

論 文 要 旨

**A case-control study on waterpipe tobacco smoking
and gastric cancer risk in Vietnam**

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Waterpipe tobacco (WPT) smoking is the second common form of tobacco use in Vietnam. Vietnamese waterpipe is made of bamboo, its structure and the direction for use are quite similar to one used in China. Smoking method of Vietnamese/Chinese WPT is similar to the Arabian WPT that smoke passes through water before being inhaled. Unlike the Arabian WPT, Vietnamese/Chinese WPT does not require charcoal, and each smoking session is short, less than 5 minutes. Arabian WPT smoking has been shown to cause various cancers, such as cancers of the lung, esophageal and oral cavity by several epidemiological studies; however, evidence of the association of WPT smoking with gastric cancer (GC) risk is limited. To our knowledge, no study has been conducted to examine the association between Vietnamese WPT smoking and GC risk. In the present study, we aimed to clarify the association of Vietnamese WPT smoking with GC risk among men.

A hospital-based case-control study was conducted to examine the association of WPT with GC risk among Vietnamese men, in Hanoi city, during the period of 2003-2011. Newly-diagnosed GC cases (n=454) and control patients (n=628) were matched by age (\pm 5 years) and the year of hospitalization. Information on smoking and alcohol drinking habits and diet including salty food intake and fruits/vegetables consumption was obtained by the interviews. Maximum likelihood estimates of odds ratios (ORs) and corresponding 95% confidence intervals (CIs) were obtained using conditional logistic regression models.

GC risk significantly decreased at the highest consumption group of citrus fruits (OR=0.6, 95%CI=0.4-0.8, P for trend = 0.002) although raw vegetable consumption was not associated with GC risk. Referring to never smokers, GC risk significantly increased in current WPT smokers (OR=1.8, 95%CI=1.3-2.4), and it was more evident in exclusively WPT smokers (OR=2.7, 95%CI=1.2-6.5). GC risk tended to increase with daily frequency and duration of WPT smoking but these trends were not statistically significant (P for trend: 0.144 and 0.154, respectively). GC risk of those who started smoking WPT before the age of 25 was also significantly high (OR=3.7, 95%CI=1.2-11). Neither cigarette smoking nor alcohol drinking was related to GC risk.

The present findings revealed that WPT smoking increased GC risk among Vietnamese men. The GC risk tended to increase with the daily frequency, duration, and early start of WPT smoking. To our knowledge, this is the first case-control study showing the association of Vietnamese WPT smoking with GC risk among men. Our finding supports the WHO's advisory note on health effects of WPT smoking in 2015.