

LUNG CANCER IN PRIMARY CARE

The authors look at how new NICE guidelines on referral will impact the quality of care for people living with lung cancer

Drs MH Tseung, Susanna Hill, Pauline Love and Steven Beaven
 General Practitioners and GP Advisors to Macmillan Cancer Support

Dr Ernie Marshall
 Consultant Medical Oncologist, Consultant Advisor to Macmillan Cancer Support

The importance of lung cancer in primary care derives from its appallingly high incidence and mortality statistics. General practitioners have a role in achieving earlier diagnoses with the prospect of improving outcomes and in end of life care for the large numbers whose disease is incurable.

This article will examine what GPs can do to improve the prospects of lung cancer patients and give a brief update on the role of secondary care.

Statistics

Lung cancer is the UK's second most common cancer in both men and women after prostate and breast cancer respectively, with over 44,000 new diagnoses in 2012.¹ It is the commonest cause of cancer death. The UK's five-year survival rate for lung cancer is 9.5%,² compared to a European average of 13%³ and 16% in the USA.⁴ The UK one-year survival rates are 30% in men and 35% in women,⁵ reflecting how frequently the disease is advanced at diagnosis. Approximately 39% of lung cancers present via an emergency route and are associated with poorer one-year survival.⁶

Lung cancers comprise small cell (15%) and non-small cell (85%) lung cancers. Small cell cancers have poorer survival rates.

Early detection of lung cancer

As survival rates broadly correspond to the stage of disease at diagnosis, earlier diagnosis is central to better outcomes. Resectable tumours carry the best chance of cure.

Diagnosing lung cancer early depends on public awareness of relevant symptoms, recognition in primary care of potential lung cancer patients – not easy when the high risk patients commonly have existing respiratory problems – and effective pathways for investigation and referral. These include direct access to investigations for GPs. Screening may also soon play a part.

Public awareness

Research showing low public awareness of significant symptoms led to campaigns throughout the UK to raise awareness. 'Be Clear on Cancer', run by Public Health England in partnership with the Department of Health and NHS England and supported by Cancer Research UK, has been running since 2010. Evaluation of the

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lung cancer campaign in May to July 2012 showed that, compared to the same period the previous year, an additional 700 cancers were diagnosed and around 300 additional patients had tumours that were amenable to resection.⁷ This evaluation demonstrated that, in the short term at least, awareness-raising campaigns can have an effect.

The role of primary care

NICE Suspected Cancer: Recognition and Referral Guidelines 2015

Research in primary care showing that in the early stages lung cancers are commonly associated with non-specific symptoms helped to shape the recommendations in the new NICE guidelines on referral of suspected cancers, published in June.⁸ The section on suspected lung cancers is summarised in Table 1.

This table highlights some areas of change since the 2005 guidelines. Important factors to prompt GPs to consider lung cancer now include those with appetite loss or a raised platelet count. Research from primary care has shown that a raised platelet count may be associated with cancers of lung, oesophagus, stomach and endometrium.

Identifying, investigating and referring appropriate patients is crucial to making earlier diagnoses. The new guidelines, based on referral at a risk of 3% as opposed to the previous 5% threshold, are to be welcomed, but their implementation in both primary and secondary care raises challenges. The lowered threshold will entail an increase in numbers of patients investigated

TABLE 1: SUSPECTED LUNG CANCERS

Lung and pleural cancers	Criteria for action:
<p>Urgent Referral: Arrange an appointment within 2 weeks</p>	<p>For patients who have:</p> <ol style="list-style-type: none"> 1. Chest x-ray findings that suggest lung cancer 2. Chest x-ray findings that suggest mesothelioma – new for 2015 3. Patients aged ≥ 40 years with unexplained haemoptysis – new for 2015
<p>Urgent investigations: Arrange chest x-ray within 2 weeks</p>	<p>Consider/offer an urgent chest x-ray (within 2 weeks) if patient has the following:</p> <ol style="list-style-type: none"> 1. Persistent or recurrent chest infection 2. Finger clubbing 3. Supraclavicular lymphadenopathy or persistent cervical lymphadenopathy 4. Chest signs consistent with lung cancer 5. Chest signs compatible with pleural disease – new for 2015 6. Thrombocytosis (raised platelet count) – new for 2015
<p>Urgent investigations: Arrange a chest x-ray for patients who are:</p> <ol style="list-style-type: none"> 1. Aged ≥ 40 years and NEVER SMOKED with ≥ 2 of the listed unexplained signs or symptoms listed, or 2. Aged ≥ 40 years and have PREVIOUSLY SMOKED with ≥ 1 of the listed unexplained signs or symptoms, or 3. ANY AGE if they have been exposed to asbestos and have ≥ 1 of the following unexplained signs or symptoms 	<p>Unexplained signs and symptoms:</p> <ol style="list-style-type: none"> 1. Cough 2. Fatigue 3. Shortness of breath 4. Chest pain 5. Weight loss 6. Appetite loss – new for 2015

and referred, an increasing proportion of whom will not have cancer. Clear communication with those referred about the reasons for referral and their level of risk will be important to minimise potential harms of this increased clinical activity and also provide a good opportunity as a ‘teachable moment’ regarding future health.

