

RESPIRATORY MEDICINE

5 November 2003

SESSION 1

HOW DO I MANAGE . . . ?

Chair: Dr R Milroy, Consultant in Respiratory Medicine, Stobhill Hospital, Glasgow

FUNCTIONAL BREATHLESSNESS

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Abstract

The occurrence of functional or 'medically unexplained' symptoms in out-patient practice in the UK is quite substantial, accounting for between one-third and one-half of all consultation episodes; their management is probably best looked at as a whole rather than focusing only on the organ system apparently involved. In various sub-specialities, different collections of medically unexplained symptoms are given different designations such as irritable bowel syndrome, fibromyalgia, temporomandibular joint disorder, non-cardiac chest pain or 'chronic hyperventilation'. Not only are these syndromes very similar to each other, the same patient may be diagnosed as having many such syndromes depending on which clinics they have attended.

In the UK, breathlessness remains unexplained after extensive investigation in around 14% of patients. Before calling breathlessness 'functional', it is vitally important to consider entities such as asthma, primary pulmonary hypertension and occult pulmonary embolism. Fourteen per cent of cases of breathlessness with normal examination, chest X-ray and spirometry will be due to cardiac failure.

The most important parts of the management of unexplained syndromes are to set an appointment time of the appropriate length, to listen to the patient and not to doubt their symptoms. Clinics are best run jointly with a psychiatrist present or in close collaboration with a psychiatrist. Techniques useful for these syndromes include cognitive behaviour therapy, graded exercise therapy, education about the role of the autonomic system in producing many of these symptoms and relaxation therapy. Specific breathing exercises have been used for documented hyperventilation syndrome, and these seem especially useful in patients who also have panic disorder.

Note, however, that panic attacks are much more

common in asthmatics than in the normal population and so an acute presentation with dyspnoea due to a panic attack does not rule out asthma as an underlying cause of the problem – in fact, asthma should be sought actively.

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Key words: Breathlessness, unexplained syndromes.

Sponsors: None.

Declaration: No conflict of interest declared.

THE BREATHLESS PREGNANT LADY

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Abstract

Breathlessness is a very common presenting symptom in pregnancy. It is also a very non-specific symptom and can be the manifestation of normal physiological changes of pregnancy or the only manifestation of very serious and, indeed, life-threatening disease. It follows that any pregnant lady complaining of breathlessness requires very full assessment. There are particular concerns in pregnancy about investigations used to diagnose causes of dyspnoea, particularly those involving ionising radiation. The physician needs to be very aware of the relative risks to be able to make a clinical judgement. This frequently involves asking for expert advice from doctors with a particular interest in various aspects of disease in pregnancy. Patients and relatives often have concerns about the dangers of drug treatments. This may be related to lack of information, and discussion and reassurance is essential. There is ample data to guide physicians on the appropriate use of drugs in pregnancy where necessary, and this should be followed.

SYMPOSIUM ABSTRACTS

The major physiological changes in normal pregnancy are a reduction in functional residual capacity (FRC) of 10–20% and a minor reduction in airway resistance. The breathlessness is contributed by increased sensitivity of the brain to progesterone leading to hyperventilation and a compensated respiratory alkalosis. A sudden change of breathlessness cannot be explained easily on the basis of physiological change and should alert the clinician to the possibility of underlying disease. These fall into three groups: pre-existing disease that is affected by the pregnancy, such as asthma; diseases that are directly related to the pregnancy, such as thrombo-embolic disease (which is six times more common in uncomplicated pregnancy); and diseases that are related to obstetric practice, such as amniotic fluid embolism and ovarian hyper-stimulation. Pre-existing disease such as cardiac diseases, cystic fibrosis and sickle cell disease present major problems during pregnancy – indeed, in many cases, it may be wise to advise against pregnancy for this reason. Others such as diabetes require very careful monitoring, so as not to increase maternal and fetal risk. The management of these conditions will involve specialists with particular interest in both obstetrics and the various medical conditions.

