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ASSOCIATION BETWEEN RELATIVE ESTIMATED GLOMERULAR FILTRATION RATE CHANGES AND DAYS OUT OF THE HOME AND COST OUTCOMES IN PATIENTS WITH TYPE 2 DIABETES
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Introduction: A ≥40% relative decline in estimated glomerular filtration rate (eGFR) has been supported for use as a surrogate endpoint for clinical outcomes. However, the associations between this change and resulting days that a patient spends out of their primary ambulatory residence (e.g., during inpatient admissions and nursing facility stays) and cost outcomes are limited. The purpose of this analysis was to evaluate the associations of relative changes in eGFR with days out of the home and with cost outcomes in patients with type 2 diabetes mellitus (T2DM).

Methods: This was a retrospective cohort study conducted using administrative claims data. Patients enrolled in a Medicare Advantage Prescription Drug Plan, 65-89 years of age, with T2DM and without initial stage V chronic kidney disease (CKD) or end stage kidney disease (ESKD) were included. Patients must have had an index estimated glomerular filtration rate (eGFR) of 25-89 ml/min/1.73m² in 2008-2017 with at least one serum creatinine test result available for calculation of eGFR and a second value within 3-24 months of the index value. The primary exposure of interest was relative decline in eGFR of ≥40% in up to a 2 year period (landmark time). Baseline demographic, clinical, healthcare resource use and costs were included as variables in the models. Outcomes included days out of the home and all-cause total costs for 12 months post-landmark date. Days out of the home was modeled as a binary variable (≥7 days vs. < 7 days out of the home) using logistic regression. The cost outcome was modeled on a per patient per month (PPPM) basis using a generalized linear model with a log link. All costs were standardized to 2019 US dollars.

Results: A total of 288,170 patients were included. There were 90,990 patients with a first eGFR of 25-59 ml/min/1.73m² and 197,180 with a first eGFR of 60-89 ml/min/1.73m². Overall, 1.6% (n=4,581) of patients had a relative eGFR decline of ≥40%. There were statistically significant differences in all-cause total PPPM costs and the proportion of patients with ≥7 days out of the home in the crude and adjusted models between patients with a ≥40% relative decline as compared to those with a <40% relative eGFR decline. In the adjusted models, patients with a ≥40% relative decline had 2.23 and 1.82 higher all-cause total PPPM costs and higher odds of ≥7 days out of the home, respectively, as compared to those with a <40% relative eGFR decline. This translated to an adjusted mean 27.9% of patients with ≥7 days out of the home for those with ≥40% relative decline (difference of 12.6 percentage points). The adjusted mean PPPM cost was $1,463 for patients with a ≥40% relative decline as compared to $1,554 for patients with a <40% relative decline (difference of $1,910 PPPM). The results for the subgroups were generally similar. The adjusted days out of the home and PPPM all-cause total costs for the overall patient population and subgroups are provided in Figure 1.

Conclusions: A relative eGFR decline of ≥40% may be a valid indicator for increased healthcare resource utilization and costs. Preventing or delaying CKD progression may reduce healthcare resource utilization, thereby allowing patients more time in their homes, and lower costs to the healthcare system.

Conflict of Interest: This study was funded by Bayer AG.

POS-346
DEVELOPMENT AND TESTING OF THE EARLY-STAGE CHRONIC KIDNEY DISEASE SELF-MANAGEMENT (esCKD-SM) QUESTIONNAIRE
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Introduction: Interventions to slow chronic kidney disease (CKD) progression through improved self-management in early stage CKD are increasingly common. However, valid self-report instruments to evaluate outcomes of self-management interventions in CKD are limited. We sought to develop and conduct preliminary psychometric testing of a patient-informed questionnaire to assess early stage CKD self-management (esCKD-SM).

Methods: We developed the esCKD-SM questionnaire in three stages (Figure 1). First, potential items were identified based on existing general self-efficacy measures, self-management theories, and topics previously identified by patients as important to CKD self-management. Second, the draft questionnaire was reviewed by a Canadian expert panel (including patients, nephrologists, nurses, and researchers) using content validity index (CVI) to determine acceptance and finalize the items. Finally, we tested the questionnaire with patients using an electronic survey. We evaluated preliminary psychometric properties (internal consistency and content validity) as well as free-text responses relating to understandability, phrasing/wording, and missing topics considered important to self-management.

We are currently undertaking the fourth stage of development. Analysis will include a second round of internal consistency measurement, instrument reliability assessment (test-retest using intraclass correlation coefficient), and simultaneous administration of a previously validated generic self-efficacy instrument, the Chronic Disease Self-Efficacy Scale (CDSES), for comparison (convergent validity).

Results: We completed two rounds of expert review in February 2020. Of the 24 items retained in the final version of the questionnaire, 21 had greater than 85% acceptance (9 of which had 100% acceptance) and 3 had 75% acceptance. The items covered content relating to knowledge and confidence to engage in CKD self-management, blood pressure targets, laboratory measurements, non-prescription medications, symptoms, diet, lifestyle factors and information seeking behavior.