

(79%), sitagliptin (14%), vildagliptin (7%), were continued as background therapy. About 59.35% of subjects were on glimepiride 2 mg, 21.93% subjects on glimepiride 3 mg and 18.7% on glimepiride 4 mg. The gliclazide dose was up titrated by 30 mg every 15 days to achieve a target post-prandial glucose (PPG)  $\leq 180$  mg/dL. The average dose of gliclazide MR during the study was 44 mg; approximately two-thirds of patients 61% were on 60 mg, 22% on 90mg, and 7% on 30 mg. Patients were counselled to recognize the symptoms and record the hypoglycemic episodes. The statistical analysis included the analysis of changes in glycemic control, risk of hypoglycemia & renal function parameters. The patients were followed up for 24 weeks duration. **Results:** A total 218 eligible patients (110 female & 108 male) with CKD (stages 1–3) were included. The mean age, body weight, baseline HbA1c, FPG, PPG levels, mean eGFR, and UACR (urine albumin creatinine ratio) were  $62.94 \pm 8.72$  years,  $67.9 \pm 9.33$  kg,  $8.51 \pm 0.81\%$ ,  $148.53 \pm 16.72$ ,  $202 \pm 18.45$  mg/dL,  $50.49 \pm 8.56$  ml/min/1.73 m<sup>2</sup> and  $154.34$  mg/g respectively. Gliclazide MR was initiated substituting glimepiride with appropriate dosing determined by the physician. Two subjects discontinued the therapy due to intolerability. At 24 weeks follow up, HbA1c, FPG, PPG level was reduced by -0.63, -10.33, -30.04%, respectively ( $p < 0.001$ ). There was a significant reduction in events of overall hypoglycemia (22.25%). Improvement in renal function with respect to eGFR level (+1.77 ml/min/1.73 m<sup>2</sup>) and albuminuria reduction (-45.56 mg/g) were also observed in patients. **Conclusion:** This study demonstrates the clinical effectiveness and safety of gliclazide MR with the combination of DPP-4is like linagliptin as an alternate option to glimepiride in diabetes patients with chronic kidney disease.

## Diabetes Mellitus and Glucose Metabolism

### DIABETES COMPLICATIONS AND COMORBIDITIES

#### *Clinical Practice Gap Analysis of CKD in T2D From Identification to Diagnosis to Management*

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Understanding clinical practice gaps in the identification, diagnosis and management of CKD in patients with T2D can inform development of tools to improve physician practices. A survey instrument of 25 multiple choice, knowledge- and case-based questions allowed participants to assess their knowledge, attitudes, and confidence with regard to CKD in T2D. The CME-certified activity was available online to physicians across the globe without monetary compensation or charge. Respondent confidentiality was maintained and responses were de-identified and aggregated prior to analyses. Initial data collection occurred from February 26, 2020, to April 20, 2020. 241 diabetologists/endocrinologists completed the full assessment. Physicians demonstrated gaps in the following areas: Assessment to diagnose kidney disease stage: 47% gap Evidence-based strategies to delay progression of CKD in patients with diabetes: 72% gap SGLT2 inhibitors CVOT data comparisons: 73%

gap Results from CREDENCE trial: 43% gap Mechanism of cardiorenal syndrome: 95% gap Link between diabetes, kidney disease, and the cardiorenal syndrome: 42% gap Fibrosis as a component of progression of CKD: 61% gap Knowledge of billing procedure for CKD screening: 64% gap Comparison of safety profiles for approved MRAs: 45% gap Differences in emerging MRAs compared to traditional MRAs: 53% gap Clinical trial data for emerging MRA: 32% gap When asked about satisfaction with current treatment approaches for managing CKD in patients with T2D, 9% selected very satisfied, 75% selected moderately-mostly satisfied, and 17% slightly-not satisfied. This educational research on assessment of physicians' clinical practices yielded important insights into clinical gaps related to identification, screening, diagnosis, and management of CKD in patients with T2D. Further studies are planned to assess the effect of medical education on decreasing these clinical practice gaps.

## Diabetes Mellitus and Glucose Metabolism

### DIABETES COMPLICATIONS AND COMORBIDITIES

#### *Current Utilization Trends of SGLT-2 Inhibitors in Type 2 Diabetics With Heart Failure*

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**Background:** Sodium glucose cotransporter-2 inhibitors (SGLT2 inhibitors) are a recent addition to the armamentarium for treating type 2 diabetes. Over the last couple of years, these agents have been studied in patients with cardiovascular disease, particularly heart failure. Results of the EMPA-REG (Empagliflozin Cardiovascular Outcome Event Trial in Type 2 Diabetes Mellitus Patients), CANVAS (Canagliflozin Cardiovascular Assessment Study) and DECLARE-TIMI (Dapagliflozin Effect on Cardiovascular Events-Thrombolysis in Myocardial Infarction) have clearly shown SGLT2 inhibitors to be beneficial for patients with heart failure. FDA has approved Canagliflozin and Dapagliflozin for reduction of risk of adverse cardiovascular events in patients with Type 2 Diabetes with established Cardiovascular disease. This study was conducted to determine the current utilization trends of SGLT2 inhibitors in Type 2 Diabetics admitted with congestive heart failure exacerbation at Abington Memorial Hospital. **Methods:** The study was an observational retrospective chart review of 287 patients who were admitted to the telemetry floor with an admitting diagnosis of Congestive Heart Failure with a concomitant diagnosis of Type 2 Diabetes from 06/01/2019 to 11/30/2019. 186 patients met the inclusion criteria. **Results:** Mean age of the patient population was 69 years. Mean ejection fraction was 39%. Mean A1C was 7.7. Out of 186 patients who met the inclusion criteria, 2 patients were on SGLT2 inhibitor on admission and were discharged on it. 1 patient was started on a SGLT2 inhibitor during hospitalization and was discharged on it. Out of our patient