The management of breathlessness in pregnancy provides a particular challenge to the physician and the obstetrician, but the expertise available should be able to guide them to the best outcome for mother and baby.

Key words: Amniotic fluid embolism, breathlessness, cardiac diseases, cystic fibrosis, functional residual capacity, pregnancy, sickle cell and thrombo-embolic disease.

Sponsors: None.

Declaration: No conflict of interest declared.

SESSION 2

FUTURE DIRECTIONS

Chair: Dr J Simpson, Senior Lecturer in Respiratory Medicine, University of Edinburgh

INTERVENTIONAL BRONCHOSCOPY

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Abstract

Many of the symptoms of lung cancer are caused by the portion of a tumour that arises in, and obstructs, a major airway. These include cough, haemoptysis and breathlessness or infection caused by obstructive collapse. They can be relieved by a number of treatment

modalities, using endoscopic techniques.

Immediate relief of large airway obstruction can be obtained by using physical debulking techniques: these include endoscopic surgery, electrocautery and laser photo-resection, normally using the rigid bronchoscope under general anaesthesia. Endobronchial brachytherapy and photodynamic therapy are biological tumour-reducing techniques with a selective action on tumour tissue, having a more delayed but probably more durable effect. We have established that single-dose brachytherapy offers symptom palliation comparable to that obtained with standard fractionated external beam radiotherapy regimes. It also offers additional flexibility for combined treatment, the synchronous treatment of bilateral primary disease and re-treatment. It is a potentially curative treatment for small tumours in selected cases.

Photodynamic therapy involves the intravenous administration of a systemic sensitiser that is selectively taken up by tumour tissue, followed by the application of laser light of a specific wavelength. The technique is undergoing re-evaluation with the advent of new technology. Tumour regression can be obtained in progressive or relapsed disease following conventional treatment. It is also a potentially repeatable therapy with excellent healing characteristics, and may be uniquely suitable for the early treatment of metachronous primary disease in high-risk populations. Further evaluation with comparative trials is desirable.

Tracheobronchial stenting is used to increase airway calibre without tumour reduction. It is particularly suitable for the relief of external airway compression due to progressive or relapsed disease, or preparatory to definitive anti-tumour therapy. Many types of stent are available. We have had good results in carefully selected patients using a Nitinol mesh stent placed by a standard flexible bronchoscopy technique without the need for radiological screening.

Fluorescence bronchoscopy utilises the principal of autofluorescence, with a different signal from malignant and pre-malignant areas in comparison with normal mucosa. Our assessment of the technique is broadly in line with published work of Lam and others, suggesting an increase in sensitivity for the detection of dysplasia and neoplasia in comparison to white light bronchoscopy, with little loss of specificity. The laser technology is still under development, with a prospect of further improvement in sensitivity and specificity. Treatment implications are currently uncertain with respect to dysplasia, but the technique has a legitimate clinical role in endobronchial staging and in the detection of early invasive disease, with a particular focus currently on high-risk populations.

The successful use of endobronchial therapy requires a multi-disciplinary approach in which a number of therapeutic options can be considered (and often combined) to meet a range of clinical situations.

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Key words: Electrocautery, endobronchial brachytherapy, endoscopic surgery, endoscopic techniques, fluorescence bronchoscopy, fractionated external beam radiotherapy, laser photo-resection, lung cancer, photodynamic therapy, symptom palliation, tracheobronchial stenting.

Sponsors: None.

Declaration: No conflict of interest declared.

