

**中文題目：**檳榔合併菸酒的使用與台灣男性早發食道癌的關係

**英文題目：**Areca users in combination with tobacco and alcohol use are associated with younger age of diagnosed esophageal cancer in Taiwanese men

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**Background/Aim:** Several studies have reported the association between habitual use of substances (tobacco, alcohol, or areca nut) and the risk of esophageal squamous cell carcinoma (ESCC). However, whether the use of these substances can affect the age of ESCC presentation has rarely been examined. Since esophageal cancer in Taiwanese women only accounted for 10% of total and their etiologies may be different from those in Taiwanese men, this study focused on the analysis of men.

**Methods:** We conducted a multicenter (Kaohsiung Medical University Hospital, National Taiwan University Hospital and Kaohsiung Veterans General Hospital) hospital-based case-control study between 2000 and 2009 to answer this inquiry. The study subjects were those diagnosed of ESCC (ICD-9 150) for the first time and visited these three medical centers for help. A standardized questionnaire was used to collect comprehensive information of demographic characteristics and substance use within 1 week of cancer diagnosis. The ethics review boards at the study hospitals reviewed and approved this investigation. Written consents were obtained from all participants. Alcohol drinkers, tobacco smokers and areca chewers were defined, respectively, as subjects who had consumed any alcoholic beverage  $\geq 1$  times per week, those who had smoked  $\geq 10$  tobacco cigarettes per week and those who had chewed  $\geq 1$  areca-nut (measured as quid) per day for at least 6 months. In addition, other information such as educational levels, and clinical stages were also collected.

**Results:** Among the 668 pathology-proven ESCC male patients, we found that the mean age ( $\pm$ SD) at presentation of ESCC was 59.2 ( $\pm$ 11.3) years. All substance users, including alcohol drinkers, cigarette smokers, and areca chewers, were, on average, younger at the time of ESCC diagnosis than non-drinkers, non-smokers, and non-chewers. After adjusting for other covariates, alcohol drinkers were 3.58 years younger to have ESCC than non-drinkers ( $p = 0.002$ ). A similar result was found among areca chewers, who were 6.34 years younger to have ESCC than non-chewers ( $p < 0.0001$ ), but not among cigarette smokers ( $p = 0.10$ ). Among subjects with habitual areca use ( $n = 298$ ), subjects who started using before age 20 were, on average, younger to have ESCC than those who started after age 20 ( $p < 0.0001$ ). When compared to the group using 0-1 substances, subjects using both cigarettes and alcohol were nearly 3 years younger to contract ESCC. Furthermore, those who use areca plus another substance were 7-8 years younger. Subjects using all three substances had the greatest age difference, 9.20 years younger ( $p < 0.0001$ ), compared to the comparison group.

**Conclusion:** Since the development of ESCC is insidious and life-threatening, our observation is worthy to be reconfirmed in the large-scale and long-term follow-up prospective cohort studies to recommend the screening strategy of this disease.