Stage at diagnosis and lung cancer survival

This is the first scientific study to compare lung cancer survival by stage internationally. It was published in one of the world’s leading respiratory medical journals ‘Thorax’. Six countries – Australia, Canada, Denmark, Norway, Sweden and the UK – took part in this in depth comparison. The study looked at the proportion of people who were still alive one year after their lung cancer diagnosis (one-year survival) in each country and also compared at which stage people’s cancers had been diagnosed.

Researchers found that differences in stage at diagnosis may only partially explain the differences between countries in the number of people who survive lung cancer.

Two types of lung cancer were looked at in this study, non small cell lung cancer and small cell lung cancer. These types of lung cancer were looked at separately because of differences in the way each disease progresses and how they respond to treatment. Non small cell lung cancers are the most common type of lung cancer. Non small cell cancers grow more slowly and are generally easier to treat than small cell cancers.

One-year small cell and non small cell lung cancer net survival varied widely between these six countries in 2004-7. One-year survival from non small cell lung cancer ranged from 30% in the UK to 46% in Sweden. Survival from this type of lung cancer was relatively low in Denmark, intermediate in Norway and higher in Australia and Canada. The UK also had the lowest one-year small cell lung cancer survival, Sweden and Australia had the highest.

The proportion of patients diagnosed at an early stage for non small cell lung cancers was slightly lower in the UK and Denmark in comparison to other countries. Differences in the proportions of people diagnosed at different stages of the disease, ‘stage distribution’, could be due to delays in diagnosis or differences in staging. Denmark had low survival for patients with early stage disease, but average survival for those with more advanced disease. The UK survival figures were among the lowest at all stages compared to the other countries. In Canada patients had high survival at early stages of lung cancer but relatively poor survival at advanced stages of lung cancer.

There are many possible reasons for the international differences in survival:

- Differences in treatment or access to treatment
- Late diagnosis
- Differences in how doctor’s ‘stage’ lung cancers
Inaccurate or incomplete recording of stage information could lead to inappropriate treatment and poorer lung cancer survival. This could also affect the pattern of stage distribution in a country.

This study found that there were large differences in the number of records missing information on stage at diagnosis for lung cancer. Again the UK was the worst at recording stage. Three out of ten non small cell lung cancers and four out of ten small cell lung cancers reported in the UK had no information on stage at diagnosis recorded. It isn’t clear if this is because fewer people are staged by doctors in the UK or because the transfer process of stage data to the cancer registries is less complete in the UK than in the other countries.

If you are interested in reading the abstract of this paper, ‘Lung cancer survival and stage at diagnosis in Australia, Canada, Denmark, Norway, Sweden and the United Kingdom: a population-based study, 2004-2007’, you can find it on the London School of Hygiene and Tropical Medicine’s web page. If you are interested in reading a more in-depth analysis of the research, you can find it on Cancer Research UK’s Science Update Blog.