population, only 1.6% of the patients were discharged on SGLT2 inhibitor. **Conclusion:** Even after FDA approval of SGLT-2 inhibitors in reducing heart failure hospitalizations in patients with known history of Type 2 diabetes and heart failure, the utilization of these drugs is very minimal. No other drug has been proven to improve mortality in patients of heart failure with preserved ejection fraction. Based on the results of this study, we propose that initiation of SGLT2 inhibitor should be one of the core measures during discharge of Type 2 Diabetics after a hospitalization with Heart Failure.

## Diabetes Mellitus and Glucose Metabolism

### DIABETES COMPLICATIONS AND COMORBIDITIES

#### *Detecting Frailty in Elderly Type 2 Diabetes Mellitus (T2DM) Patients in the Southeast of Brazil*

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**Introduction:** Brazil is the fifth country with the highest number of diabetes cases in the world, which has been increasing significantly over the last 35 years. In Brazil, the prevalence of diabetes in 2019 was 16.8 million people, 21.8% of whom are elderly. Diabetes potentialize geriatric syndromes, such as frailty, a state of increased vulnerability to stressors and cumulative decline in multiple physiological systems over lifespan. **Objective:** To identify frailty in elderly patients with T2DM treated in a tertiary care outpatient clinic in the southeast of Brazil and to estimate their cognition. **Methods:** This is a cross-sectional analytical study. The patients were classified according to the five Fried frailty phenotype criteria: (1) unintentional weight loss  $\geq 4.5$  kg or 5% of body weight in the previous year; (2) exhaustion assessed by self-reported fatigue, indicated by two questions on the Center for Epidemiological Studies Depression Scale; (3) weakness measured with a dynamometer in the dominant hand and adjusted according to gender and body mass index (BMI); (4) low level of physical activity measured by weekly energy expenditure in kcal (based on self-reported activities and physical exercises); (5) slowness, according to the time spent walking 4.6 meters adjusted by gender and height. In addition, we also evaluated fasting plasma glucose (FPG), glycated hemoglobin (HbA1c), BMI, calf and waist circumference. To estimate the cognition, we used the 10-point cognitive screener (10-CS) to indicate temporal orientation, category fluency and words recall. **Results:** 50 elderly patients (39 women and 11 men) with mean age of 69.8 years were evaluated. The mean FPG levels was  $168 \pm 72$  mg/dl and HbA1c  $> 7\%$  was present in 82% of them. BMI  $\geq 25$  kg/m<sup>2</sup> was observed in 40 patients (80%). All male patients have a normal calf circumference ( $> 34$  cm) and 30/39 female patients (76.9%) have a normal calf circumference ( $> 33$  cm). Waist

circumferences  $\geq 80$  cm in women and  $\geq 94$  cm in men were present in 100% of women and 90.9% of men. Frailty was observed in 34% (n=17) and cognitive impairment in 40% (n=20) of the patients, according to the five Fried frailty phenotype criteria and CS-10, respectively. **Conclusion:** Early detection of frailty is very important for considering interventions aimed at elderly people. These interventions could reduce the functional decline and the risk of disability in these individuals over time and, besides that, are able to promote a better quality of life.

## Diabetes Mellitus and Glucose Metabolism

### DIABETES COMPLICATIONS AND COMORBIDITIES

#### *Development of the University of Colorado Endocrine ECHO Program*

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**Background:** The Extension for Community Health Outcomes (ECHO) model aims to improve rural community healthcare by providing specialist-lead telementoring for primary care providers (PCPs) in a didactic and discussion-based format.<sup>1</sup> There is a notable shortage of endocrinologists in Colorado, particularly in rural and frontier counties. Best estimate is that 14 of 64 Colorado counties have at least one practicing endocrinologist. Here we describe the development and initial experience with an endocrine-specific ECHO program.

**Methods:** Grant-funding was obtained to develop a longitudinal endocrine ECHO program to support PCPs who care for a large proportion of patients with Medicaid insurance. Program development occurred with input from endocrinologists, primary care physicians, and ECHO Colorado staff. Program participation results in continuous medical education credit. PCP recruitment occurred through listserv emails sent to various Colorado-based medical organizations. Endocrinologists provided weekly hour-long sessions focused on 5 main topic domains: diabetes, obesity/lipids, thyroid disorders, reproductive and adrenal disorders, and bone/calcium disorders.

**Results:** Our endocrine ECHO program started in August 2020 and consisted of 30 weekly sessions (i.e. 9 diabetes, 8 obesity/lipids, 3 thyroid disorders, 5 reproductive and adrenal disorders, 4 bone/calcium disorders, and 1 pseudo-endocrine disorders). A total of 65 clinicians registered for the ECHO series. Sessions were designed by academic endocrinologists and fellows-in-training at the University of Colorado. During block 1 (diabetes block) there were 45 participants of which 12% practice in rural or frontier designated areas, 80% serve patients with Medicaid, and 42% primarily care for an underserved population. Matched pre/post-surveys asking about PCPs' confidence with each ECHO session were obtained and final results are currently pending completion of the full series in March 2021. Survey data will inform future iterations of this program which is slated to run annually for at least 3 years.

**Conclusion:** Access to endocrinologists is often a scarce resource for rural communities and underserved populations.