

Continuing declines in cancer mortality in the European Union

F. Levi^{1*}, F. Lucchini¹, E. Negri² & C. La Vecchia^{1,2,3}

¹Cancer Epidemiology Unit and Cancer Registries of Vaud and Neuchâtel, Institut universitaire de médecine sociale et préventive, CHUV-Falaises 1, 1011 Lausanne, Switzerland; ²Laboratory of Epidemiology, Istituto di Ricerche Farmacologiche 'Mario Negri', Via Eritrea 62, 20157; ³Istituto di Statistica Medica e Biometria, Università degli Studi di Milano, Via Venezian 1, 20133 Milano, Italy

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Background: From 1988 to 1997 age-standardised total cancer mortality rates in the European Union (EU) fell by around 9% in both sexes. Available cancer mortality data in Europe up to 2002 allow a first check of the forecast of further declines in cancer mortality.

Patients and methods: We considered trends in age-standardised mortality from major cancer sites in the EU during the period 1980–2002.

Results: For men, total cancer mortality, after a peak of 191.1/100 000 in 1987 declined to 177.8 in 1997 (–7%), and to 166.5 in 2002. Corresponding figures for females were 107.9/100 000, 100.5 and 95.2, corresponding to falls of 7% from 1987 to 1997, and to 5% from 1997 to 2002. Over the last 5 years, lung cancer declined by 1.9% per year in men, to reach 44.4/100 000, but increased by 1.7% in women, to reach 11.4. In 2002, for the first year, lung cancer mortality in women was higher than that for intestinal cancer (11.1/100 000), and lung cancer became the second site of cancer deaths in women after breast (17.9/100 000). From 1997 to 2002, appreciable declines were observed in mortality from intestinal cancer in men (–1.6% per year, to reach 18.8/100 000), and in women (–2.5%), as well as for breast (–1.7% per year) and prostate cancer (–1.4%).

Conclusions: Despite the persisting rises in female lung cancer, the recent trends in cancer mortality in the EU are encouraging and indicate that an 11% reduction in total cancer mortality from 2000 to 2015 is realistic and possible.

Key words: cancer, Europe, mortality, time trends

introduction

Cancer mortality in the European Union (EU), as in North America, has peaked in the late 1980s [1, 2]. From 1988 to 1997 age-standardised total cancer mortality rates fell by 9.3% in men and 8.8% in women. This corresponded to the avoidance of ~80 000 deaths per year in the late 1990s in the 15 countries of the former EU, as compared with cancer mortality in the late 1980s [2].

On the basis of the recent trends in cancer mortality in the 25 countries of the EU, a forecast was proposed for cancer mortality in 2015 of a further fall by 11% in cancer deaths from 2000 to 2015, corresponding to >150 000 fewer deaths per year in 2015 as compared with the rates of 2000 [3].

Data have now been made available for cancer mortality in Europe up to 2002, allowing a first check of the forecast of further declines in cancer mortality.

patients and methods

We obtained official death certification numbers and population estimates for 24 countries of the EU, except Cyprus, from the World Health

Organization database during the period 1980–2002. We recoded all cancer deaths according to the 10th Revision of the International Classification of Diseases, and pooled together all intestinal sites, including rectum, and all uterine cancers (cervix and endometrium). From the matrices of certified deaths and resident populations we computed age-specific rates for each 5-year age group and calendar period, as well as age-standardised rates on the world standard population.

results

Table 1 gives overall age-standardised mortality from all cancers, lung, intestinal, breast and prostate cancers during the period 1980–2002, and the annual percent change in rate between the peak of 1985–1989 and 1997, and in the subsequent period 1997–2002.

