

## ■ S-437 ■

## Influenza vaccination coverage and its associated factors among diabetic patients in Korea

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Annual influenza vaccination is recommended for people with high-risk conditions, such as diabetes. The purpose of this study was to investigate the vaccination coverage and its associated factors among patients with diabetes in Korea. The study was based on data using the Korea National Health and Nutrition Examination Survey from 2007 to 2014. Diabetes was defined as a fasting glucose level  $\geq 126$  mg/dL, the current use of anti-diabetic medications, or a self-reported diagnosis of diabetes by physician. Finally, 25,318 subjects (subjects with diabetes: 3,560, subjects without diabetes: 21,758) aged  $\geq 40$  years who had "influenza vaccination history" were analyzed. The overall vaccination rate was higher in subjects with diabetes (55.4% vs. 41.5%,  $p$ -value  $< 0.001$ ). In middle-aged (40~64 years) subjects, vaccination rate was higher in diabetic patients (31.1% vs. 25.2%,  $p$ -value  $< 0.001$ ), whereas there was no statistical difference in elderly ( $\geq 65$  years) subjects (81.3% vs. 79.8%,  $p$ -value 0.28). After multiple logistic regression analysis, overall, increasing age (Odds ratio [OR], 1.11; 95% confidence interval [95% CI], 1.08-1.13), and regular health check-up (OR, 1.53; 95% CI, 1.11-2.11) were significant predictors of vaccination rate. In middle aged patients with diabetes, influenza vaccination rate was associated with age (OR, 1.07; 95% CI, 1.04-1.11) and medical aid or do not having national health insurance (OR, 3.24; 95% CI, 1.27-8.27). In older patients with diabetes, influenza vaccination rate was associated with health screening in 2 years (OR, 1.97; 95% CI, 1.12-3.46). In this nationally representative sample, influenza vaccination coverage was lower in middle-aged patients with diabetes, especially who had NHI. Attention and policy interventions are needed to improve the influenza vaccination coverage for these patients.

## ■ S-438 ■

## Association between triglyceride glucose index and coronary artery calcification

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Association between triglyceride glucose index and coronary artery calcification in general population **Objective:** Insulin resistance predisposes to metabolic abnormalities, which are strongly associated with coronary artery atherosclerosis. TyG index based on measuring the product of triglyceride and fasting glucose has been developed recently and calculated as a marker of insulin resistance respectively by simple and noninvasive method. However, the direct association and extent between TyG index and coronary artery calcification (CAC) has been less investigated and debated for decades. Therefore, we investigated the relationship between TyG index and CAC in health promotion center population. **Methods:** A total of 4,463 participants underwent cardiac computed tomography were enrolled from Gangnam Severance health promotion center between January 2000 and December 2015. Anthropometric profiles and multiple cardiovascular risk factors were measured. TyG index was calculated as  $\ln[\text{fasting triglycerides (mg/dl)} \times \text{fasting glucose (mg/dl)} / 2]$ . Multi-detector CT was used to measure coronary calcium score (CCS) and  $\text{CCS} > 0$  was defined as the presence of coronary calcification. **Results:** All participants were stratified into four groups by the degree of TyG index. There were significant differences in cardiovascular parameters among the groups. We observed a progressively increased prevalence of CAC in subjects with TyG index levels. Independent variables and risk factors were adjusted and TyG index was significantly associated with coronary atherosclerosis. The odds ratios for the prevalence of CAC were as follows ( $p = 0.013$ ): Q1, 1.0; Q2, 1.03 (95% CI, 0.72-1.45); Q3, 1.23 (95% CI, 0.85-1.74); Q4, 1.68 (95% CI, 1.15-2.44). **Conclusions:** There was a significant association between TyG index and prevalence of CAC. TyG index, a simple measure reflecting insulin resistance, might be useful to the indicator of atherosclerosis. TyG index is even simple to calculate and seems a useful marker of atherosclerosis, and reflect cardiovascular risk.