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## TOBACCO AND ALCOHOL CONSUMPTION AND NASOPHARYNGEAL CARCINOMA (NPC) MORTALITY: A GUANGZHOU COHORT STUDY ON 93,672 CHINESE MALES

Jia Huang Lin[1], Ching Man Lo[1], Zhi Ming Mai[1], Chao Qiang Jiang[2], Wei Sen Zhang[2], Sai Yin Ho[1], Tai Hing Lam[1]

*[1] School of Public Health, University of Hong Kong, Hong Kong, China*
*[2] Guangzhou Occupational Disease Prevention & Treatment Center, Guangzhou, China*

Corresponding author's e-mail: kawongl@hku.hk

**Background:** Nasopharyngeal carcinoma (NPC) is rare in most of the world, but has high incidence and mortality in North Africa, Southeast Asia, especially in Guangdong, China. Smoking and drinking are well-known risk factors for head and neck cancers. However, for NPC despite over 35 years of research, epidemiologic evidence is conflicting and prospective evidence is scarce. The Guangzhou Occupational Cohort is a large prospective study conducted in an NPC high-risk region. We conducted further analysis to study the effect of smoking and drinking on NPC mortality.

**Methods:** Worker and drivers in Guangzhou were required to undergo annual medical examinations during 1980s to 1990s. From March 1988 to December 1992, information including demographic characteristics, smoking and drinking, was collected through occupational health examinations in factories or driver examination stations. Vital status and causes of death up to December 1999 were retrieved by two physicians, and verified by an epidemiologist. Subjects who reported having any diseases at baseline and those with missing information on smoking and drinking information were excluded. 93,672 male subjects included in present analysis were divided into 2 sub-cohorts (15,656 workers and 78,016 drivers) and Cox model was used to estimate relative risks (RRs) from hazard ratios.

**Results:** The mean age (SD) of subjects was 42 (6.6) years, and the mean follow-up was 7.5 years. 35 NPC deaths were observed. Smoking was associated with increased risk of NPC mortality in each of the sub-cohorts, so they were combined for analysis. Compared with never smokers, the crude RR of NPC mortality was 2.5 (95% CI 1.14-5.60, p=0.02) for daily smokers. RRs after adjusting by age, education and cohort status increased from 1.58 (95% CI 0.57-4.39, p=0.38) in smokers of less than 15 cigarettes/day to 2.33 (95% CI 1.00-5.47, p=0.05) for more than 15 cigarettes/day (p for trend=0.05). Similar trend was observed for smokers of 1 to 9 pack-years and over 10 pack-years (p for trend=0.04). For alcohol, in the worker sub-cohort, compared to never drinkers, the crude RR of daily drinkers was 4.56 (95% CI 1.34-15.60, p=0.02). After adjusting by age, education and smoking status, RR of daily drinkers was 3.67, which was marginally significant (95% CI 0.95-14.22, p=0.06). In contrast, no significant association between alcohol and NPC mortality was found in the driver sub-cohort.

**Conclusions:** This is the first large cohort study in a high-risk region which has provided prospective dose-response evidence that smoking can increase the risk of NPC mortality in men. Increased NPC mortality risk for daily drinking was found in the worker sub-cohort, but not in the driver sub-cohort. Further studies are warranted.

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