

# Editorial

## Lung cancer mortality

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Lung cancer is a serious public health problem in developed countries. In the USA, mortality rates decreased (from 1995 to 2003) among males (72 deaths/100,000), but they increased among females (40 deaths/100,000). These mortality rates among females, when compared to those of males, reflect the historic differences in smoking between the two genders: tobacco consumption among females peaked approximately twenty years later than it did among males.<sup>(1)</sup>

In Canada, mortality due to lung cancer has been decreasing among males since the 1980s and increasing among females since 1978. It is estimated that, in 2007, the mortality rate will be 19.9/100,000 (11 among males and 8.9 among females). These Canadian patterns show a drop in tobacco consumption, started in the 1960s (among males) and in the 1980s (among females).<sup>(2)</sup>

In a study conducted in Mexico, a decrease in the mortality due to cancer was reported (7.91/100,000 in 1989 and 5.96/100,000 in 2000), which was correlated with the *per capita* decrease in tobacco consumption from 1959 to 1982. The male/female ratio was 2.4:1, and the highest mortality rate was among 70- to 74-year-old males, as well as among females older than 75 years.<sup>(3)</sup>

Among European males, there are three patterns regarding mortality due to lung cancer. The first pattern, found in Finland and the United Kingdom, shows a steady decline (46/100,000 and 54/100,000, respectively, in 2005). In the United Kingdom, the mortality rate due to lung cancer among males decreased in all age brackets. Among females, the mortality rates varied from 18/100,000 in 1971 to 30/100,000 in 2005. Within this period, the male/female ratio decreased from 6:1 to 7:4. Among females, rates decreased in the 55 to 64-year age bracket (since the 1980s) and in the 65 to 74-year age bracket (since the 1990s). Mortality has remained stable in the 45 to 54-year age bracket since the 1980s and increased among females older than 75 years for the past 30 years.<sup>(4)</sup>

The second pattern is found in Central and Northern Europe and has disparate absolute values. Mortality is low and reveals a slight increase in Norway (30/100,000), whereas it is low and steady in Sweden (24/100,000).

Finally, there is a third pattern, found in Portugal, Spain, Greece and Eastern Europe, showing an increase in mortality. In the 1990s, mortality was 84/100,000 in Hungary and 71/100,000 in Poland.<sup>(5)</sup> The mortality in these two countries is still increasing and is currently the highest in Europe.<sup>(4)</sup> The mortality due to lung cancer among European females is increasing, but it is still relatively low – below 10/100,000 – except in Hungary, the United Kingdom, Denmark and Ireland (20–25/100,000 in all age brackets).<sup>(5,6)</sup>

In Japan, the number of deaths due to lung cancer will double in the next three decades. Projections for 2009 are approximately 52 deaths/100,000 males and 19 deaths/100,000 females.<sup>(7)</sup>

In China, 327,643 deaths due to lung cancer were estimated in 2000 and 428,936 in 2005. This increase in the mortality was found in all age brackets and especially in rural areas.<sup>(8)</sup>

In New Zealand, from 1981 to 1999, there was a decrease in the mortality among males, principally among those of higher income and educational level. However, mortality is higher in males than in females. Mortality in females increased considerably among low-income females (from 27 to 46/100,000) and remained constant among those with higher income.<sup>(9)</sup>

In this issue, we publish two articles on mortality trends due to lung cancer in Brazil. The authors Malta et al. (Brazilian National Ministry of Health, Department of Health Oversight) and Boing et al. (Department of Public Health of the Federal University of Santa Catarina) used the National Ministry of Health Mortality Database.

The collected data revealed that, among males, there was a modest increase in the mortality rate: from 10.64 deaths/100,000 in 1979 to 13.07 deaths/100,000 in 2004. Among females, there was a greater increase: from 3.04 deaths/100,000 in 1979 to 5.37 deaths/100,000 in 2004. The male/female ratio, which was 3.3:1 in 1979, was 2:1 in 2004. Mortality rates were higher among males in all age brackets and increased, in both genders, with advancing age. A decrease in the mortality rate among males from 30 to 69 years of age was also detected. However, among males older than 70 years and among females older than 30 years, there is a trend toward an increase. The

highest mortality rates were found in the south and southeast. The actual increase in the rates occurred in both genders and in all regions, except in the male population in the southeast, which showed stable mortality rates during this period. It is possible that a part of the increase in the mortality seen during the 1979–2004 period and the incidence of various magnitudes of the disease in the five regions of the country were due to improvements in the data sources and to regional differences in the quality of these data.

The pattern found in mortality due to lung cancer in Brazil is similar to that found in Portugal, Spain, Greece, Eastern Europe, Japan and China.

In conclusion, the epidemiologic study on health-related events – for example, mortality due to lung cancer – allows programs for control, prevention and health care to be improved. The future mortality due to lung cancer depends on the current awareness of young people regarding risk factors, which is the main objective of antismoking campaigns.

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