PP-D-19

POSTPARTUM DIABETES SCREENING PROGRAM TO IDENTIFY RISK FACTOR(S) AND PROGRESSION TO PREDIABETES AND TYPE 2 DIABETES MELLITUS IN PATIENTS WITH PREVIOUS GESTATIONAL DIABETES MELLITUS

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INTRODUCTION
Females with previous gestational diabetes mellitus (GDM) have a greater lifetime risk of developing type 2 diabetes. Despite the increasing knowledge and recommendations, the postpartum screening rate is still insufficient. A postpartum diabetes screening and education program was established in Siriraj Hospital to improve these missed opportunities. This study aimed to investigate the prevalence and risk factors for prediabetes and diabetes among women with previous GDM at 4-12 weeks postpartum who were followed up in this program.

METHODOLOGY
A retrospective cohort study was conducted in women with previous GDM. During the 4–12 weeks after delivery, a 75-g OGTT was performed. The subjects were categorized into normal glucose tolerance (NGT) and abnormal glucose tolerance (AGT) groups according to the American Diabetes Association criteria. Clinical and laboratory data during pregnancy and at 4-12 weeks after delivery were analyzed.

RESULTS
Between October 2020 and March 2022, 845 women with GDM were scheduled to have postpartum diabetes screening, however, 41.8% of women were lost to follow-up. 374 women with previous GDM were enrolled. 31.3% of them develop AGT, including IGT (25.9%), IFG (1.3%), IGT with IFG (1.1%), and type 2 diabetes (2.9%). Univariate analysis demonstrated that women with AGT had higher 1-hour plasma glucose (1-h PG) after a 50-gram glucose challenge test (50-g GCT) and more gestational weight gain in women with pre-pregnancy BMI >30 kg/m^2 than the NGT group. The proportion of breastfeeding was less in the AGT than NGT group. Multivariate analysis showed that higher 1-h PG after 50-g GCT was a risk factor for developing AGT (OR 1.008; 95% CI: 1.001-1.015; p = 0.036), while breastfeeding was found to be a protective factor for developing AGT (OR 0.388; 95% CI: 0.168-0.892, p = 0.026). ROC analysis revealed that 1-h PG after the 50-g GCT >160 mg/dl was predictive of postpartum abnormal glucose metabolism.

CONCLUSION
Despite, the knowledge of the potential harms of GDM, only 48% of women with previous GDM returned for postpartum diabetes screening. Of these, 31.3% of them develop prediabetes or diabetes during early postpartum screening. Women with high 1-h PG after a 50-g GCT, especially >160 mg/dL, should receive intensive strategy to make them return for follow-up visits and intensive lifestyle modification. Breastfeeding should be promoted in women with previous GDM to protect them from developing postpartum AGT. The postpartum diabetes program may enhance long-term follow-up in women with previous GDM.

KEYWORDS
gestational diabetes, postpartum diabetes, risk factors, abnormal glucose tolerance

PP-D-20

COMPARISON OF RENAL PROTECTIVE EFFECTS BETWEEN SGLT2 INHIBITORS AND DPP4 INHIBITORS IN TYPE 2 DIABETES IN REAL-WORLD CLINICAL PRACTICE

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INTRODUCTION
Recent prospective randomized studies have shown that sodium-glucose cotransporter 2 inhibitors (SGLT2i) had renal protective effects compared to placebo in patients with type 2 diabetes (T2D). In this study, we compared the renal composite outcomes between patients with T2D treated with SGLT2 inhibitors and those treated with dipeptidyl peptidase 4 inhibitors (DPP4i) using real-world clinical data.

METHODOLOGY
This retrospective observational study used the Observational Medical Outcomes Partnership Common Data Model (OMOP-CDM) database at four different university hospitals (Soonchunhyang University Hospitals in Seoul, Bucheon, Chunan, and Gumi) in Korea. The patients prescribed with SGLT2 inhibitors or DPP4 inhibitors for at least 90 days were included in the SGLT2 inhibitor or DPP4 inhibitor group, respectively. Subjects prescribed GLP-1 receptor agonists or insulin were excluded in both groups. Renal composite outcomes included a 30% decline in estimated glomerular filtration rate (eGFR) compared to baseline or creatinine doubling or dialysis or death from any cause.

