Kidney and Cardiovascular Effects of Canagliflozin According to Age and Sex
in the CREDENCE Trial

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**Background**

Canagliflozin reduces the incidence of kidney and cardiovascular events in people with type 2 diabetes and chronic kidney disease (CKD). We assessed the effects of canagliflozin according to age and sex in a randomized, placebo-controlled trial.

**Methods**

The CREDEENCE study randomized participants with type 2 diabetes and albuminuric CKD. The effects of canagliflozin on the primary outcome (a composite of kidney failure, a doubling of the serum creatinine level, or death from kidney or cardiovascular causes), and secondary outcomes were evaluated by age at baseline (<60, 60-69, and ≥70 years) and sex using Cox regression models.

**Results**

Of the 4401 participants, 33.5%, 42.1%, and 24.4% were <60, 60-69, and ≥70 years of age at baseline, respectively; 33.9% were female. Canagliflozin reduced the risk of the primary outcome (HR 0.70, 95% confidence interval 0.59 to 0.82; P <0.001) and key secondary outcomes. Effects were similar within each age group, and by sex (Figure 1A,B). The effect of canagliflozin on safety outcomes was consistent among age groups and by sex, including volume depletion, hypoglycemia and adverse events leading to drug withdrawal (all \(P_{\text{interaction}} \geq 0.1\)).

**Conclusion**

Canagliflozin reduces the risk of kidney and cardiovascular events in people with type 2 diabetes and CKD with consistent effects and no differences in safety outcomes across subgroups defined by age and sex.