中文題目：第二型鈉-葡萄糖轉運蛋白抑制劑對心衰竭併低血鈉病人的心血管併發症的影響

英文題目：The impacts of sodium glucose cotransporter 2 inhibitors on major adverse cardiac events in hyponatremia patients with heart failure

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Background: Sodium glucose cotransporter 2 inhibitors (SGLT2i) induces urinary glucose excretion and promotes osmotic diuresis. Hyponatremia has been found the common electrolyte disorders in patients with hyponatremia were associated with the worse prognosis. Previous studies have found that the cardiovascular benefits of SGLT2i in diabetic patients. However, whether SGLT2i is still associated with better clinical outcomes among diabetic patients with hyponatremia were still unknown. Also, the association of hyponatremia correction and cardiovascular protection remains inconclusive.

Method: The records of inpatients and outpatients with type 2 diabetes mellitus (DM) who had hyponatremia during 2016 to 2018 were retrieved from the Taipei Veteran General Hospital. We divided these patients into SGLT2i users or non-users. The underlying cardiovascular diseases, renal function, diabetes severity, and medication use were analyzed. The outcomes of interest were major adverse cardiovascular events and all-cause mortality.

Results: There were 8,280 patients with type 2 DM with hyponatremia included in the study. 7640 patients were SGLT2i non-users and 670 patients were SGLT2i users. There were no differences of gender, underlying cardiovascular diseases, HTN medication use between two groups. SGLT2i users are younger and have higher HbA1c, higher eGFR compared to SGLT2i non-users. Compared to SGLT2i non-users, SGLT2i users were associated with lower risks of all-cause mortality (Hazard ratio[HR] 0.16, 95% confidence interval [CI], 0.1-0.28), ischemic stroke (HR 0.7, 95% CI 0.53-0.94), systemic emboli (HR 0.53, 95%CI 0.32-0.88), and heart failure (HR 0.76, 95%CI 0.62-0.94).

Conclusions: Type 2 DM patients with hyponatremia who received SGLT2i, as compare to non-SGLT2i users, have lower risk of all-cause mortality, stoke, systemic emboli and heart failure.