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Lung cancer symposium

S Davidson
Specialist Registrar, Respiratory Medicine, Department of Respiratory Medicine, Glasgow, Scotland

ABSTRACT In 2006, Scotland took the historic move of banning smoking in public places. However, Scotland continues to suffer from amongst the highest rates of lung cancer in the world, with amongst the worst survival rates. This symposium examined the role of CT in screening for lung cancer, new diagnostic and staging techniques such as endobronchial ultrasound guided sampling as well as reviewing the optimum surgical approach, chemotherapy and radiotherapy for early stage disease. Looking to the future, the place that novel therapies may have in the management of lung cancer patients was examined.

KEYWORDS CHART, EGFR, lung cancer, nurse specialist, screening, staging

LIST OF ABBREVIATIONS Chest X-ray (CXR), computed tomography (CT), continuous hyperfractionated accelerated radiotherapy (CHART), epidermal growth factor receptor (EGFR), fine needle aspiration (FNA), International Adjuvant Lung Cancer Trial (IALT), lung cancer nurse specialist (LCNS), non-small cell lung cancer (NSCLC), transbronchial needle aspirate (TBNA), ultrasound (US), vascular endothelial growth factor (VEGF)

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Correspondence to ***S Davidson, Department of Respiratory Medicine, Southern General Hospital, 1345 Govan Road, Glasgow G51 GTF***

tel. ***+44(0)141 201 1105***

fax. ***+44 (0)141 201 1101***

e-mail
scott.davidson@sgh.scot.nhs.uk

CME

SESSION 1
THE SCALE OF THE PROBLEM – AND CAN THAT BE CHANGED?

Dr D Brewster, Professor H Burns, Professor J Jett

At present, there are more than 4,000 new cases of lung cancer and just fewer than 4,000 deaths from lung cancer reported per year in Scotland. However, there does appear to be a decrease in incidence of lung cancer among the male population, and a levelling off in the female population. There is evidence that smoking cessation leads to a substantial and significant reduction in lung cancer risk, with 30 years of abstinence leading to a relative risk reduction of 90%.[1] Since it has been shown that 60–70% of smokers want to stop, the emphasis must be on aggressive smoking cessation programmes.

The risk of dying from lung cancer per cigarette smoked is higher in the West of Scotland than elsewhere.[2] The reason for this remains poorly understood and there is a national study looking at co-morbidity within lung cancer patients recruited throughout Scotland.

Despite lung cancer remaining a disease of the developed world, the lung cancer epidemic is evolving throughout the developing countries at differing rates, and up to 500 million people alive today can expect to die from the effects of smoking, with 250 million of these being in middle age. In relation to this, the politics of smoking cessation were explored and again the Scottish Parliament was applauded for its introduction of the no smoking in public places legislation introduced in March 2006.

Professor J Jett from the Mayo Clinic delivered the John Hamilton Brown Lecture entitled 'The early detection of lung cancer: the pros and cons of screening'. He argued that CT is the screening modality of choice, based on previous published work, with one such trial showing that CXR missed 77% of cancers (6–45 mm size).[3] The obvious advantage of CT is the detection of more early stage cancers that may be amenable to treatment with curative intent. However, there are drawbacks with CT screening, and these include psychological drawbacks as well as the detection of incidental nodules. In the recent Mayo Clinic Screening Trial,[4] 1,646 nodules were detected at baseline in 1,520 participants, 782 (51%) with size ranging from less than or equal to 3 mm in 59·3% (976 nodules) to >21 mm in 0·5% (8 nodules) and after five annual scans, 3,356 nodules were detected in 1,118 (73%). Within this study, the likelihood of the nodule being malignant by size was 0·2% in those nodules less than or equal to 3 mm through to 33% for those nodules 21–30 mm in size. A follow-up protocol for nodules was advocated. The cost effectiveness or otherwise of CT screening for lung cancer remains unknown at present.

SESSION 2
MAKING AND MANAGING THE DIAGNOSIS

Dr M Peake, Mr J McPhelim, Dr J Baird

Within the UK, screening for lung cancer has not been implemented, and in most instances by the time a patient presents with symptoms the CXR will be abnormal in approximately 90% of patients and up to 80% of these patients will have inoperable disease. In the UK, the

traditional pathway for tissue diagnosis of lung cancer begins with bronchoscopy. Data from Leicester demonstrate that in 2002 the diagnostic rate at bronchoscopy was 72%, and 25% of patients require a second diagnostic procedure, typically a CT-guided biopsy. By undertaking a thoracic CT before clinic review the bronchoscopy rate has been reduced by 50%, and 25% of new patients can be discharged at their first clinic appointment.

New staging and diagnostic techniques include mediastinal staging by needle (TBNA, the diagnostic yield of which is enhanced by ultrasound (endobronchial US)). Ultrasound-guided FNA of neck nodes has also been shown to be useful in patients with CT evidence of N2 disease, where 50% of such patients have non-palpable, malignant neck nodes.[5] In Leicester, 11% of all diagnoses are made by neck US and FNA, the procedure being performed in the out-patient clinic. However, it is imperative that access to CT is rapid so the most appropriate diagnostic test can be performed.

The pivotal roles of the multi-disciplinary team and the LCNS and their effect on diagnostic and treatment rates in particular were reinforced. However, Mr McPhelim described a national audit that demonstrated a significant amount of LCNS time is taken up with inappropriate tasks and that there is a lack of cross cover. This is an important issue, and the Roy Castle Foundation has produced the Lung Cancer Patients Charter.[6] All patients should have access to the best treatment and care and the LCNS is pivotal to this approach. The charter also highlights the need for the profound impact of lung cancer to be acknowledged by healthcare professionals, policy makers, politicians and the public. In particular, the patients should be free from the blame and stigma of having the disease. National Cancer Research Network data show that site-specific cancer research spends only 3% on lung cancer. Twenty-five per cent of 2000 respondents in a MORI poll in 2007 stated that lung cancer patients were less deserving of a hospital bed than other cancer patients.

