PP-D-22

EFFECT OF HEMATOCRIT LEVELS ON HbA1c VALUES IN THE ENDEMIC AREA OF HEMOGLOBINOPATHY

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INTRODUCTION
The utility of HbA1c may be limited due to inaccuracies in patients with hemoglobinopathy. This study aims to determine the relationship between Dtx and HbA1c levels to assess the need for control of DTx to achieve HbA1c targets in populations with hemoglobinopathy.

METHODOLOGY
This is a cross-sectional study that was conducted at Surin Hospital. All the data from 2016 to 2018 were analyzed for the association between variables that may affect HbA1c.

RESULTS
Of all the 704 patients enrolled in this study, 347 patients had negative DCIP, 204 patients had HbEA and 153 patients had HbEE. In the analysis of the relationship between Hct and HbA1c, a linear association was found. Patients with high Hct also had higher levels of HbA1c. The univariable analysis found a similar relationship between the HbEA and the control group (Y = 5.14+0.017 Dtx, R-squared = 0.1970 and Y = 4.44 + 0.020 Dtx, R-squared = 0.3288, respectively). However, the steepness of the relationship is less steep for the HbEE group at Y = 5.43 + 0.011 Dtx, R-squared = 0.1744. Furthermore, Hct was found to be weakly associated with HbA1c levels, at Y = 5.5+ 0.055 Hct and R-square = 0.0243 or 2.43%, which is highly significant at p <0.001. In addition, exploratory model multivariable analysis separating all variables to become independent found that the type of hemoglobin does not affect HbA1c. Hence, the equation derived from multivariable regression analysis is Y = 2.88 + 0.016 DTx + 0.05 Hct.

CONCLUSION
Suggesting that HbA1c levels are affected by Hct levels, in addition to Dtx. The eHbA1c is used to estimate the level of DTx for individual self-control by patients with altered blood concentrations.

KEYWORDS
hemolytic anemia, hemoglobin E homozygote, glycated hemoglobin, HbA1c, estimate HbA1c

PP-D-23

IDENTIFYING RISK FACTORS RELATED TO PROGRESSIVE KIDNEY FAILURE IN HIGH-HEMATOCRIT, NORMAL-HEMOGLOBIN DIABETES PATIENTS SEEN IN SURIN HOSPITAL IN THAILAND

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INTRODUCTION
Diabetes is now the most common cause of end-stage renal disease (ESRD). This research aims to study the rate of decline in estimated glomerular filtration rate (eGFR) and risk factors related to progressive renal failure in high-hematocrit, normal-hemoglobin diabetic patients in Surin Hospital, Thailand.

METHODOLOGY
This case-control cohort study was conducted from 2009 to 2020. The patients' general clinical information, fasting plasma glucose (FPG), HbA1c levels, hematocrit (Hct), and eGFR were collected and divided into two groups; hematocrit higher than 42% (study group) and normal hematocrit level (hematocrit 36.1-40.0%, control group). The patients with confirmed diabetes were treated either with insulin, oral hypoglycemic drugs, or a physician-prescribed diet. The target of diabetes control follows standard treatment, not intensive control. The endpoint was a rate of decline of eGFR per year. The hypothesis was that the cumulative average duration of disease was equal, and the renal complications between the two groups were not different.

RESULTS
From 2009 to 2020, there were 216 diabetic patients with 108 males (50%) included. A total of 1870 blood tests were done, 1248 (67%) in the study group and 622 (33%) in the control group. There were no significant differences concerning mean cholesterol (CHO) among the groups. The mean age and eGFR were significantly lower in the study group. The males in the study group had significantly higher mean systolic blood pressure (SBP), diastolic blood pressure (DBP), fasting plasma glucose (FPG), hemoglobin A1c (HbA1c), triglyceride (TG), high-density lipoprotein (HDL), low-density lipoprotein (LDL), serum creatinine (Cr), and duration of disease were significantly higher. The rate of decline in eGFR was significantly slower in the control group, at -0.134 ml/min/year (p <0.689) and -0.778 ml/min/year in the study group (p <0.008).