ROBERT W PHILIP MEMORIAL LECTURE

Chair: Dr NDC Finlayson OBE, President, Royal College of Physicians of Edinburgh

ADVANCES IN ACUTE RESPIRATORY DISTRESS SYNDROME

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Abstract

The acute respiratory distress syndrome (ARDS) in adults is defined clinically by the presence of bilateral pulmonary infiltrates on chest radiography (refractory hypoxaemia) in the absence of signs indicative of elevated left atrial pressure and in the presence of a known precipitating factor for the syndrome. Both ARDS and its less severe manifestation, acute lung injury (ALI), are responsible for considerable morbidity and mortality amongst the critically ill. This paper discusses the

controversy concerning the defining criteria for ARDS in current use, and the epidemiology of the syndrome. Advances in understanding the pathophysiology of ARDS,¹ particularly through the use of computed tomography and bronchoalveolar lavage,² are described. Treatment for patients with ARDS remains essentially supportive,^{3,4} although the application of specific ventilatory techniques has been shown to improve survival in recent controlled trials. Finally, the long-term survival of patients with ARDS and their quality of life compared with matched controls is discussed.

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Key words: Acute lung injury (ALI), acute respiratory distress syndrome (ARDS), bronchoalveolar lavage, epidemiology of ARDS, long-term survival, pathophysiology of ARDS, quality of life.

Sponsors: None.

Declaration: No conflict of interest declared.

SYMPOSIUM ABSTRACTS

SESSION 3

CHRONIC OBSTRUCTIVE PULMONARY DISEASE: THE PRIMARY/SECONDARY CARE INTERFACE

Chair: Dr I Johnston, General Practitioner, Esk Medical Centre, Musselburgh

INHALED DRUG THERAPY FOR COPD: THE EVIDENCE BASE

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Abstract

Chronic obstructive pulmonary disease (COPD) is a major cause of morbidity and mortality. Pharmacological therapy has relied on modifications to the approach used for asthma and it is clear that the side-effect profile is lower in drugs given by inhalation. However, the relative benefits of this have been uncertain until the last five years when a series of large clinical studies have described significant symptomatic improvements in the face of only modest changes in lung function.

Treatment with inhaled long-acting bronchodilators, whether beta-agonist or anticholinergic, is more effective in improving an individual's health status and reducing exacerbations compared with regular short-acting bronchodilators. These effects are well maintained over one year and can be accompanied by reduced numbers of hospitalisations. Exercise performance improves significantly due to changes in lung volumes rather than in tests of expiratory flow. Inhaled corticosteroids reduce the number of exacerbations and mitigate the decline in health status that occurs with time but do not appear to influence decline in FEV1. Combining a long-acting bronchodilator and inhaled corticosteroid produces larger effects than seen with the inhaled corticosteroid alone, but is qualitatively similar across all the outcomes.

Important clinical benefits are seen with treatment in COPD, provided large randomised control trials are conducted that last long enough for the benefits to emerge (i.e. one year or more). The treatment effect on exacerbations is most obvious in those with an FEV1 below 50% predicted, and inclusion of inhaled corticosteroids in the regime should be restricted to this group at present. Sustained bronchodilatation throughout the day is recommended for all symptomatic patients, irrespective of the degree of lung function impairment.

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Key words: Chronic obstructive pulmonary disease, inhaled corticosteroids, tiotropium

Sponsors: I have received research support from Glaxo SmithKline (GSK), AstraZeneca and Boehringer Ingelheim plc.

Declaration: No conflict of interest declared.

PULMONARY REHABILITATION: WHERE TO NOW?

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Abstract

Pulmonary rehabilitation (PR) is defined as 'a multi-disciplinary programme of care for patients with chronic respiratory impairment that is individually tailored and designed to optimise physical and social performance and autonomy'.¹ There are 900,000 people in the UK suffering from COPD but only a tiny proportion have the opportunity to attend PR. There is good evidence that PR is effective, leading to significant improvements in exercise tolerance and quality of life.^{2,3} The 2001 British Thoracic Society statement on PR provides a standard against which current programmes should be audited, but there remain many unanswered questions.

A review of the literature and the Torbay data were used to answer the following questions: how long do the effects of PR last? What components should be contained in PR? In what setting should PR take place? Is PR cost-effective? And PR: where to now?

