40.5 ml/min/1.73m^2. Diabetes (24.9%) was major cause of kidney disease followed by chronic interstitial nephritis (23.2%) and glomerulonephritis (14.7%). About 19.5 % of the subjects had CKD of unknown etiology. 27% of subjects were illiterate and 66% were rural residents. 30 % subjects were on vegetarian diet and half of cohort subjects were engaged in hazardous occupations. Median annual household income of ICKD cohort was USD 1680 with annual medical cost of USD 285. Only 32 % subject have medical insurance. Around 11% faced financial constrain for accessing healthcare. One third of female subjects had history of adverse pregnancy outcome. A majority of subjects had a history of hypertension (71%), 35.1% had diabetes, 15.5 % subjects had history of cardiovascular disease. History of alternative drug and NSAID use were reported in 22.9% and 15.6% of participants respectively. Acute kidney injury episode preceding CKD was documented in 6.68 % of the cohort subjects.

Conclusions: This is the first CKD cohort in a low/middle income country. Our cohort was younger by a decade with a considerable higher representation of males than other cohort such as GCKD, CKD-JAC and the CRIC cohorts. Prevalence of hypertension and diabetes in our cohort was 71% and 35% respectively which was lower than that of CRIC and CKD-JAC cohort. One principal distinction from other cohorts is the identification of CKD of undetermined etiology as the cause of CKD in 19.5% of our cohort. The understanding of CKD risk factors in a developing country can be availed to target cost effective screening for CKD in at risk population

No conflict of interest

POS-334

CKD PROGRESSION AND REGRESSION BY AGE: A POPULATION-BASED COHORT STUDY

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Introduction: The burden of chronic kidney disease (CKD) is expected to increase worldwide with global population aging, potentially increasing the demand for nephrology services. Understanding whether CKD inevitably progresses or may regress can inform clinical decision-making and health policy. We aimed to study both adverse and favorable kidney outcomes by age in adults with CKD.

Methods: We conducted a population-based cohort study using linked administrative and laboratory data from Alberta, Canada. We included adults with incident mild, moderate or severe CKD, defined by outpatient estimated glomerular filtration rate (eGFR) of 45-59, 30-44, or 15-29 mL/min/1.73 m^2 for >3 months, between April 1, 2009 and March 31, 2015. We excluded individuals who initiated kidney replacement or met the criteria for a more severe stage than the stage they qualified for at cohort entry. The exposure was baseline age. The outcome of interest was time to the earliest of CKD regression or progression (increase or drop in eGFR category for >3 months, accompanied by a ≥25% increase or decrease in eGFR from baseline), kidney failure (the earlier of kidney replacement initiation or eGFR <15 mL/min/1.73 m^2 for >3 months), death, or censoring (out-migration, 5 years after study entry, or March 31, 2017). We used the non-parametric Aalen-Johansen method to estimate the cumulative incidence functions of these competing events.

Results: We included 81,320 individuals with mild, 35,929 with moderate, and 12,237 with severe CKD (mean age 72.4, 77.1, and 76.6 years, respectively). The yearly incidence of CKD increased with advancing age from 180 per 100,000 population at age <65 to 7,250 at age ≥85 years. Overall, regression of CKD was as common as progression in mild (5-year probabilities 14.3% vs. 14.5%) and moderate CKD (18.9% vs. 16.2%), and as common as kidney failure in severe CKD (19.3% vs. 20.4%). In people with moderate or severe CKD, the risk of progression or kidney failure decreased with advancing age, whereas the probability of regression did not vary substantially: from 21.5 to 18.3 and 15.4% in moderate CKD, and 19.8 to 22.4 and 18.7% in severe CKD for age groups 65-74, 75-84 and ≥85 years, respectively. Regression was more common in those with low-grade albuminuria; in people with normal to moderate albuminuria, regression tended to be less likely with advancing age, and more likely in more severe stages. We observed similar probabilities of regression in analyses that excluded participants at risk for acute kidney injury associated with emergency department visits, hospitalizations, and receipt of potentially nephrotoxic procedures or medications, or focused exclusively on those with CKD which had been stable for at least 1 year.

Conclusions: With advancing age the incidence of CKD increases but CKD regression and death are more likely than CKD progression or kidney failure. Population aging may not necessarily translate into increased CKD burden for patients and health services.

