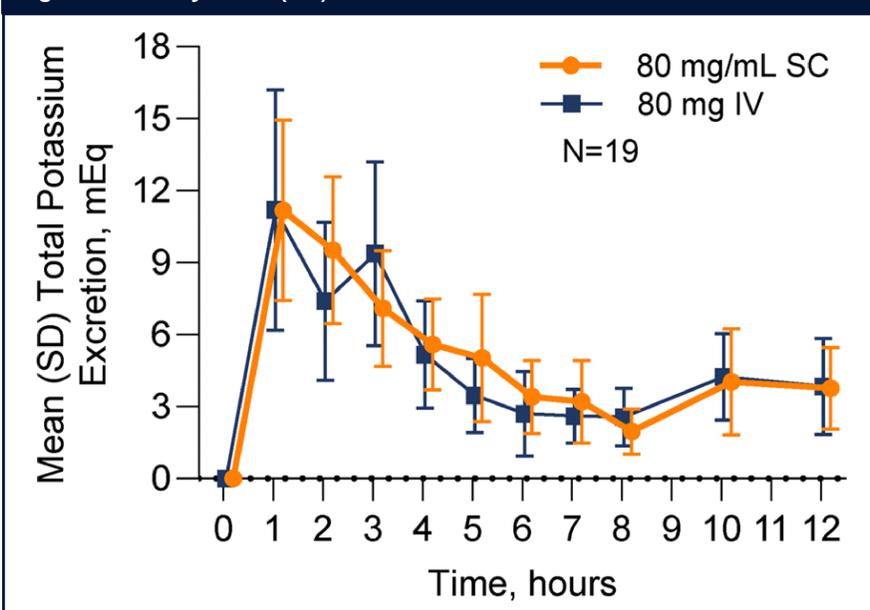
- Post-hoc analysis of open-label, single center, single dose, randomized two-way (two period) crossover study in healthy participants (Figure 1).
- Participants were excluded if baseline serum K<sup>+</sup> was  $\leq 3.0$  or  $\geq 5.5$  mEq/L, or if eGFR was  $< 30$  mL/min/1.73 m<sup>2</sup>.
- Blood was collected pre-dose and 12 hours post-dose to determine change in K<sup>+</sup> and other electrolytes. Individual changes were calculated by subtracting the 12-hour value from baseline value then was compared between IV and SC using a two-sample t-test of unequal variances.
- Urine was collected for 12 hours to determine hourly cumulative urine output (UO) and urinary Na<sup>+</sup> and K<sup>+</sup> excretion.

Figure 1. Study Methodology



<sup>a</sup> SCP-111 80 mg SC administered via an autoinjector; <sup>b</sup> Furosemide IV administered as two, 40 mg doses (over 2 minutes) 2 hours apart (80 mg total dose); <sup>c</sup> Follow-up visit should occur 24-48 hours after discharge from CRU for Crossover Period 2; CRU=clinical research unit.

Figure 2. Hourly Mean (SD) Potassium Excretion

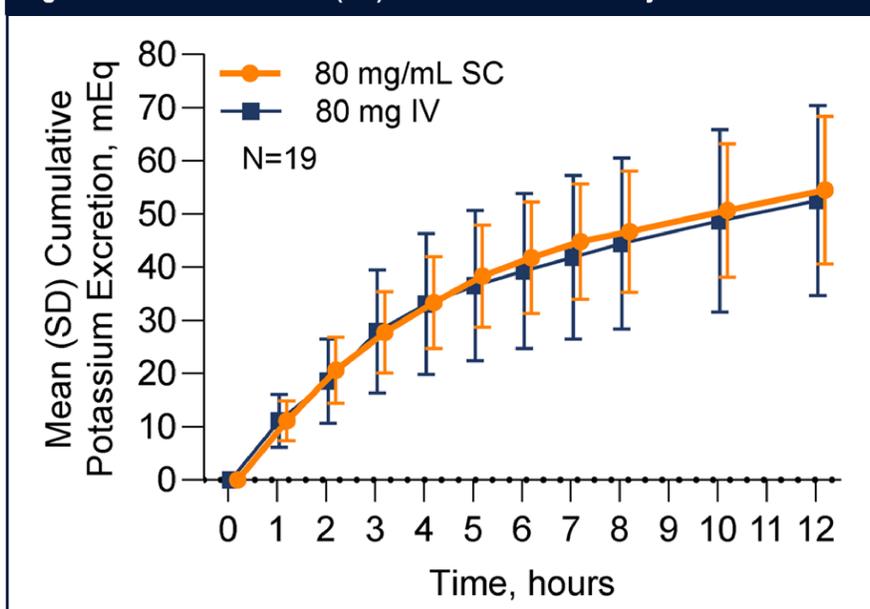


IV, intravenous; SC, subcutaneous; SD, standard deviation.