The effects of PR have waned in most people by 18 months. Refresher programmes can boost the effects of PR for short periods. Pulmonary rehabilitation should contain exercise training education and psychological input. Pulmonary rehabilitation can be delivered effectively in a variety of settings but most commonly in UK in hospital out-patients. Pulmonary rehabilitation is cost-effective.

We need to make PR more available by opportunistic use of local facilities. The effects may be more prolonged if maintenance programmes are provided in some form. It is important to audit available programmes and use

the BTS standards for quality control. Psychologists have much to offer in terms of patient selection and changing exercise behaviour. There are important opportunities to collaborate with primary care to increase the number of patients who have the chance to undertake PR.

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Key words: COPD, pulmonary rehabilitation.

Sponsors: None.

Declaration: I have accepted hospitality and travel to national and international meetings from all the major pharmaceutical companies that market respiratory products.

TERMINAL CARE IN NON-MALIGNANT, END-STAGE DISEASE – HOW CAN WE IMPROVE IT?

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Abstract

Chronic obstructive pulmonary disease (COPD) is a common disease that is associated with significant morbidity and mortality. Unlike advanced cancer, which has developed considerable resources for patients, end-stage non-malignant respiratory disease has been largely ignored by the health service and professions. A few patients receive intensive medical and nursing care at the end of life with artificial ventilation, but the majority die slowly in hospital wards, at home or in nursing homes. Recent epidemiological and clinical studies are starting to reveal the scale of suffering for patients and their family carers. Palliative care services are also waking up to the needs of non-cancer patients at the end of life, but it is not clear if they are prepared to cope with this additional demand.

Review of literature from UK and US, was conducted especially the Regional Study of Care for the Dying;¹ the

US SUPPORT and 6-city studies;^{2,3} and recent clinical surveys in Doncaster⁴ and Leeds.⁵

Epidemiological studies show that physical symptoms such as pain, dyspnoea, cough, anorexia, emesis and constipation are very common in chronic lung disease and are comparable with those reported by lung cancer patients. Low mood is also found to the same extent as in cancer. Furthermore, quality of life measurement shows that COPD patients suffer as much as lung cancer patients, but because of the more prolonged course of the former, the total time of suffering is greater. There is evidence that communication of terminal disease is less open with COPD patients than with cancer patients. Patients with long-term non-malignant disease are liable to lose mobility and become house-bound with reduced services. Chronic obstructive pulmonary disease patients and carers are less likely to receive terminal care in their homes from district nurses and specialist palliative care nurses.

It is clear that although the overall degree of physical and psychosocial hardship is comparable between cancer and non-malignant lung disease, cancer patients are better cared for. Knowledge of the management of physical symptoms should be easily transferable from cancer to non-cancer. However, myths and fears about the use of analgesic and sedating drugs are prevalent in the minds of public and professionals. Modern synthetic opioids offer advantages over codeine and morphine for pain and breathlessness control, but randomised controlled trials of symptom control in end-stage COPD are few.

It is often assumed that the broader palliative care principles as applied to cancer patients and their carers can be transferred to non-malignant disease. However, there are several barriers to this, including the reluctance of palliative care services themselves to adapt to and embrace non-cancer patients. Similarly, healthcare professionals are often wary of referring to palliative care services such as hospices and hospital teams because of difficulties in judging prognosis. Our studies in Sheffield hospitals have shown that both medical and nursing staff are unlikely to identify COPD patients as having palliative care needs, in spite of their medical documentation.^{6,7}

It may help to use a new approach towards the care of COPD patients and their carers. This approach is supportive care, which is not restricted to the end of life but is determined by physical, psychosocial, information, rehabilitation and existential needs. Supportive care embraces palliative care for the terminal stages, but if offered from the time of diagnosis, more patients may benefit from seamless and holistic care.⁸

SYMPOSIUM ABSTRACTS

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Key words: COPD, palliative care, quality of life, suffering, supportive care, symptoms.

