THORAX

Treatment variations may be cutting short lives of hundreds of lung cancer patients in England every year

Obvious disease or patient factors not driving geographical differences, say researchers

Differences in the active treatment of lung cancer across England may be cutting short the lives of hundreds of patients with the disease every year, concludes research published online in the journal ***Thorax.***

Disease and patient factors don't seem to be driving these variations, say the researchers, who calculate that if treatment rates rose to optimal levels, 800 patients could "have a clinically relevant extension of their lives each year."

Lung cancer survival in England is worse than in other comparable countries, with various factors, such as speed of diagnosis and access to cancer services, thought to influence the figures.

The researchers wanted to know if geographical variations in treatment might also have a role in lung cancer survival rates across the country.

So they retrieved national cancer registry information on the survival of people who had been diagnosed with lung cancer between 2005 and 2014.

The 1 year survival of lung cancer patients in England improved by one percentage point each year between 2005 and 2014, rising from 26 percent in 2005 to 36 percent in 2014, the figures showed.

The researchers then looked in detail at active treatment (surgery, radiotherapy, and chemotherapy) and its potential association with survival of 176,225 people who had been diagnosed with the disease between 2010 and 2014.

The detailed analysis of the 2010-14 period showed considerable variations in use of active treatment, which was in turn associated with survival rates.

Fewer than one in 10 patients (9.3%) had surgery in the bottom fifth (quintile) of active treatment areas compared with one in six (17%) in the top fifth. Similarly, radical radiotherapy varied from 4 percent to 13 percent, and chemotherapy from 21.5 percent to 34.5 percent.

The more active the treatment, the longer survival tended to be. And the researchers calculated that this variation added up to 188 potentially avoidable annual deaths in the first two years after diagnosis for those not actively treated with surgery plus 373 deaths for those not actively treated with radiotherapy.

Similarly, 318 deaths could have been delayed at the six month time point if patients had been as actively treated with chemotherapy as they were in the top five performing areas.

Chemotherapy treatment rates didn't affect two year survival rates, possibly because more advanced lung cancer tends to have a poor outlook irrespective of what treatment is given, say the researchers.

But the annual toll of avoidable deaths could be 800 if active treatment reached the rates of the top five performing areas, they say.

Their calculations held true after taking account of underlying conditions; age; sex; and tumour stage.

The researchers go on to say that linear associations between treatment rates and length of survival extend to the highest range of treatment rates for each option, and they conclude that "even the highest treatment rates that we observed are still below the levels required for optimal survival outcomes."

Notes for editors

Research: Geographical variations in the use of cancer treatments are associated with survival of lung cancer patients doi 10.1136/thoraxjnl-2017-210710
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