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Background; There have been several reports that endothelial dysfunction predicts type 2 diabetes. It is still controversial whether a coronary artery spasm (CAS) is a risk factor of new-onset diabetes mellitus (DM), especially in Asian population. Methods; We investigated the 4,231 patients (pts) that was glycerate hemoglobin level < 6.0% and fasting glucose level < 100 mg/dL (CAS group=303 and control group=3,928). CAS was defined that coronary artery was narrowed as a 70% or more in acetylcholine provocation test results. To adjust potential confounders including age, gender, hypertension, hyperlipidemia, chronic kidney disease, hyper/hypo-thyroidism, lipid profile, beta-blocker, diuretics, a propensity score matched analysis (PSM; CAS group=303 and control group=303, propensity score the difference between both groups; < 0.1) was performed using the logistic regression model. The primary end-point was the cumulative incidence of new-onset DM (glycerate hemoglobin level > 6.5% or fasting glucose level > 126 mg/dL). Also, Multivariable Cox-regression analysis adjusted by aforementioned variables was performed to determine the impact of CAS on the incidence of new-onset DM. Results; Mean follow-up duration was 908±558 days in all-pt group, and 805±579 days in PSM group. Baseline characteristics were similar between the two group in PSM data. In Kaplan-Meier curve, there was no difference between the two groups (p=0.937). Also, in cox-regression analysis performed in all pts, CAS was not associated with the increased incidence of primary end-point. Conclusions; In our study, there was no clear association with CAS and new-onset DM in a series of cardiovascular pts in Asian population.