Sponsors: I have received sponsorship from a wide range of pharmaceutical companies in the past for research and consultancy.

Declaration: No conflict of interest.

SESSION 4

THE BUDGET IS UNDERSPENT BY £1M! WHICH SERVICE DESERVES IT?

Chair: Dr S Wright, Consultant in Respiratory Medicine, Falkirk and District Royal Infirmary

SLEEP SERVICES DESERVE IT!

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Abstract

Prioritisation of healthcare is driven by a number of factors, such as value for money, capacity to benefit, compassion and equity of access, to mention a few. However, for most purchasers it is gains in life, or quality of life, and how much that costs that really count. Doctors have often failed to accept that there is a limited budget and have, therefore, been uncomfortable with the idea that a treatment of theirs may simply not be worth its cost – particularly when set against another treatment, in another area, where the cost-effectiveness

is clearly superior. This will be the case even more so when this better value for money area is completely outside their experience. As a chest physician, with a subspecialty interest in sleep apnoea, I am privileged to look after patients with both lung cancer and sleep apnoea. The average age of lung cancer patients is over 70 years, and the median survival of inoperable non-small cell carcinoma is only about five months, even in those fit enough to enter trials. Despite improvements in therapeutic approaches, and large numbers of industry-funded trials showing small extensions in life expectancy (about two to four months maximum), the real outlook for a patient with advanced lung cancer today is hardly any better than it was 20 years ago. This is particularly true for stage 3 and 4 non-small cell carcinoma, where the biggest rise in treatment costs is occurring. Even the improvements in quality of life (about 10% over some of the five months) are small. Therefore, this is a clear indication for more money to be spent on research in this area. However, it is not an indication to spend more money on treatment. At the beginning, I stated that compassion was a factor in health care purchasing, and I accept that for the individual a few extra months is valuable. This should be factored into decision making.

This is in complete contrast to the situation in sleep apnoea. The average age of these patients is 52 and, treated, their life expectancy probably returns to predicted. Untreated, there are a variety of reasons why their quality of life is greatly reduced, and their mortality probably increased. Measures of quality of life in these patients show considerable decrements that return to normal on treatment, giving improvements of 25% or more over the subsequent years.¹ Blood pressure is lowered and the predicted benefit to ten-year cardiovascular risk is substantial.² In addition, there is reasonable evidence that car accident rates fall following treatment,³ due to the resolution of excessive daytime sleepiness – such accidents cost the community enormous sums of money.⁴ Other studies have shown reductions in overall healthcare costs following treatment, which may mean that treating sleep apnoea actually reduces overall health costs.⁵

For those who find Quality Adjusted Life Years (QALYs) a useful way of comparing value for money in health care, there is no contest. Although extremely difficult to estimate, the cost per QALY for chemotherapy for inoperable non-small cell lung cancer is estimated to be anywhere between £5,000 and £50,000 depending on the study and drugs used;⁶ in sleep apnoea it is about £2,500 (even ignoring any improvements in mortality).⁷ Recent data on the epidemiology of sleep apnoea, suggests that, at best, about one in seven such patients have so far been diagnosed and treated.⁸ There are long waiting lists in many areas, and thus there is a clear need for more funding in this area. Cancer has had a high

profile in recent years, and in our area there is no shortage of funding for the areas of clear benefit – surgery and chemotherapy for small-cell carcinoma.

As a chest physician looking after both these categories of patients I have no doubt that any extra money is far better spent on treating a disorder that, at the very least, greatly increases the quality of life of someone with an average subsequent life expectancy of 30 years or more.

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Key words: Value for money, lung cancer, sleep apnoea, extensions in life expectancy, treatment costs, quality of life, car accident rates, excessive daytime sleepiness, overall health costs.

Sponsors: None.

Declaration: No conflict of interest declared.

EDITORIAL NOTE

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