## SUMMARY AND CONCLUSIONS

*In healthy subjects who received a single dose of FUR SC and FUR IV, no statistically significant or clinically meaningful changes in plasma K<sup>+</sup> were observed, with similar K<sup>+</sup> urinary excretion*

Figure 3. Cumulative Mean (SD) Potassium Excretion by Hour

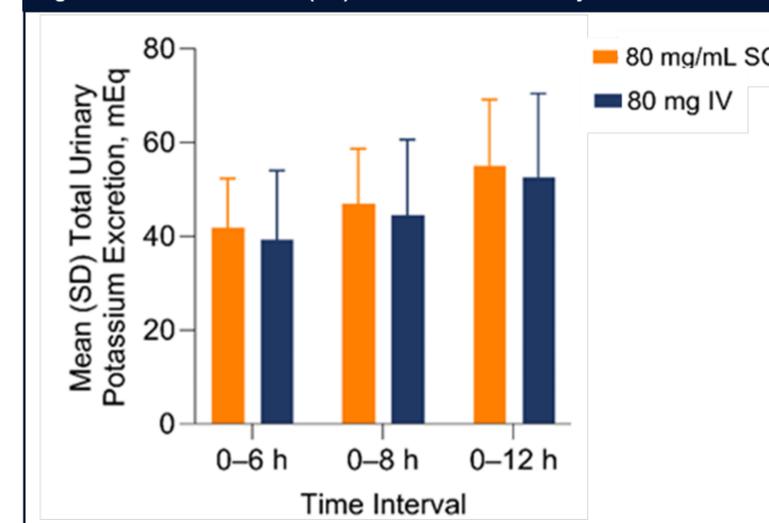


IV, intravenous; SC, subcutaneous; SD, standard deviation.

## RESULTS

- 21 subjects were randomized; 20 and 19 had samples of blood and urine for analysis, respectively.
- 71.4% female; BMI, 27.4 (19.3, 51.4) kg/m<sup>2</sup>; eGFR, 79 (56, 138) mL/min/1.73 m<sup>2</sup>
- Baseline mean (SD) plasma K<sup>+</sup> (mEq/L) was 4.18 (0.29) prior to FUR-SC and 4.04 (0.35) prior to FUR IV.
- Post-dose mean (SD) difference (FUR SC- FUR IV) in plasma K<sup>+</sup> values was -0.09 (0.52) mEq/L; [95% CI -0.32, 0.14]. Additional changes in serum chemistries and eGFR are listed in Table 1.
- Mean (SD) hourly and cumulative urine K<sup>+</sup> excretion is displayed in Figures 2 and 3 and mean (SD) cumulative urine K<sup>+</sup> potassium excretion by interval is displayed in Figure 4.

Figure 4. Cumulative Mean (SD) Potassium Excretion by Interval



IV, intravenous; SC, subcutaneous; SD, standard deviation.

Table 1. Changes in Serum Chemistries

Laboratory Value n=20	Mean (SD) difference (SC-IV)	95% Confidence Interval
Calcium (mg/dL)	0.03	(-0.23, 0.28)
Carbon Dioxide (mEq/L)	0.3	(-1.71, 2.31)
Chloride (mEq/L)	-1.15	(-3.15, 0.85)
Creatinine (mg/dL)	0.05	(-0.03, 0.13)
eGFR (mL/min/1.73 m <sup>2</sup> )	-8.3	(-21.28, 4.68)
Glucose (mg/dL)	7.20	(-8.43, 22.83)
Magnesium (mg/dL)	-0.03	(-0.1, 0.05)
<b>Potassium (mEq/L)</b>	<b>-0.09</b>	<b>(-0.32, 0.14)</b>
Sodium (mmol/L)	-0.70	(-2.53, 1.13)
Urea Nitrogen (mg/dL)	1.00	(-0.54, 2.54)