No conflict of interest

POS-335

COST-EFFECTIVENESS OF DAPAGLIFLOZIN AS A TREATMENT FOR CHRONIC KIDNEY DISEASE: A HEALTH-ECONOMIC ANALYSIS OF DAPA-CKD

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Introduction: Chronic kidney disease (CKD) is a progressive condition which imposes a significant burden on patients and healthcare providers, particularly in end-stage kidney disease (ESKD) where patients may require renal replacement therapy (RRT) with either dialysis or kidney transplantation. The efficacy of dapagliflozin as a treatment for CKD when used in addition to standard therapy was assessed in a phase 3 study, Dapagliflozin and Prevention of Adverse Outcomes in Chronic Kidney Disease (DAPA-CKD). Dapagliflozin was shown to reduce the risk of CKD progression, including the incidence of ESKD, and death compared with placebo when added to standard therapy. The objective of this study was to estimate the cost-effectiveness of dapagliflozin added to standard therapy versus standard therapy alone for the treatment of CKD from a UK payer perspective.

Methods: A lifetime Markov model was built to characterise outcomes in patients with CKD, with the modelled population aligned to the baseline characteristics of DAPA-CKD. Health states were defined by CKD stage and RRT modality. Patients were at risk of CKD progression, hospitalisation for heart failure (HHF) and acute kidney injury (AKI) events. CKD progression was modelled based on transitions between CKD stages and RRT initiation observed in the DAPA-CKD trial. HHF and AKI events were modelled using negative binomial regression models, and all-cause mortality was modelled using parametric survival analysis. Adverse events of special interest collected as part of DAPA-CKD were also included. Direct healthcare costs and utility values were sourced from the published literature and DAPA-CKD, respectively. Costs and benefits were discounted at 3.5% per annum.

Results: Treatment with dapagliflozin was estimated to increase life expectancy by 1.79 years in comparison with standard therapy alone (15.69 versus 13.90), and delay CKD progression with patients spending 1.72 additional years without ESKD. Patients treated with dapagliflozin experienced fewer HHF and AKI events, with 19 and 26 events per 1,000 treated patients avoided over a lifetime horizon, respectively. Improved patient life expectancy and reduced incidence of adverse clinical outcomes in patients treated with dapagliflozin translated to additional quality adjusted life years (QALYs), with 8.72 and 7.88 QALYs gained for patients treated with dapagliflozin compared to placebo, respectively. Patients treated with dapagliflozin incurred more costs over a lifetime horizon (£77,264 versus £72,409), primarily driven by increased drug acquisition costs and increased CKD management costs in earlier CKD stages as a result of improved patient life expectancy, however reductions in costs associated with HHF, AKI and RRT provided important cost-offsets. Dapagliflozin was estimated to be cost effective in the UK at the established willingness-to-pay threshold of £20,000/QALY, with an incremental cost-effectiveness ratio of £5,817/QALY.

Conclusions: Dapagliflozin in addition to standard therapy is a cost-effective treatment for CKD in comparison with standard therapy alone in the UK, providing significant improvements in patient outcomes at an acceptable incremental cost.

Conflict of Interest: Study funded by AstraZeneca.

POS-336

THE IMPACT OF CHRONIC KIDNEY DISEASE AND CLINICAL EVENTS ON PATIENT HEALTH RELATED QUALITY OF LIFE IN DAPA-CKD

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Introduction: Chronic kidney disease (CKD) is a progressive condition characterised by declining renal function that is associated with increased risk of cardiovascular complications and death. Progressive loss of kidney function can also lead to anaemia, hyperkalaemia, increased risk of fractures and in severe cases requires renal-replacement therapy with dialysis or kidney transplantation, as such, CKD has a significant impact on patient quality of life (QoL). The DAPA-CKD clinical trial (NCT03036150) assessed the efficacy of dapagliflozin for the treatment of CKD in patients with stage 2-4 disease and albuminuria in comparison with placebo. Patient QoL, assessed through EQ-5D-5L questionnaires, was measured at baseline and subsequently every four months. The objective of this study was to estimate the impact of CKD progression and event incidence on patient QoL in the DAPA-CKD clinical trial.

Methods: A linear hierarchical multivariable regression model was developed based on pooled individual patient data from DAPA-CKD to estimate patient utility estimated from response to the EQ-5D-5L questionnaire, incorporating a subject specific random intercept. The regression model was adjusted for important patient characteristics including age, sex, comorbid type 2 diabetes (T2DM) status, CKD stage, dialysis, urinary albumin-creatine ratio (UACR), heart failure and adverse events of interest from the DAPA-CKD clinical trial. In accordance with guidance issued by the National Institute for Health and Care Excellence, utility estimates were derived based on the application of UK-specific utility tariffs after mapping EQ-5D-5L responses to EQ-5D-3L values. Utility values were converted to utility decrements, with a larger value corresponding to poorer QoL.

