

The dynamics of cancer burden in Asia

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Here in the present issue of the *Annals of Translational Medicine (ATM)*, we have a comprehensive report of cancer statistics from a country with the world largest population (1). The authors from the National Central Cancer Registry (NCCR), China, collected data from 219 population-based cancer registries, 145 of which met the quality standards. The population covered by the qualified cancer registries was 158 million. The estimated total number of new cancer incidence and mortality in the whole country was 3 and 2 million, respectively. The top five cancers were lung, breast, stomach, liver, and oesophagus, for incidence, and lung, liver, stomach, oesophagus, and colon/rectum, for mortality.

A striking feature of the cancer statistics in China, as contrasted to those in the USA (2), was higher incidence and mortality rate of stomach, oesophagus, and liver cancers. In China, these three cancer sites accounted for 34% of cancer incidence, and 42% of cancer mortality, whereas in USA the correspondent proportion was 4% and 8%, respectively. Japan and the Republic of Korea (Korea) are placed about halfway between China and the USA: the three cancer sites covered 20-30% of cancer incidence and mortality (3-5). Thus, China is a country which distinctly represents a traditional feature of cancer in East Asia. Interestingly, this feature was more evident for males than for females, and in rural areas than in urban area of China: the three cancer sites accounted for almost 50% of cancer incidence and mortality among males in rural area of China. Stomach and liver cancers are caused by infection of *Helicobacter pylori* and hepatitis virus, respectively. An epidemiological estimate says that chronic infection is the main risk factor for cancer in China, accounting for 29% of cancer deaths (6).

Lung cancer was the leading cancer in China for both incidence and mortality (1). This result was the same in

the world (7), and at least for mortality, similar to the statistics in the USA (2), Japan (3), and Korea (4). The epidemiological estimate cited above listed tobacco smoking as the second largest cause of cancer in China, accounting for 23% of cancer deaths. Along with lung cancer, other smoking-caused cancers (e.g., oesophageal, stomach, liver, pancreatic, and bladder cancers) were also common in China, among males in particular (1).

If China were to trace the experience of Japan and Korea in terms of the transition of cancer epidemic (4,8), the leading cancers would shift from those caused by infection to those more closely related to lifestyles. Indeed, we can see a sign of the shift in urban areas in China: the proportion of lung, colorectal and breast cancers was 39% in urban areas, higher than the figure in rural areas (31%) (1).

The report in this issue will mark an important milestone in Chinese cancer monitoring activities. As mentioned in the report (1), many challenges still exist. First, the population coverage needs to be enlarged, since there is a great geographical variation in cancer burden in China. Second, there is room for improvement in data quality, although two thirds of cancer registries that provided data met high quality standards. Third, statistics of cancer survival will be essential to have a detailed picture of the disparity of cancer burden. Finally, the cancer monitoring needs to be integrated into dynamic and comprehensive cancer control. The NCCR's enduring effort will surely address these challenges one by one, and the world will find a day when they will proudly report a reduction of cancer burden in China.

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