

Abstract title: Population based analysis of outcomes among persons with type 2 diabetes and chronic kidney disease.

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Background: Type 2 diabetes (T2D) and chronic kidney disease (CKD) are common; characterization of patients, care patterns, and outcomes may inform opportunities to improve care. **Objectives:** Describe treatment patterns, outcomes, and health care use among persons with T2DM by KDIGO risk category and slope of eGFR. **Methods:** Using the Alberta Kidney Disease Network, T2DM and comorbidities were defined using validated algorithms; medication dispensation was identified. Outpatient eGFR and albuminuria were used to define KDIGO risk category; rate of eGFR decline at baseline was determined using a mixed model, categorized by percentile. Annual rate of kidney failure, cardiovascular, and mortality outcomes, hospitalization and health care costs were determined (2018). **Results:** Among 336,376 adults with T2DM, 25% (83,110) were moderate to very high KDIGO risk. Median eGFR slope was -0.41 mL/min/1.73m; slope was -2.31 and -4.71 in 11-25 and ≤ 10 percentile respectively. The proportion of participants with faster eGFR decline was larger with increasing KDIGO risk. SGLT2i use was $\leq 17\%$ by all KDIGO and eGFR slope categories; statin and ACEi/ARB use was 55.1 to 76.4% and increased by KDIGO risk category. Adverse clinical outcomes were greater by increasing KDIGO risk; within KDIGO category, a graded increase in the proportion of participants experiencing an adverse outcome occurred with more rapid loss of eGFR. For example, in low KDIGO risk category all cause hospitalization increases from 10.9% to 15.1%

by eGFR slope (>50 and ≤ 10 percentile respectively; costs of \$2,004 to \$2,887); this is 29.8% to 40% (\$5,636 to \$7,084) in the very high KDIGO category. **Conclusions:** Care gaps in anti-diabetes and cardiovascular medication use are identified, and impact of baseline rate of eGFR on adverse outcomes and greater health care costs is highlighted. Slope of eGFR may inform risk of adverse outcomes.

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