In men, total cancer mortality declined by 7% from 191.1/100 000 around 1987 to 177.8/100 000 around 1997, and by a further 6% to 166.5 in 2002. Corresponding figures for females were 107.9/100 000, 100.5 and 95.2/100 000, corresponding to falls of 7% from 1987 to 1997, and of 5% from 1997 to 2002. Lung cancer in men declined from 55.0/100 000 around 1987 to 49.2 around 1997 (–11%), and to 44.4 (–10%) in 2002. In women, lung cancer mortality was 9.1/100 000 around 1987, 10.6/100 000 (+16%) around 1997 and 11.4 (+8%)

*Correspondence to: Prof F. Levi, Registres Vaudois des Tumeurs Institut Universitaire de Médecine - Sociale et Préventive CHUV-Falaises 1, Casier 15 Lausanne 1011, Switzerland. Tel: +41-21-3147311; Fax: +41-21-323-03-03; E-mail: fabio.levi@chuv.ch

in 2002. Intestinal cancer declined by 10% in women from 1987 to 1997, and by 6% in men and 12% in women from 1997 to 2002. Breast cancer mortality declined from 21.5/100 000 around 1987 to 19.8 around 1997 (−8%) to 17.9/100 000 (−10%) in 2002. Prostate cancer was approximately stable until

the early 1990s, but declined from 15.3 around 1992 to 13.9 (−9%) in 2002.

Figure 1 gives trends in mortality from the eight major cancer sites in EU men and women during the period 1980–2002. Besides the trends previously described, steady persistent falls

Table 1. Age-standardised mortality rates per 100 000 (world standard population) from all cancers, lung, intestinal, breast and prostate cancers by gender in the European Union, 1982–2002

Year	All cancers		Lung		Intestines		Breast	Prostate
	Males	Females	Males	Females	Males	Females	Females	Males
1982 ^a	187.0	108.3	53.2	8.1	19.7	14.3	20.7	13.8
1987 ^a	191.1	107.9	55.0	9.1	20.2	14.0	21.5	14.9
1992 ^a	187.8	105.5	53.4	9.9	20.5	13.5	21.2	15.3
1997 ^a	177.8	100.5	49.2	10.6	20.1	12.6	19.8	15.1
2002	166.5	95.2	44.4	11.4	18.8	11.1	17.9	13.9
Change in rate, 1987–1997								
Absolute	−13.3	−7.4	−5.8	+1.5	−0.1	−1.4	−0.7	+0.2
Percent	−7.0	−6.9	−10.5	+16.5	−0.5	−10.0	−7.9	+1.3
Annual % ^b	−0.78	−0.74	−1.16	+1.36	−0.15	−1.08	−0.80	+0.14
Change in rate, 1997–2002								
Absolute	−11.3	−5.3	−4.8	+0.8	−1.3	−1.5	−1.9	−1.2
Percent	−6.4	−5.3	−9.8	+7.5	−6.5	−11.9	−9.6	−7.9
Annual % ^b	−1.22	−1.04	−1.91	+1.65	−1.60	−2.52	−1.72	−1.41

^aAverage annual rate in quinquennial periods 1980–1984, 1985–1989, 1990–1994 and 1995–1999.

^bFrom a log-linear model based on single calendar year rates.

