

Trends in incidence of small cell lung cancer and all lung cancers

NCIN Data Briefing

Background

The incidence of small cell lung cancer (SCLC) is often quoted as around 20% of all lung cancers and its incidence is reportedly decreasing over time. It is the form of lung cancer most strongly related to tobacco smoking.

Aim

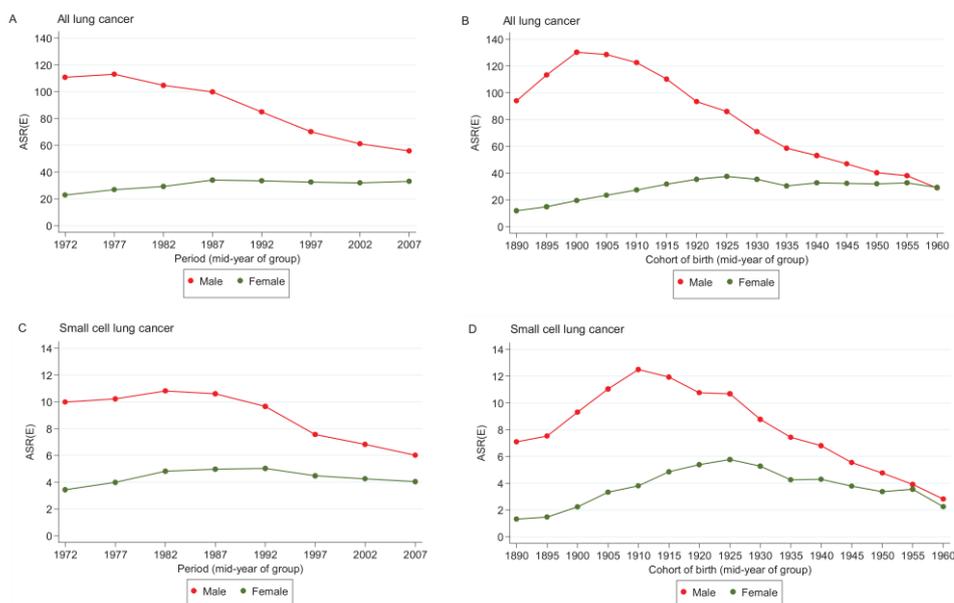
We analysed the trends in incidence of SCLC and compared these with the trends in all lung cancer overall among males and females in South East England between 1970 and 2007.

Results

Incidence rates of SCLC and all lung cancer were higher in males than females (Figure 1). Among males, the incidence rates of lung cancer declined from 1972. In contrast, the incidence rates of lung cancer among females steadily increased from 1972 and appeared to remain stable from 1987 onwards. There was a decrease of SCLC incidence over time. This decrease was more rapid in the most recent years.

Overall, SCLC proportions in males increased from 9% in 1972 to 10% in 2007 (Table 1). In contrast, the proportion of females with SCLC decreased from 13% in 1972 to 11% in 2007 (Table 2). However, a large proportion of lung cancers were histologically unspecified. When we limited our analysis to lung cancer with specified histology only, we found the proportion of SCLC to decline in both males (21% in 1972 to 15% in 2007) and females (32% in 1972 to 17% in 2007).

Figure 1. Age-standardised incidence rates of all lung cancer (A and B) and SCLC (C and D) by calendar period (A and C) and birth cohort (B and D).



KEY MESSAGE:

SCLC incidence trends are similar to those in all lung cancer. However, the decrease in the incidence of SCLC is slightly more pronounced.

This decline probably reflects the reduction in smoking rates over the study period.