Macmillan Cancer Support has produced an updated **Rapid Referral Toolkit**,⁹ condensing the new NICE Guidance into a user friendly format, so that GPs can refer to it quickly in practice.

Chest x-ray

Chest x-rays – a relatively inexpensive and essentially harmless test, universally available to GPs – should be used more liberally by GPs on implementation of the new guidelines. However, a normal chest x-ray does not exclude lung cancer. A retrospective study¹⁰ of lung cancer patients showed that of chest x-rays taken

in the year prior to diagnosis, 13% were reported as abnormal but not suspicious of cancer, and 10% were entirely normal. If clinical concern persists in the face of a normal chest x-ray, a CT scan of the chest should be carried out. Safety-netting is important here. GPs and practices must ensure patients with continuing symptoms and normal chest x-rays are reviewed and further assessed.

Cancer decision support tools

Tools derived from research about how patients with cancer present in primary care are available to help assess cancer risk. These include risk assessment tools based on work by Professor Willie Hamilton¹¹ (available at <http://www.cancerresearchuk.org/health-professional/learning-and-development-tools/cancer-risk-assessment-tool-rat>) and Qcancer (http://qcancer.org/),¹² a web-based risk calculator, developed by Prof. Julia Hippisley-Cox. These tools enable GPs to assess cancer risk in a way not previously possible. With help from Macmillan Cancer Support, they are now being incorporated into the clinical systems of the major UK clinical software companies.

Screening

The US National Lung Screening Trial (2011),¹³ using low dose CT scanning in high risk patients, showed a 20% reduction in lung cancer mortality, and almost 7% reduction in all cause mortality. A similar study is being conducted in the UK (UK Lung Screening Trial, <https://www.ukls.org/index.html>), in which 250,000

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men and women between 50 and 75 years of age are invited to complete a questionnaire. Those identified as high risk will be randomised to screening or control groups. It is possible that screening for high risk patients will be advocated if the outcome of this trial supports the introduction of screening.

The role of secondary care

Secondary care's role includes diagnosis, treatment and some aspects of end of life care.

The aim of the diagnostic pathway for suspected lung cancer is to confirm a diagnosis, including histology and full staging, achieved with contrast enhanced CT scanning and either bronchoscopic or percutaneous biopsy in the majority of cases. A significant number of patients have complex pathways requiring PET-CT scanning and mediastinal lymph node sampling to select for radical treatment.

Novel diagnostic pathways for suspected lung cancer are being developed for patients with both classical and vague symptoms. The ACE programme (Accelerate, Coordinate, Evaluate) initiated in June 2014 is running projects that aim to improve early detection and decrease emergency presentation. These projects include risk-stratified low dose CT screening, automated triggers for 'straight to CT' following an abnormal chest x-ray and diagnostic pathways for vague symptoms.¹⁴

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Treatment

Lung cancer resection remains the principal goal of treatment in stage I/II disease. Five-year survival is dependent on tumour size (T stage) and lymph node status (N stage). Surgical resection rates have improved, but the UK continues to lag behind major comparative countries. Surgery depends on preserved lung function and patient fitness.

For the increasing number of patients with early lung cancers who are unfit for surgical resection, Stereotactic Ablative Radiotherapy (SABR), a targeted form of radiotherapy, may be an option where the tumour is located away from the central airways and tumour diameter is ≤ 5 cm.

Post-operative adjuvant chemotherapy remains an important tool at a population level improving 5 year survival by 5%. However, co-morbidity and borderline functional status commonly make this a less attractive option at an individual level.

Stage III lung cancer (confined to the chest and mediastinum) is best managed with combined external beam radiotherapy and chemotherapy, delivered either concurrently or sequentially. This approach may achieve 50% 2-year and 30% 5-year survival.

