Background: Epidemiological evidences on the association between diabetes and subsequent development of gastric cancer are controversial. This population-based retrospective cohort study investigated subsequent risk of gastric cancer for diabetic patients.

Methods: From claims data of universal health insurance of Taiwan, we identified 19625 persons aged ≥20 years newly diagnosed with diabetes during 2000-2005. A comparison group (N = 78500) frequency matched with age, sex and calendar year was randomly selected from people without diabetes. Incidence and hazard ratios (HR) of gastric cancer were ascertained during the follow-up period until 2008. We also explored associations of antidiabetic medicines with incidence of gastric cancer.

Results: During the follow-up period, 47 subjects in the diabetic group and 216 subjects in the comparison group experienced gastric cancer, with the incidence rates of 4.34 and 4.86 per 10000 person-years, respectively. During the first four years of follow-up, the incidence rate of gastric cancer was relatively low in diabetic patients (adjusted HR = 0.63, 95% CI = 0.42-0.97). However, after that time, the diabetic group had 76% (95% confidence interval (CI) = 1.06-2.91) higher risk of developing gastric cancer than the comparison group. In diabetic patients, alpha-glucosidase inhibitors was associated with significantly decreased risk of gastric cancer (adjusted HR = 0.38, 95% CI = 0.15-0.96).

Conclusions: Our findings suggested that diabetes is associated with increased risk of developing gastric cancer in subjects with diabetes after 5 years or more of follow-up.