International Conference on GASTROINTESTINAL CANCER AND THERAPEUTICS 4th World Congress on DIGESTIVE & METABOLIC DISEASES 26th Annual Congress on CANCER SCIENCE AND TARGETED THERAPIES October 29-30, 2018 | San Francisco, USA

Association of glycated hemoglobin and body mass index with chronic kidney disease among type 2 diabetic patients in North-eastern Thailand

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Background: The prevalence of chronic kidney disease (CKD) amidst Thai adult type 2 diabetes mellitus (T2DM) patients is quite high. Uncontrolled DM and obesity can play a role to initiate this renal vascular complication. Glycated hemoglobin (HbA1c) a well-known valid biomarker to estimate glycemic control. However, it is not clear whether HbA1c and body mass index (BMI) with other conventional indicators can act as a reliable determinant to predict CKD.

Methods: A diabetic registry was used to collect 4042 participants from a large district hospital in the Northeast of Thailand. CKD was reported as estimated glomerular filtration rate; eGFR<60 ml/min/1.73m2. Using STATA, multiple logistic regression analysis was performed to report adjusted odds ratio.

Results: More than one-fifth of T2DM patients (887, 21.9%), were found with CKD. The majority of the participants were in the poor glycemic state (82%), and 43% of them were overweight. HbA1c was found not to be a reliable indicator for CKD. Age, hypertension, microalbuminuria, and triglyceride were considered to be the implied risk factors besides HbA1c in this study. Also, BMI is seemed to decrease in the course of developing CKD.

Conclusion: It appears to the presence or lack of generally accepted indicators for detecting CKD in T2DM patients. The lower values of HbA1c and BMI for high-risk CKD patients might be explained by the fact that CKD patients usually develop anemia and their nutritional status can declines. Both the contemporary guidelines of HbA1c and BMI need to be modified in consideration of CKD patients.

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