RESULTS
After propensity score matching, clinical characteristics in each group at each hospital were well balanced at baseline. Our results from hospitals in Seoul, Bucheon, and Gumi have shown that SGLT2 inhibitor decreased renal composite outcomes compared to DPP4 inhibitor (hazard ratio (HR) 0.644, p = 0.020; HR 0.560, p <0.001; HR 0.657, p = 0.010, respectively). Furthermore, when all the data were combined, renal composite outcomes were significantly lower in the SGLT2 inhibitor group compared to the DPP4 inhibitor group (HR 0.659, p <0.001).

CONCLUSION
In conclusion, SGLT2 inhibitors effectively reduce renal composite outcomes compared to DPP4 inhibitors in real-world clinical practice.

KEYWORDS
SGLT2 Inhibitors, DPP4 Inhibitors, type 2 diabetes, renal composite outcomes

PP-D-21

TRANSLATING HbE1c FROM FASTING CAPILLARY BLOOD SUGAR AND HEMATOCRIT LEVEL IN SURIN HEMOGLOBIN E HOMOZYGOTE DIABETIC PATIENTS IN THAILAND

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INTRODUCTION
The major form of glycohemoglobin is hemoglobin A1c (HbA1c). The HbA1c fraction is abnormally elevated in chronic hyperglycemic diabetic patients and correlates positively with glycemic control. Previous studies suggest that hemoglobinopathies and hemolytic anemia affect the levels of HbA1c. This study aimed to determine the relationship between fasting capillary blood sugar and hematocrit on HbE1c levels in Surin hemoglobin E homozygote diabetic patients in Thailand.

METHODOLOGY
A cross-sectional study was conducted from 2009 to 2020. The population studied consisted of 93 patients (66 women and 27 men, mean age 62.9 ± 9.9 years). There were 808 blood tests. Patients who had iron deficiency anemia or anemia from chronic disease were excluded from the study. Hematologic investigations, fasting capillary blood sugar, hematocrit, and HbA1c levels were measured in all subjects. All patients were treated with either insulin, oral hypoglycemic drugs, or a physician-prescribed diet, with a laboratory investigation once a year during therapy. A model was developed to translate HbE1c (t-HbE1c) with two independent variables. The t-HbE1c was compared with capillary blood glucose measured before breakfast. A statistical analysis was carried out. Generalized mixed linear regression analysis was used for univariate and multivariate analyses. A p <0.05 was considered statistically significant.

RESULTS
In univariate linear regression analysis, t-HbE1c is associated with fasting capillary blood glucose. The model t-HbE1c equals 4.97 plus 0.012 multiplied by fasting capillary blood glucose has a p-value less than 0.001; while the model t-HbE1c equals 5.95 plus 0.036 multiplied by hematocrit, the p-value is less than 0.010 which is significant. The effect of hematocrit and fasting capillary blood glucose on t-HbE1c by multivariate regression was t-HbE1c equal to 3.92 plus 0.011 multiplied by the fasting capillary blood glucose plus 0.05 multiplied by hematocrit, and the p-value is less than 0.001 by random intercept and random slope.

CONCLUSION
With this data set, it can be concluded that, in an endemic area of hemoglobinopathy that is associated with high clinical variability, t-HbE1c levels are associated with hematocrit levels. In patients with hemoglobin E homozygotes, hematocrit levels have a highly significant effect on t-HbE1c levels. Physicians can use hematocrit levels to correct before any diagnostic or therapeutic decision is made based on t-HbE1c.

KEYWORDS
hemolytic anemia, hemoglobin E homozygote, glycated hemoglobin, HbA1c, t-HbE1c