中文題目：無症狀左心室功能異常與糖尿病之關聯性

英文題目：Asymptomatic left ventricular dysfunction in patient with or without type 2 diabetic mellitus: a population-based cohort study

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Background: Type 2 diabetes mellitus (T2DM) has been related to ventricular systolic and diastolic dysfunction, and subsequent heart failure. The study was therefore aimed to investigate the prevalence of asymptomatic left ventricular dysfunction in subjects with T2DM, and it's predisposing factors.

Method: The study population was drawn from an intramural registry of patients referred for the survey of cardiovascular diseases. Subjects, who didn't have any pre-existed cardiovascular disease, including myocardial infarction, cerebellar vascular accident, valvular heart disease, or atrial fibrillation, were enrolled in this analysis. All of the study population have undergone echocardiographic examinations. Left ventricular ejection fraction (LVEF), mitral E/A ratio, peak mitral annulus tissue velocity (e'), left atrial dimension (LAD), LV internal diameter at end diastole (LVIDd), LV internal diameter at end systole (LVIDs), interventricular septum thickness (IVS), posterior wall thickness (PW) were measured thereafter.

Asymptomatic left ventricular systolic dysfunction (aLVSD) was defined as LVEF≤40%. Asymptomatic left ventricular diastolic dysfunction (aLVDD) was defined as E/e'>15.

Patients with and without type 2 DM were matched by propensity score based on age, sex, body mass index (BMI), hypertension, use of beta-blockers, renin-angiotensin system inhibitor (RAS inhibitors), statin, and anti-platelet agents. Multivariable logistic regression analysis was used to determine the association between T2DM and asymptomatic left ventricular dysfunction with adjustment for age, sex, BMI, and hypertension.

Result: A total 11762 subjects (mean age 59.0+-12.5 years, 54.9% women, 22.5% diabetes) were included in this study. Compared with subjects without diabetes, diabetic patients were older, male dominant, have higher BMI, lower level of hemoglobin, higher level of creatinine and more patients with hypertension. After

propensity score matching, 2043 patients with type 2 DM and 2043 without type 2 DM were identified. Baseline characteristics (DM vs. non-DM), including age(62.0 vs 62.5, P = 0.133), proportion of women(52.8% vs 53.1%, P=0.875), BMI(25.0% vs 25.0%, P=0.994), hypertension(27.2% vs 25.4%, P=0.189), use of beta-blockers(34.6% vs 35.8%, P=0.394), renin-angiotensin system inhibitor (RAS inhibitors)(36.7% vs 35.2%, P=0.328), statin(23.5% .s 22.8%, P=0.604), and anti-platelet agents(15.6% vs 15.9%, P=0.762), were similar between the propensity-matching cohorts. aLVDD was more prevalent in patients with T2DM than those without (13.3% vs 19.2%, P<0.001), while the prevalence of aLVSD was similar between both group (0.6% vs 0.11%, P=0.062). T2DM was significantly associated with increased risk of aLVDD (aOR 1.642, 95% CI 1.378-1.957).

Conclusion: Left ventricular diastolic dysfunction was not unusual in asymptomatic patients with T2DM. Therefore, early screening may be considered in diabetic patients. Further rigorous studies were required to validate the result of our study.