

Lung cancer • Introduction

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A series of review articles on lung cancer beginning in this issue of *Thorax* aims to increase the awareness of up to date evidence based knowledge and to generate further interest and optimism in its diagnosis and management.

Lung cancer is the commonest fatal malignancy in the developed world causing over 40 000 deaths in the UK per annum. While the incidence of lung cancer in men is beginning to fall in the West, the incidence of lung cancer in women continues to rise and in a number of countries has overtaken breast cancer. In developing nations where smoking rates are high, the high mortality will continue to rise well into the century. In addition, the incidence of mesothelioma has been steadily increasing over the past 30 years and this is expected to continue for the next 20 years. Despite this epidemic, it is salutary to consider that in the Queen's Jubilee Year there has been little change in the 5 year survival for lung cancer since the Queen's father, George VI, died from lung cancer in 1952. In the UK fewer than 5% of patients are alive less than 5 years after diagnosis. This review series attempts to show the way forward to improve these poor survival figures.

Smoking remains the principal cause of lung cancer and preventing young people from smoking and improved smoking cessation strategies are therefore extremely important. These topics have been recently well reviewed and will not be reviewed further in this series. Only 10% of smokers go on to develop lung cancer, so genetic and dietary risk factors play an important role in the pathogenesis. The fact that cigarette smoking will not be easily or rapidly eradicated from society has increased interest in chemoprevention strategies.

One of the causes of the poor survival rates seen in the UK compared with Europe and North America may in part be due to patients presenting later with more advanced disease and consequently poorer performance status. Compared with the other common malignancies (breast, prostate and cervical cancer), lung cancer is more frequently diagnosed at an advanced metastatic stage. Lung cancer is an ideal disease for a population based screening programme because we can easily identify the at risk group. Older screening studies have failed to demonstrate any impact on survival and, though highly sensitive, CT scanning was not felt to be useful in screening for lung cancer because there were many false positives. However, optimising all aspects of the screening process and subsequent management, together with technological innovations (both radiological

and cellular/molecular biology), offers the potential for detecting lung cancers at a much earlier stage than was previously possible, hopefully leading to more curative treatment and improved survival.

While the majority of patients with lung cancer present with advanced disease precluding curative treatment, advances are being made in palliative chemotherapy and radiotherapy. There is increasing evidence and understanding that both these treatment modalities can improve survival, palliate and enhance quality of life. In addition, newer chemotherapeutic agents and novel treatment regimens are emerging which may be less toxic and have greater efficacy. While standard treatment modalities are producing incremental improvements in quality of life, survival, and cure of patients with lung cancer, the advances in molecular technologies are providing insights into the pathobiology of lung cancer development which have the potential to provide novel rational therapeutic strategies for early diagnosis, risk assessment, prevention, and treatment of this devastating disease.

The peak incidence of lung cancer is between 75 and 80 years of age in the UK. Over half of the 500 000 patients diagnosed annually worldwide with lung cancer are over 70 years old. This will present a major challenge to health services. There are a number of myths and prejudices about the management of lung cancer in the elderly. Older patients are less likely to be investigated and less likely to receive curative or palliative treatment, despite little evidence that age is a significant independent adverse prognostic factor in any treatment modality. Age per se should not preclude histological diagnosis, staging, and treatment.

Whether age is a risk factor for lung cancer surgery remains controversial. Evidence to date would suggest that the elderly can do as well as younger age groups. With modern surgical practice, elderly patients may derive further benefit. However, the extent of surgical resection required in the treatment of patients with operable lung cancer is controversial. There is increasing evidence that limited surgical resection would increase the number of patients suitable for surgery and reduce perioperative morbidity and mortality. Limited surgical resection, combined with screening for earlier diagnosis of smaller tumours (less than 3 cm), may constitute an effective form of treatment for elderly patients or patients with significant medical co-morbidities.

The UK has one of the lowest rates of investigation, lowest resection rates, and lowest use of curative and palliative treatments in the developed world and, as a consequence, it has the lowest survival and cure rates. It is important to

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remember at a time when the Government and the Health Service are increasingly responsive to patients' wishes that, despite the imprecise state of our knowledge about early lung cancer detection and lung cancer treatment, many patients at high risk may still want to undergo lung cancer testing, and patients with lung cancer would want to have the best available treatment despite relatively modest improvements in medium survival and cure. Ideally, patients with lung cancer should be investigated and treated in a centre of excellence as epitomised by the "One Stop" Lung Cancer Service at Papworth Hospital. These centres must be properly resourced and staffed by an enthusiastic multidisciplinary team committed to the integrated care of patients with lung cancer. The national shortage of lung pathologists, specialist radiologists, specialist nurses, and thoracic surgeons must be addressed to ensure the development of this type of service throughout the country.

Lung cancer is a common problem and a major cause of morbidity and death. The generally poor prognosis of patients has generated a degree of pessimism and nihilism among physicians. Lung cancer is more common than breast cancer and cervical cancer, but if one compares the resources devoted

to patient care and research, or the number of specialist clinics and healthcare professionals with a declared interest, lung cancer always seems to come a poor second.

This review series aims to improve the overall understanding of lung cancer. Areas of debate and controversy have been highlighted. Many of the questions raised in this review series could be resolved by well conducted multicentre clinical trials. Unfortunately, at the present time only a minority of patients are included in studies. Wider participation in both clinical and basic research will lead to higher standards of care essential for future improvement in the survival and cure of patients with lung cancer. It is hoped that increased awareness of up to date evidence-based knowledge and the important questions that need to be addressed will generate further interest and optimism for the diagnosis and management of patients with lung cancer.

REFERENCES

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- 2 **Sutherland G**. Current approaches to the management of smoking cessation. *Drugs* 2002;**62**(Suppl 2):53-61 (and other related articles).