Results: In total, 4,170 patients contributed 20,267 EQ-5D-5L questionnaires that were included in the regression analysis, with mean patient utility at baseline of 0.757 (95% confidence interval: 0.752-0.763). More advanced CKD was associated with poorer patient QoL, particularly in those patients progressing to dialysis during follow-up, with non-dialysis dependent CKD stage 5 patients having 0.028 (0.009-0.048) lower utility on average, increasing to 0.078 (0.050-0.105) in patients receiving dialysis when compared with stage 2 CKD patients. Similarly, patients with UACR >1,000 mg/g had 0.011 (0.002-0.020) lower utility than patients with UACR ≤1,000 mg/g. Hospitalisation for heart failure (HHF) was also associated with reduced QoL, with patients having 0.088 (0.016-0.159) lower utility within one month of the initial HHF event, and 0.071 (0.042-0.101) thereafter. Age, sex and comorbid T2DM were also associated with patient utility, with older patients (utility decrement of 0.012 [0.008-0.016] per 10 years), women (utility decrement of 0.049 [0.040-0.059]) and patients with T2DM (utility decrement of 0.042 [0.032-0.052]) having poorer quality of life.

Conclusions: CKD imposes a significant burden on patient QoL, which increases as the disease progresses, measured through either decline in renal function or the presence of albuminuria. Comorbidities and complications frequently associated with CKD are also associated with a loss in health related QoL. Interventions that can delay the progression of CKD may have the potential to improve QoL and reduce the burden of CKD.

Conflict of Interest: Study funded by AstraZeneca.

POS-337

CANADIAN REAL-WORLD ASSESMENT OF TOLVAPTAN IN ADPKD: C-MAJOR STUDY AND SAFETY MONITORING AND DISTRIBUTION PROGRAM

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Introduction: Tolvaptan is the only approved treatment in Canada for slowing renal function decline and kidney enlargement in ADPKD patients. As per Health Canada requirements, a patient registry evaluating long-term clinical outcomes (the C-MAJOR study) and a hepatic safety monitoring and distribution program (the HSMDP) to mitigate the risk of liver injury were implemented and have been ongoing nationally for 5 years. The aim of this interim analysis is to describe baseline characteristics of patients at initiation of tolvaptan through the C-MAJOR study and to report on rates of treatment persistence and liver test abnormalities through the HSMDP.

Methods: C-MAJOR is a non-interventional, multi-centre study of Canadian ADPKD patients treated with tolvaptan. The HSMDP ensures tolvaptan is dispensed under controlled liver enzyme and function monitoring.

Results: As of April 2020, 398 patients, 51% female, were enrolled in C-MAJOR. At baseline, mean (SD) age was 45.1 (11.5) years, BP was 129.4 (13.4)/83.1 (10.0) mmHg and eGFR was 63.6 (27.8) mL/min/1.73 m^2. Total kidney volume was 1949 (1562) mL, 80.7% of patients had family history of ADPKD and 39.4% had family history of early end-stage renal disease. As per Mayo classification, 90.2% were at high risk of disease progression (1C-D-E). Most common ADPKD clinical manifestations were hypertension (83.2%), hepatic cysts (69.6%) and kidney pain (24.1%). Over a mean (SD) follow-up of 2.0 (1.0) years, adverse events were reported in 82.7% of patients, most common being polyuria (19.6%), fatigue (18.6%), and nocturia (15.1%).

Over a mean follow-up of 23.0 (SD = 17.6) months in the HSMDP, 2.4% (n=39) of the 1,600 patients who received at least one shipment of tolvaptan reported an elevation of transaminases >3x ULN. There were 0.3% (n=5) of patients meeting the guidelines for permanent discontinuation. No cases of drug-induced liver injury were reported. Treatment discontinuation rates at 12, 24 and 36 months were 14%, 21% and 26%, respectively.

Conclusions: This analysis provides Canadian real-world evidence of high-risk for disease progression at tolvaptan initiation, 3-y persistence data similar to phase III studies and HSMDP data showing that tolvaptan was permanently discontinued in 0.3% of patients because of hepatic effects. This abstract was also submitted for the ASN 2020 congress.

Conflict of Interest: Advisor, investigator and speaking bureau for Otsuka Pharmaceutical

POS-338

GASTRO-INTESTINAL ANGIODYSPLASIA IN PATIENTS WITH CHRONIC KIDNEY DISEASE

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Introduction: Angiodysplasia is an abnormal, dilated small blood vessel in the mucosal and submucosal layers of the gastrointestinal (GI) tract. It's responsible for approximately 6% of lower GI bleeding cases and up to 8% of upper GI bleeds. Besides, it has been reported to be associated more with some pathologies, among others, end-stage chronic kidney disease (CKD). Yet under diagnosed because of current anemia and GI bleeding in patients with CKD, which present the main symptoms of angiodysplasia.