

SGLT2 INHIBITORS: SUMMARY OF RENAL TRIALS

CREDESCENCE
2019

DAPA-CKD
2020

EMPA-KIDNEY
2023

DRUG	Canagliflozin 100 mg daily	Dapagliflozin 10 mg daily	Empagliflozin 10 mg daily
# RANDOMIZED	4401 (canagliflozin, n=2202; placebo, n=2199)	4094 (dapagliflozin, n=2152; placebo, n=2152)	6609 (empagliflozin, n=3304; placebo, n=3305)
INCLUSION CRITERIA	<ul style="list-style-type: none"> Type 2 diabetes HgA1c 6.5-12% eGFR 30 to less than 90 mL/min UACR >300 to 5000 mg/g Stable ACEi/ARB therapy for ≥4 weeks 	<ul style="list-style-type: none"> eGFR 25-75 mL/min UACR 2000-5000 mg/g Stable ACEi/ARB therapy for ≥4 weeks 	<ul style="list-style-type: none"> eGFR 20 to less than 45 mL/min, or 45 to less than 90 mL/min plus UACR ≥200 mg/g Receiving a clinically appropriate dose of an ACEi or an ARB (unless not appropriate)
BASELINE CHARACTERISTICS	<ul style="list-style-type: none"> Age ~63 years; male ~66%; HgA1c ~8.5% eGFR ~56 mL/min; UACR ~927 mg/g Cardiovascular disease ~50% 	<ul style="list-style-type: none"> Age ~62 years; male ~67% Type 2 diabetes ~68% eGFR ~43 mL/min; UACR ~949 mg/g 	<ul style="list-style-type: none"> Age ~64 years; male ~67% Diabetes ~46% (primarily type 2); HgA1c ~6.3% eGFR ~37 mL/min; UACR ~223 mg/g
DURATION	Median follow-up of ~2.6 years	Median follow-up of ~2.4 years	Median follow-up of ~2.0 years
PRIMARY OUTCOME	Composite of ESRD, SCr doubling from baseline or cardiovascular/renal death	Composite of ESRD, sustained eGFR decline ≥50% from baseline or cardiovascular/renal death	Composite of ESRD, sustained eGFR decline ≥40% from baseline or cardiovascular/renal death
RESULTS	<p>Primary Composite Outcome: 245 (11.1%) vs 340 (15.5%) HR 0.70 (95% CI 0.59-0.82) p=0.00001; ARR 4.34%; NNT ~24</p>	<p>Primary Composite Outcome: 197 (9.15%) vs 312 (14.5%) HR 0.61 (95% CI 0.51-0.72) p<0.001; ARR 5.34%; NNT ~19</p>	<p>Primary Composite Outcome: 432 (13.1%) vs 558 (16.9%) HR 0.72 (95% CI 0.64-0.82) p<0.001; ARR 3.81%; NNT ~27</p>
MORBIDITY OUTCOMES	<p><u>End-Stage Renal Disease:</u> 116 (5.27%) vs 165 (7.50%) HR 0.68 (95% CI 0.54-0.86) p=0.002; ARR 2.23%; NNT ~45</p> <p><u>Sustained SCr Doubling from Baseline:</u> 118 (5.36%) vs 188 (8.55%) HR 0.60 (95% CI 0.48-0.76) p<0.001; ARR 3.19%; NNT ~32</p>	<p><u>End-Stage Renal Disease:</u> 109 (5.07%) vs 161 (7.48%) HR 0.64 (95% CI 0.50-0.82) ARR 2.42%; NNT ~42</p> <p><u>Sustained eGFR Decline ≥50%:</u> 112 (5.20%) vs 201 (9.34%) HR 0.53 (95% CI 0.42-0.67) ARR 4.14%; NNT ~25</p>	<p><u>End-Stage Renal Disease:</u> 108 (3.27%) vs 158 (4.78%) HR 0.67 (95% CI 0.52-0.85) ARR 1.51%; NNT ~67</p> <p><u>Sustained eGFR Decline ≥40%:</u> 359 (10.9%) vs 474 (14.3%) HR 0.70 (95% CI 0.61-0.81) ARR 3.48%; NNT ~29</p>
MORTALITY OUTCOMES	Cardiovascular Death: NSD Renal Death: NSD	Cardiovascular Death: NSD Renal Death: NSD	Cardiovascular Death: NSD Renal Death: NSD

These trials demonstrated clear **morbidity** benefit (e.g., reduced kidney disease progression) with SGLT2is in patients with chronic kidney disease receiving stable therapy with ACEi or ARB. Mortality benefit (reduced cardiovascular/renal death) was **not** demonstrated in these trials. Results were consistent in patients **with** and **without** diabetes in the DAPA-CKD and EMPA-KIDNEY trials. The CREDESCENCE trial only enrolled patients with type 2 diabetes.

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NSD: no significant difference