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

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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