Commentary

Comment on 'Histological Subtypes of Lung Cancer in Chinese Males from 2000 to 2012'

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Mortality from lung cancer has dramatically increased in China over the past 4 decades and investigations into its attributing factors should be designated as one of the highest priorities for its prevention and control. It has been shown that different environmental carcinogens have different particular carcinogenesis pathways in humans, resulting in different kinds of cancer or its histological subtypes in various target organs. Although the distribution of lung cancer is changing in many countries, no papers on its epidemiology in China are available. In the present study, 15 427 male lung cancer patients were identified in Cancer Hospital of the Chinese Academy of Medical Sciences, Peking Union Medial Colleg (CHCAMS-PUMC). The number of lung cancer patients increased between 2000 and 2012 (Zou et al., Table 1), while the relative frequency of squamous cell carcinoma, a pathological sub-type of lung cancer, consistently decreased, especially in those born after 1961 (Zou et al, Figure 2). On the other hand, the relative frequency of adenocarcinoma, a pathological sub-type of lung cancer, dramatically increased (Zou et al., Figure 2). Adenocarcinoma has become the major histological sub-type of lung cancer in the 2011-2012 period (Zou et al., Table 3). These findings provide important information and clues for the etiology of lung cancer and this specific field needs to be further studied.

Interestingly, a high incidence of lung cancer in a tin mine of Yunnan Province was noted in the early 1970s, and studies showed that arsenic, radon, and tobacco were its etiological factors[1]. The high incidence of adenocarcinoma in females of Xunwei county was due to environmental air population. Professor GAO YT in Shanghai has explored the importance of cooking oil in the etiology of adenocarcinoma in females.

Molecular studies in recent years have showed that tumors that are candidates for *EGFR* mutation and *ALK* rearrangement testing play an important role in the management of tumor patients. Sufficient evidence in the near future will allow us to be able to recommend testing for molecular alterations in squamous cell carcinoma[2]. The latest version is at http://jco.ascopubs.org/cgi/doi /10.1200/ JCO.2012. 46.9270, which was published ahead of print on February 11, 2013 as 10.1200/JCO.2012.46.9270). Further study is needed to improve the prognosis and etiology of lung cancer.

Globally, tobacco use is the largest single preventable risk factor for lung cancer, making tobacco use a target for reducing smoking rates in various populations. This target is highlighted in the strategies for cancer control put forward by the WHO and many other countries. The prevalence of smoking has decreased from over 50% to less than 30% in men in The United States and The United Kingdom since the late half of last century[3-6]. However, the smoking rate in Chinese men was still high (52.9%) in 2010[7]. The effect of tobacco use on health is dominant, and the incidence of lung cancer and mortality as a result of lung cancer are increasing in the whole population[8-9].

The tobacco industry in China has put much effort into modifying the contents of cigarette products which are marketed as 'low-tar and low-risk', despite the lack of evidence from medical sciences[10]. It has been reported that changing the design of cigarettes over the last 5 decades, including filtered, low-tar, and 'light' variations, cannot reduce the overall disease risk in smokers and may have hindered prevention and cessation efforts[4]. No positive health effect has been observed by reducing the tar level of cigarettes or by adding filters[11-12]. The overall health of the public could be harmed if the introduction of novel tobacco products encourages tobacco use in people who

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would otherwise be unlikely to use a tobacco product or if it delays the cessation of smoking in people who would otherwise quit smoking tobacco. The incidence of lung cancer does not decrease and at the same time increases in incidences of adenocarcinoma have accompanied the changes of tobacco products in the markets[3].

Considering the epidemic of global tobacco is uncontrollable, the WHO has put forward suggestions for complete bans to counteract the effect of tobacco advertising. Promotion and sponsorship must be enforced and monitored and effective legislation must be put in place[4].

According to the tobacco atlas, estimates of revenues from the global tobacco industry are likely nearing half a trillion US dollars annually. In 2011, tobacco use killed almost 6 million people, with nearly 80% of these deaths occurring in low- and middle-income countries. Tobacco use is the number one killer in China, causing 1.2 million deaths annually, which is expected to rise to 3.5 million deaths annually by the year 2030 if no effective intervention measures are implemented. More resources should be put into activities to counter tobacco use in China.

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