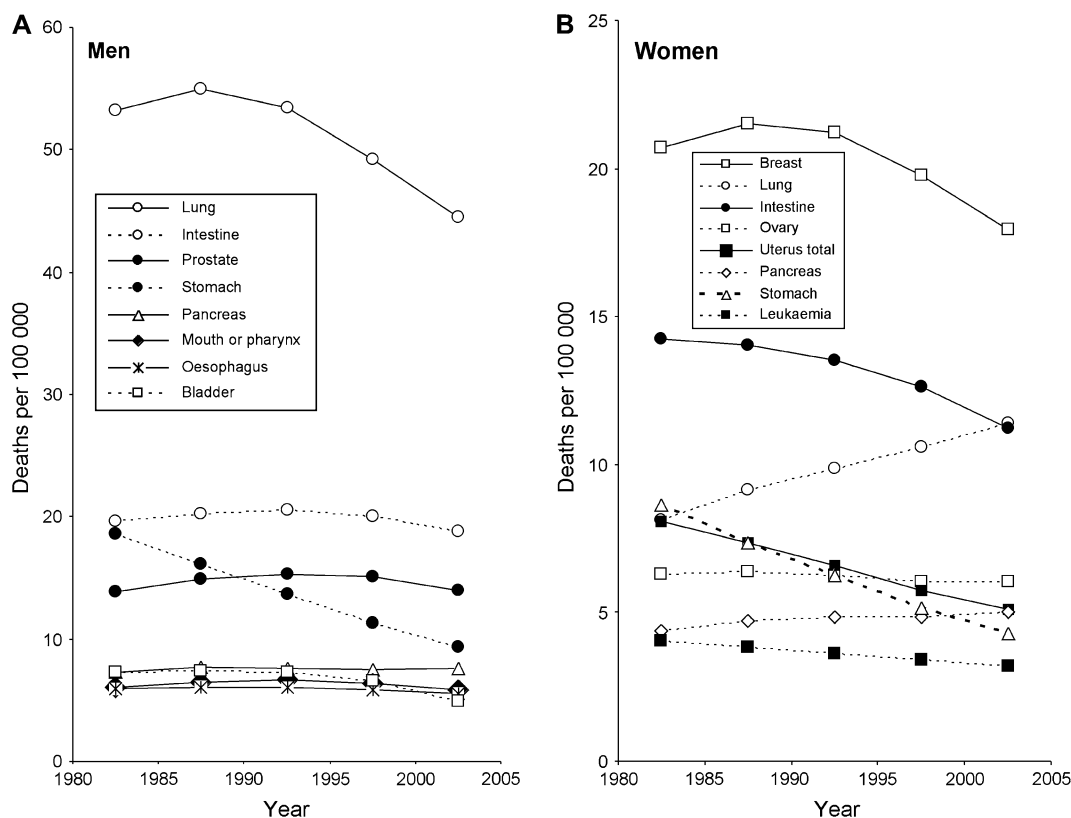


Figure 1. A and B. Trends in age-standardised (per 100 000, world population) mortality rates for cancers by sex in the 25 countries (except Cyprus) of the European Union, 1980–2002. Countries are: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

were observed for stomach cancer in both sexes, although stomach cancer is still the fifth cause of death in both sexes combined in the EU, as well as uterine (cervix) in women. Moderate declines were observed over recent years for leukaemias in both sexes, oral cavity, pharynx and oesophagus in men and ovary in women. The only major site showing persisting rise over the last two decades was lung cancer in women whose rate in 2002 (11.4/100 000) was for the first year higher than that for intestinal cancer (11.1/100 000). Thus, lung cancer is now the second site of cancer deaths in European women following breast (17.9/100 000), and the annual rate of increase has been larger over the last 5 years (+1.85%) as compared with the previous decade (+1.36%).

discussion

Despite the persisting rises in female lung cancer due to spread of tobacco smoking among European women after the second World War, and mainly since the early 1970s [4, 5], the recent trends in cancer mortality in the EU remain favourable, with a >5% fall in both sexes over the last 5 years. In men, about 40% of the decline is due to lung cancer alone, and at least an additional 10% to other tobacco-related cancers, following the decreased prevalence of tobacco smoking in European men over the last decades [4]. About 15% of the fall is still due to the persisting decline of gastric cancer, and other relevant contributions are due to recent falls in colorectal and prostate cancers.

In women, the largest contributions to the fall in cancer mortality are due to breast and colorectum, indicating that the advancements are largely attributable to improved diagnosis, and mostly treatment of breast cancer [6–8].

The most recent trends in cancer mortality in Europe are thus encouraging and indicate that the forecast of ~11% reduction in cancer mortality from 2000 to 2015 is realistic and possible. In fact, a linear extrapolation of a fall by 1.13% per year would correspond to a 16% decrease over a 15-year period. In terms of total numbers of cancer deaths, this would correspond to 1.2 million deaths in 2015 in the EU, as compared with about 1.1 million in 2002, and to 1.4 million in 2015 in the absence of continuing falls in rates.

Further control of tobacco, and consequently of tobacco-related cancer mortality, remains a priority not only for men but also for women. Widespread and uniform adoption across Europe of advanced screening diagnostic and therapeutic approaches is also urgent to reduce the burden of cancer mortality in the EU [9, 10].

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