Editorial

Using cancer incidence and mortality data to guide cancer control program

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Cancer prevention and control are based on the accurate date on incidence and mortality. World Health Organization recently just published a report claiming that cancer burden becomes a worldwide health problem. Due to the aging populations, in 2012, the cancer burden worldwide rose to about 14 million new cases per year; in the same period, cancer deaths are to be at over 8 million annually (1). Globally, the most commonly diagnosed cancers are those of the lung, breast, and large bowel cancers; and the most common causes of cancer death are lung, liver and stomach cancers.

This article in the current issue of Annals of Translational Medicine presented by Chinese National Central Cancer Registry, National Cancer Center in Beijing, reported of the incidence and mortality of cancer rates collected in 145 registries out of the 219 registries in China in 2010 (2). The report covers two thirds, 66% of the registry populations (about 57% rural and 43% urban). Up to present, there are a total of 250 cancer registries in China. Detailed data collection methods have been well described. Both cancer incidence and mortality data were presented by anatomic site, and gender. Additional tables were presented with all sites together for age adjusted cancer incidence and mortality rates; they were further stratified by urban/rural and by eastern/middle/western areas in China. Furthermore, all sites cancer incidence with 19 age-specific rates were shown as well.

As expected, cancer incidence was greater in urban area than in rural area; while case fatality rate was higher in the rural area. Unexpectedly, overall cancer incidence rates were similar within the three eastern/middle/western regions. One would expect that the eastern areas consists of most industrialized cities may have a higher cancer burden. China is a very huge country with over 1.35 billion people, the largest of any country in the world. There are more than 55 ethnic minority subgroups besides Han Chinese. It is unfortunate that the report did not present cancer data specific from each of these ethnic subgroups; otherwise these unique data would shed some lights on urban rural or any other differences in cancer burden in specific areas in China.

Case ascertainment by morphologically verified was reported to be 67% in China which is a concern in the modern world. As noted in cancer trends in five continents from 2003-2007 by the International Agency for Research on Cancer (IARC), China submitted data from 26 registries, but only 12 registries were accepted by the IARC strict criteria. The follow up data from China, only 14 registries got accepted. Therefore, quality control of collected data is critical which shall include comparability, completeness, validity and timeliness. In China, it requires up to 30 months to report a case to a registry which is longer than required in US with less than 24 months (2-4).

Coverage of registry population accounts for only 15% of the entire population in China. Overall, the cancer trends since 2003 were stable; the exceptions were those newly established registries since 2008. Since qualified cancer data are strictly reinforced, strategic ways to improve the data quality in those disqualified registries (over one thirds of total registries) deserve further training and quality control implementation.

Despite the limitation mentioned above, the most common cancers in China are lung, breast, gastric, liver, esophageal, colorectal and cervical cancers which are in line of those reported rates by US Chinese Americans in SEER and in California registry (3,4).

Both cancer incidence and mortality data presented in this report would provide a great resource for cancer control planning in China. Access to early detection and treatment

delays may be some hiding factors in high mortality cancer rates in China.

Cancer is still one of the leading causes of morbidity and mortality in Chinese Americans, they experience higher death and incidence rates for certain cancers such as liver, stomach, breast, lung, and colorectal. The etiology of specific cancer development is complex and multi-factorial. Chinese living in the US, their changes in cancer incidence rates are considered to be associated with both genetic and environmental interactions on DNA mutations as well as some non-genetic factors (5).

For many cancers, the best advice to reduce cancer risk are to maintain a healthy lifestyle, which includes a healthful weight, avoid tobacco and alcohol use, engage in regular physical activity, and eat at least five servings of fruits and vegetables per day; and to increase whole grains consumption as well as reduction in red meat are well justified (6). Other healthy life habits are protecting oneself from sun exposure and fostering personal and social support systems and spiritual growth. Action to control overweight and obesity and multiple strategies to promote healthy lifestyle are of great public health needs globally.

Studies have clearly shown that prolonged psychological stresses on human populations, telomere attrition and aging contribute cancer development; and telomere maintenance becomes a central biological process that plays some roles in cancer prevention and progression (7).

Other issues related to cancer control to be challenged such as stress and cancer, early life exposures, and controversies in cancer screening and treatments.

Mostly urgent in China is related to the problem of tobacco smoking on cancer mortality and overall mortality. Smoking can cause death not only from lung cancer, but also cancer of the mouth, pharynx, larynx, esophagus, stomach, pancreas, liver, kidney bladder and cervix. There is strong evidence shown early life factors influence the development of certain types of cancer, these factors may be programmed by early events and growth patterns. It also shows that people began smoking in adolescence or early adulthood are in lifelong hazards in early death (8). Tobacco control is a good example for reducing cancer risk and risk behaviors in China.

Effective implementation of vaccination program against hepatitis B may be proven their efficacy in China as well (9). Cervical cancer prevention of vaccination of human papillomavirus may also be effective in markedly reduce the incidence of this cancer in China (10).

Recent progress to translational research and its direction on cancer burdens not only in China but worldwide are justifiable for public health efforts. It is critical that the government is willing and committed to enforce and implement cancer prevention and control plans not only in China but worldwide.

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