SESSION 3
THE MANAGEMENT OF EARLY LUNG CANCER: WHOSE DOMAIN?

Mr P Goldstraw, Dr N O'Rourke, Professor N Thatcher

The treatment of choice for those patients with early stage non-small cell lung cancer, fit enough to undergo surgery, with curative intent is lobectomy[8] with systematic nodal dissection.[9] Systematic nodal dissection is a two-step technique, involving the removal of at least three mediastinal nodal stations (including station 7). Systematic nodal dissection has been shown to improve not only intrathoracic staging but also stage-related survival[10] and there is some evidence of improved overall survival,[11] with the removal of greater than six nodes being optimum. Despite this evidence, none of the recent adjuvant chemotherapy trials specified the criteria for systematic nodal dissection in their protocols. The value of adjuvant chemotherapy was highlighted with the IALT trial demonstrating a 4% survival advantage over surgery alone for those patients with early stage disease.[12]

Early CT screening could lead to more sub-lobar resection of tumours as this preserves lung function, quality of life and options for further primaries. It was suggested that this approach be considered for screen-detected, solitary lesions, <1·5 cm, in which ground glass opacity accounts for >50%.

For those patients with early stage disease that are medically inoperable the standard of care is CHART radiotherapy with evidence in squamous lung cancer for a five-year survival benefit of 15% vs 7% for conventional radical radiotherapy. The main adverse effect is an increase in significant oesophagitis.[13]

SESSION 4
THE FUTURE

Professor T Sethi, Dr NV Zandwijk, Dr M Cullen

Improved survival will require novel therapies. Laboratory-based projects based around the EGFR receptor antagonists (Iressa, Tarceva, Erbitux)[14] were described for studying and manipulating the (epi-) genetic/mutational status of the tumour and its microenvironment. The role of anti-angiogenic therapy was highlighted and the ability of bevacizumab (a humanised monoclonal antibody binding VEGF) to improve survival when added to chemotherapy in patients with NSCLC was discussed.[15]

It was highlighted that close collaboration with translational research teams in the development of clinical trials was required in order for important molecular data to be obtained about the patient and the tumour so that in the future we will be able to predict those patients most likely to benefit from new treatments.

Unfortunately, in spite of the advantages highlighted above, fewer than 5% of lung cancer patients are entered into clinical trials. There are now many trials actively recruiting for all types and stages of lung cancer, and it is vital that trial recruitment improves in the future. An easy to follow flow diagram of these can be accessed at www.ncrn.org.uk/portfolio.

SUMMARY

The symposium was well attended. There was keen discussion throughout and the abstracts of individual talks can be found at: www.rcpe.ac.uk/publications/abstracts/lung_cancer/lung_cancer_06.pdf

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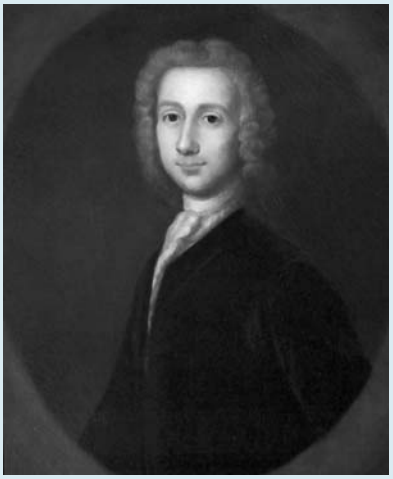

PAST PRESIDENTS

Professor Robert Whytt (1714–1766)

His name is pronounced White, the latter spelling later having been adopted by his son.

His early years were filled with tragedy. His father, an advocate and land owner, died six months before Robert was born. His mother died when he was six. His elder brother who cared for Robert, graduated MA and MD from St Andrews but died when Robert was fourteen. Robert's first wife, a sister of the governor of New York, died two years after they married, but by then they had lost two infants. By his second wife, Louise, he had 14 children only six surviving into adulthood. Whytt himself died in 1766, aged 52. Nevertheless, in a relatively short life he achieved much.

He graduated MA from St Andrews in 1730 and proceeded to Edinburgh, like many contemporaries spending some time in Paris (attending classes by Winslow) and Leyden (under Boenhavve). His first MD (1736) was from Rheims, his second (1737) from St Andrews. Three weeks after that he became a licentiate of, and in the following year a Fellow of, the Royal College of Physicians of Edinburgh.

His first paper (1743) was on *The virtues of lime water in the cure of stones* (subsequently found to be ineffective but nevertheless popular for some time), another on *The vital and other involuntary motions of animals* (1751). In 1747, he was appointed Professor of Physiology and Medicine at Edinburgh, in 1752, a Fellow of the Royal Society, in 1761, Physician to the King in Scotland, and in 1763, President of our College, dying three years later.

Those interested in post-mortem diagnoses might be interested in his gouty symptoms, diuresis and irregular pulse, followed by flatulence, intestinal colic and a productive cough. Later, he had difficulty lying on his right side and purplish discolouration of both thighs and legs. At autopsy there were 5 lbs of fluid in the left pleural cavity, and 2 lbs in the right with some adhesions. The lungs were healthy, the heart atrophied with a small pericardial effusion. The abdominal viscera were healthy with no ascites. If it is any comfort, his physicians were baffled!

Derek Doyle
Obituaries Editor, The Journal RCPE

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