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Treatment of advanced non-small cell lung cancer

Should include short courses of radiation, with palliation as the aim

In spite of a worldwide intensification of the battle against tobacco consumption, the incidence of lung cancer continues to rise in parallel with the increased consumption of tobacco. This is especially so in women in Western countries and in men and women in developing countries.

Major strides have been made in our knowledge of the biology of lung cancer. But we still await the impact of this information on prevention, early diagnosis, and cure rate, which has been essentially unchanged during the past couple of decades, with a five year survival rate for non-small cell lung cancer of 8-14%. The figures vary somewhat from country to country, with almost half the patients dying within the first year of diagnosis in spite of the best clinical treatments.[1]

Non-small cell lung cancer includes squamous cell carcinoma, adenocarcinoma, and large cell carcinoma. It accounts for 75-80% of all new patients; the remaining are small cell carcinomas. Of all patients with newly diagnosed non-small cell lung cancer, 70-75% have locoregional or advanced, unresectable disease. Recent large studies and meta-analyses have clearly shown the benefit of combined modality treatment (chemotherapy with or without surgery with or without radiotherapy) with improvements in median and two year survival for patients with locoregional disease, while the treatment of advanced disease is still being debated.[2 3]

Until the late 1990s, the most commonly accepted symptomatic treatment consisted of palliative radiotherapy. A recent Cochrane review of 10 randomised trials using varying doses of radiotherapy concluded that there is no strong evidence that any regimen gives superior palliation.[4] A recent British study with 148 patients challenges this conclusion by showing that fractionated thoracic irradiation (30 Gy in 10 daily fractions) afforded better relief of symptoms and reduced anxiety compared with single fractions (10 Gy), but did not increase survival.[5] According to the Cochrane review, there is evidence for a modest increase in survival (6% at one year and 3% at two years) in patients with good performance status given higher doses of radiotherapy.

With palliation as the aim, most patients should be treated with short courses of one or two fractions—as in the study in this issue by the Medical Research Council's lung cancer working party—using either 17 Gy as two 8.5 Gy fractions one week apart or less frequently 10 Gy as a single dose, based on two previous MRC trials (p 465).[6] Patients were randomised with a reasonable stratification to supportive treatment plus either immediate or delayed thoracic radiotherapy. The study included 230 patients with non-small cell lung cancer that was locally too advanced for surgical resection or intensive radiotherapy with curative intent. Cytostatic chemotherapy was not permissible in any group. The median time to start of thoracic radiotherapy was 15 days in the intermediate group and 125 days in the delayed group. No differences were noted in primary study measures such as percentage of patients alive and without moderate or several local symptoms, nor were there any differences in secondary measures, such as quality of life, adverse events, or survival. Interestingly, 58% of the patients in the delayed group did not receive thoracic radiotherapy at all, thus reserving the much needed capacity of oncology centres for other patients in need of irradiation.

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This study took place over a six year period in the mid-1990s. In the meantime evidence has emerged, based on meta-analysis including Cochrane analyses, that combination chemotherapy with cisplatin in a similar group of patients results in improvement in one year survival by 10% provided that the patients had a good performance status at the time of diagnosis.[7 8] Symptomatic improvement is reported in 60% of all such patients. Further, patients with progressive disease during chemotherapy have been shown in two recent randomised studies to benefit from single agent chemotherapy, based on both survival and control of symptoms.[9 10]

The picture has thus changed since the conclusion of the trial reported in this issue leaving a number of questions open for future studies. These include a clarification of whether or not delayed chemotherapy is as effective as immediate chemotherapy for certain

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selected groups of patients, as shown for radiotherapy in this study,[6] or whether the two modalities should be combined and administered at the time of diagnosis.

Considering the large number of patients and the implications for resources available in the healthcare system, carefully planned multinational studies are needed, including socioeconomic analyses, as well as prospective trials including patients with poor performance status.[11] Until results from such studies become available, the management of patients with advanced non-small cell lung cancer should be discussed carefully with patients and relatives, and detailed information should be given regarding the benefits and harms associated with the treatment and the timing of it.

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Staffing by numbers in the NHS

We need to think in terms of teams and what they achieve

Worldwide, the variation in the number of doctors and nurses employed per capita is huge, but little guidance or evidence exists about the optimum number for any given system of care. Fewer doctors and nurses per capita work in the United Kingdom than in other developed countries. There is a consensus that not enough healthcare professionals work in the NHS and that some problems of the NHS—for example, waiting lists, waiting times to see specialists, and access to radiotherapy—would be ameliorated with more trained staff.

Over the past decade the number of doctors working in the NHS increased by 44%, and further expansion is planned. So, the Audit Commission's latest report, *Medical Staffing*, based on data collected in 2001 from 88% of acute trusts in England and Wales, is timely.[1] The Audit Commission has prepared individual tailored performance reports for each trust Some interesting signposts emerge from the national findings. Restricting junior doctors' working hours to 56 hours a week (the "New Deal") is a priority for hospitals in the United Kingdom. Financial penalties have forced change. Most training posts in emergency medicine, radiology, and pathology are now compliant with the New Deal, but for other specialties the average posts per trust that are compliant ranged from 39% to 45%. The favoured solution to managing with fewer "doctor hours" is to appoint more doctors, mainly in non-consultant career grade posts. Doctors in these posts often fulfil roles equivalent to those of specialist registrars. This fastest growing group—up fourfold in the past decade—has been dubbed the new "lost tribe,"[2] and the Audit Commission's report indicates that few have adequate opportunities for study. Doctors available to fill such posts will become difficult to find, the report says. Other options—for example, introducing physician assistants or other support workers,[3 4]—must therefore be explored if current restrictions on hours, let alone the more stringent European working time directives, are to be met.

Staffing difficulties are not just about numbers. It is crucial that scarce human resources are used wisely. The 2000 review of workforce planning in the NHS, *A service of all the talents*, correctly placed emphasis on better integration of professional groups and described workforce planning as poorly integrated with the needs of, and unresponsive to changes and developments in, the service.[5] Although there have been enormous changes in delivery of care, little energy has been expended on exploring which team structures are most appropriate for today's patients and, importantly, for today's staff. We continue, largely, to work in old ways—and it is stressful. For example the shift in balance from inpatient to ambulatory care with shortened inpatient stays, and fewer beds and wards, has gnawed away at the security of a medical "firm" and its patients—being based on one or two wards. "I can never find a nurse who knows my patients" is a regular refrain. The difficulties of working in ways suited to a previous era are felt daily by doctors and nurses throughout the NHS.

Hospitals employ different numbers of doctors. To provide a "reasonable measure of whether trusts are generously or tightly staffed," the Audit Commission

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