Table 1. Histology of lung cancer among male patients by calendar period, Thames Cancer Registry, 1970-2007

Period	Small cell			Non small cell			Other specified			Unspecified		Total Number
	Number	(%a)	(%b)	Number	(%a)	(%b)	Number	(%a)	(%b)	Number	(%a)	
1972	1703	9.0	20.7	6465	34.2	78.5	69	0.4	0.8	10655	56.4	18892
1977	1754	9.0	19.8	7007	35.9	79.3	88	0.5	1.0	10676	54.7	19525
1982	1894	10.0	19.7	7609	40.3	79.2	107	0.6	1.1	9260	49.1	18870
1987	2956	10.3	20.4	11440	39.7	78.9	105	0.4	0.7	14276	49.6	28777
1992	2643	10.8	20.2	10331	42.3	79.1	103	0.4	0.8	11341	46.4	24418
1997	2104	10.3	18.2	9323	45.6	80.7	127	0.6	1.1	8914	43.6	20468
2002	1964	10.7	16.0	10074	54.9	82.4	201	1.1	1.6	6119	33.3	18358
2007 ^c	1068	10.2	14.9	5964	56.7	83.1	147	1.4	2.0	3333	31.7	10512

a Percentage of total number of lung cancers

b Percentage of total number of specified lung cancers with defined histology

c Period 2005-2007

Table 2. Histology of lung cancer among female patients by calendar period, Thames Cancer Registry, 1970-2007

Period	Small cell			Non-small cell			Other specified			Unspecified		Total Number
	Number	(%a)	(%b)	Number	(%a)	(%b)	Number	(%a)	(%b)	Number	(%a)	
1972	723	13.4	32.0	1496	27.8	66.3	38	0.7	1.7	3126	58.1	5383
1977	844	13.2	30.8	1868	29.3	68.1	31	0.5	1.1	3637	57.0	6380
1982	1064	14.6	30.0	2423	33.3	68.3	64	0.9	1.8	3725	51.2	7276
1987	1688	12.7	26.8	4530	34.1	71.9	86	0.6	1.4	6987	52.6	13291
1992	1686	13.0	25.7	4773	36.8	72.8	92	0.7	1.4	6397	49.4	12948
1997	1514	12.0	22.8	4996	39.7	75.4	116	0.9	1.8	5946	47.3	12572
2002	1475	12.0	18.9	6131	49.6	78.8	185	1.5	2.4	4552	36.9	12343
2007 ^c	849	10.9	17.0	4004	51.3	80.4	128	1.6	2.6	2816	36.1	7797

a Percentage of total number of lung cancers

b Percentage of total number of specified lung cancers with defined histology

c Period 2005-2007

Methods

We identified 237,810 patients diagnosed with lung cancer (ICD-10 C33-C34) between 1970 and 2007. We computed age-standardised incidence rates using the European standard population by 5-year periods indicated by their midpoint. We used a Poisson regression age-cohort model to estimate the age-specific rates in the 1890 to 1960 birth cohorts. In addition, we analysed the proportion of lung cancer subtypes according to the ICD-O-3 morphology classification.

Conclusion

All lung cancer and SCLC incidence decreased over time in males and remained relatively stable in females. The slightly more rapid decrease in SCLC incidence rates compared to all lung cancer probably reflects the reduction in smoking rates over the study period.

Acknowledgement

This work is taken from the following publication: *Trends in incidence of small cell lung cancer and all lung cancer*. Sharma P, Riaz, Margreet Lüchtenborg, Victoria H. Coupland, James Spicer, Michael D. Peake, Henrik Møller. Lung Cancer. 2011 Sep 3. [Epub ahead of print]

FIND OUT MORE:

Thames Cancer Registry

Thames Cancer Registry is the lead Cancer Registry for lung cancer and mesothelioma

<http://www.tcr.org.uk>

Other useful resources within the NCIN partnership:

Cancer Research UK CancerStats – Key facts and detailed statistics for health professionals

<http://info.cancerresearchuk.org/cancerstats/>

The National Cancer Intelligence Network is a UK-wide initiative, working to drive improvements in standards of cancer care and clinical outcomes by improving and using the information collected about cancer patients for analysis, publication and research. Sitting within the National Cancer Research Institute (NCRI), the NCIN works closely with cancer services in England, Scotland, Wales and Northern Ireland. In England, the NCIN is part of the National Cancer Programme.