The majority of patients continue to present with advanced disease. Median survival in this setting ranges from 6-9 months with 30% 1-year survival. Systemic anti-cancer therapy (SACT) may give modest gains in survival and quality of life when delivered to appropriately selected patients with good performance status, minimal co-morbidity and low tumour burden. These treatments carry significant risks, including life threatening complications (e.g. neutropenic sepsis), so decision making requires properly informed consent. Age alone is not a guiding prognostic factor, though as increasing age is commonly associated with co-morbidity and poorer functional capacity, these will appropriately influence treatment decisions. Undertreatment of an increasingly elderly population is often cited as one explanation for poor 1 year outcomes in the UK.

Recent advances in cancer biology have resulted in the introduction of targeted therapeutics, with improved outcomes for some patients. Between 5% and 10% of lung cancers harbour a mutation in the Epidermal Growth Factor Receptor gene. This mutation correlates with female and never smoked status and is particularly common in Asian populations. Orally available targeted EGFR inhibitors achieve high response rates and median survival approaching 2 years in this group.¹⁵

A new class of immunotherapy (anti PD1 antibodies) enhancing the host response to tumour antigens has shown promising results.¹⁶ This progress suggests that immunotherapy will rapidly become the backbone of lung cancer treatment in first line and potentially post-operative adjuvant settings.

Survivorship, late effects

For the relatively small number of patients who survive lung cancer, consequences of their cancer and its treatment are important. Surgery results in reduced lung function; radiotherapy may cause lung fibrosis, heart valve degeneration and accelerated atherosclerosis when the heart has been in the irradiated field; chemotherapy may cause a wide range of potential late effects, dependant on the regime used.

Second primary cancers are more likely to occur in cancer survivors.¹⁷ This may be due to genetic predisposition to cancers, lifestyle factors or late effects of radiotherapy or chemotherapies. Lung cancer survivors are more likely to develop a new cancer than those with breast or prostate cancer, according to a report by Macmillan Cancer Support.¹⁸

Systematic recording of radiotherapy and chemotherapy in GP systems is fundamental to enable GPs to identify patient presentations which may be related to their previous treatment.

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End of life care in lung cancer

As 67% of lung cancer patients present with Stage III and IV disease, early consideration of palliative care is important. Integrated specialist palliative care has been shown to improve care, reduce chemotherapy use and may improve overall survival by reducing treatment related mortality.¹⁹ Early palliative care should improve symptom management, coordination of care, communication and end of life care planning. A diagnosis of incurable lung cancer should immediately prompt primary care teams to add the patient to their appropriate register and start planning the patient's care.

Adults with lung cancer have more symptom distress than patients with any other cancer.²⁰ Common problems include pain, breathlessness, haemoptysis, depression, anxiety, weight loss and fatigue. Some symptoms, though not specific to lung cancer, are more common in this context.

Dyspnoea can occur because of tumour bulk limiting lung volume, airway obstruction causing lung collapse, pleural or pericardial effusion or as a consequence of surgery or radiotherapy. Commonly, patients with lung cancer have co-existing chronic lung disease. Correctable causes (e.g. effusions) must be identified if the patient is fit enough and willing to undergo interventions to correct them.

Management of dyspnoea should include psychosocial support, advice about breathing control and coping strategies. The distress provoked by breathlessness commonly increases the feeling of breathlessness. Explanation and reassurance can play a large part in breaking this cycle. These non-pharmacological interventions have a large part to play in improving the quality of life of the patient and also of those around them.

First line drug treatment of dyspnoea in advanced lung cancer is opioids, with benzodiazepines, which may reduce anxiety and fear as second line. Steroids may be useful for lymphangitis or tumour-associated airway obstruction. Oxygen should only be used if the patient is hypoxic.

Opioids and benzodiazepines in patients with breathlessness can cause respiratory depression. Careful titration of doses as with pain management, but with lower doses and smaller increments, reduce this risk. As benefits can be dramatic with even small doses of opioids, benefits usually far outweigh the risks.

Superior Vena Cava Obstruction may occur at any point in the patient's illness, can be distressing and may respond to chemotherapy, radiotherapy or steroids. Stent insertion may be considered.

Hoarseness may occur due to involvement of the recurrent laryngeal nerve. Referral to ENT services for assessment and treatment is appropriate if the patient is fit for their intervention.

Haemoptysis may respond to radiotherapy, sometimes requiring only a single fraction, or to endobronchial laser treatment.

Conclusion

Lung cancer is a common and, currently, usually fatal condition. GPs and practice teams play an important part in the lives of lung cancer patients and their families. Reflecting on the challenges of earlier diagnosis and quality of support for dying patients may highlight changes that practices can readily make to be more effective for this patient group.

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