1,5-ANHYDRO-D-GLUCITOL PREDICTS PREVALENCE OF CORONARY ARTERY DISEASE EVEN IN NON-DIABETIC ADULTS

Poster Contributions
Hall C
Saturday, March 29, 2014, 10:00 a.m.-10:45 a.m.

Session Title: Prevention: Lipids and Risk Factors
Abstract Category: 20. Prevention: Clinical
Presentation Number: 1112-156

Authors: Nobutaka Ikeda, Hisao Hara, Yukio Hiroi, National Center for Global Health and Medicine, Tokyo, Japan

Background: Elevated hemoglobinA1c (HbA1c) level is predictive of the prevalence of coronary artery disease (CAD) and mortality. Serum 1,5-anhydro-d-glucitol (1,5-AG) levels rapidly decrease concomitantly with the excretion of glucose in urine and serum 1,5-AG is a useful clinical marker for short-term glycemic status. 1,5-AG reflects glycemic excursions more sensitively than HbA1c, especially in the postprandial state. Postprandial hyperglycemia is one of the important risk of CAD. The aim of this study is to evaluate 1,5-AG and HbA1c as the predictor of CAD in patients with and without diabetes mellitus.

Methods: The subjects were 523 consecutive patients who underwent their first coronary angiography from July 2011 to October 2013. The relationship between prevalence of CAD and 1,5-AG or HbA1c levels were evaluated. Correlation between 1,5-AG or HbA1c and CAD complexity were also assessed. CAD complexity was quantified by the SYNTAX score.

Results: The patients with CAD presented significantly lower 1,5-AG and higher HbA1c values than the patients without CAD (1,5-AG: 12.8±8.5 vs. 18.0±9.1 p<0.0001, HbA1c: 6.4±1.3 vs. 5.9±0.8 p<0.0001). Multivariable logistic regression analysis showed that both 1,5-AG and HbA1c were independent predictors for prevalence of CAD. In addition, both 1,5-AG and HbA1c significantly correlated with the SYNTAX score (ρ=-0.258 p<0.0001, ρ=0.255 p<0.0001, respectively). When the study patients were limited to non-diabetic patients (n=356), only 1,5-AG showed the independent predictive value for CAD (Odds ratio; 0.968, 95%CI 0.939-0.998, p=0.039) in a multivariable logistic regression model (sex, age, hypertension, dyslipidemia, smoking habit and renal function were adjusted).

Conclusions: Both 1,5-AG and HbA1c were the independent predictors for CAD and significantly correlated with the SYNTAX score. In non-diabetic patients, 1,5-AG level independently predicted prevalence of CAD. In contrast, HbA1c could not show predictive value for CAD. 1,5-AG may be superior to HbA1c in predicting CAD among non-diabetic population.