J R Coll Physicians Edinb 2007; **37**:260–263

Respiratory Medicine Symposium

M Murray
Respiratory SpR, Royal Infirmary of Edinburgh, Edinburgh, Scotland

ABSTRACT This year's Respiratory Medicine Symposium encompassed a variety of clinically relevant topics with particular emphasis on current and future management strategies. Commonly encountered clinical scenarios such as the investigation of solitary pulmonary nodules, advising snorers on surgical options and optimising asthma control in both primary and secondary care as well as rarer conditions such as pulmonary arteriovenous malformations were presented. The Robert W Phillip Memorial Lecture focused on the diagnosis of PE.

KEYWORDS Advances, asthma, management, primary care, pulmonary embolism, rheumatoid arthritis

LIST OF ABBREVIATIONS Body mass index (BMI), chest X-Ray (CXR), computed tomography (CT), deep venous thrombosis (DVT), pulmonary embolus (PE), positron emission tomography (PET)

DECLARATION OF INTERESTS No conflict of interests declared.

Published online ***July 2007***

Correspondence to ***M Murray, Department of Respiratory Medicine, Royal Infirmary of Edinburgh, Little France, Edinburgh, Scotland, EH16 4SA***

tel. ***+44 (0)131 536 1000***

fax. ***+44 (0)131 242 1870***

e-mail ***maevemurray@hotmail.com***

CME

SESSION 1
HOW DO I MANAGE...?

Dr M Muers, Consultant Respiratory Physician, Leeds General Infirmary, Professor JA Wilson, Professor of Otolaryngology, Head & Neck Surgery, Freeman Hospital, Newcastle-upon-Tyne, Dr C Shovlin, Senior Lecturer and Honorary Consultant, Respiratory Medicine Unit, Hammersmith Hospital, London.

Three major topics that often present complex management issues were discussed: solitary pulmonary nodules, palatal surgery for snoring, and pulmonary arteriovenous malformations.

Solitary pulmonary nodules are <3 cm diameter lesions usually found incidentally on the CXR and the key is to exclude lung cancer. Contrast enhanced CT scanning is routinely recommended. Low risk lesions should have repeat CT at 6, 12 and 24 months. Intermediate risk lesions should be considered for histological diagnosis. High risk lesions should be discussed at multi-disciplinary team meetings and PET scanning is recommended to assess possible malignancy as well as exclude local and distant metastasis. Localised cases should be referred for surgical resection, without histology, but patients cautioned that not all lesions will be neoplastic.

The role of palatal surgery for snoring was reviewed. Examination should involve calculation of BMI, ease of visualisation of the posterior pharyngeal wall, (Mallampati or Freidman scores), assessment of tonsil size and nasal obstruction. Cephalometry, although currently predominantly a research tool, may be useful in identifying those who are likely to benefit from palatal surgery.[1] Lifestyle issues should be addressed, but surgical treatment options include soft palate coblation ('spot welding' of the palate to shorten and stiffen it), tonsillectomy ± uvulectomy or uvulopalatopharyngoplasty. Such procedures can be effective[2,3] but may have significant morbidity, to the extent that in a Swiss study, 27% of patients said they would not undergo uvulopalatopharyngoplasty again.[4]

Pulmonary arteriovenous malformations affect 1 in 10,000–15,000 people in the UK. Despite severe hypoxaemia, the majority are asymptomatic. Investigations should include CXR, erect and supine oxygen saturations, ^{99m}Tc perfusion scanning (to quantitate shunt size) and CT chest scan. Data from the Hammersmith Hereditary Haemorrhagic Telangiectasia Team suggests that, if left untreated, 1 in 3 will develop a brain abscess by age 70, and almost 50% will have had an ischaemic stroke by age 65–70. There are no known features of pulmonary arteriovenous malformations to predict such sequalae. All patients should receive embolisation[5] and antibiotic prophylaxis for dental or surgical procedures. Transplantation is not advised and confers a poor prognosis.

Screening and counselling for family members is recommended as 90% have hereditary haemorrhagic telangiectasia.[6]

SESSION 2
PULMONARY EMBOLISM

Professor G Lowe, Professor of Vascular Medicine, University of Glasgow, Professor A Perrier, Head, Service of General Internal Medicine, Hôpitaux Universitaires de Geneva.

The role of hereditary risk factors in venous thromboembolism was discussed, and Professor Perrier delivered the Robert W Philip Memorial Lecture on the diagnosis of PE.

Pulmonary embolus accounts for approximately 25,000 hospital admissions annually and has a 10% mortality rate. Approximately 5% of the population have a hereditary (autosomal dominant) thrombophilia. The most common genetic mutations cause Activated Protein C Resistance (Factor V Leiden and Factor II mutations)[7–9] and, less frequently, a deficiency of coagulation inhibitors (antithrombin III, Protein C and S).

For all thrombophilias, actual events are determined by interaction with environmental risk factors.[10, 11] Routine screening of the general population is not recommended.[12] However, in those who have had a DVT or PE, the less common hereditary thrombophilias increase the risk of a recurrent event.[13–15] New British haematological guidelines on who should be tested for hereditary thrombophilias are awaited.

Investigation of suspected PE should include assessment of the clinical probability using validated prediction rules such as the Wells criteria or the Revised Geneva Score.[16] D-dimer levels are commonly measured and its clinical utility is to safely exclude a diagnosis of PE with D-dimers in the normal range.[17, 18]

In multislice CT scans, accuracy studies have been slightly disappointing with 83% sensitivity.[19] However, combining CT scans with clinical probability scores, patients with a negative CT result and a low or indeterminate clinical probability have an extremely low risk of PE.[20, 21]

Professor Perrier concluded that the diagnosis of PE should be a combination of clinical assessment and select, validated tests, determined by local availability.

SESSION 3
LINKS BETWEEN RHEUMATOID DISEASE AND THE LUNG

Dr N Foley, Consultant Respiratory Physician, Royal United Hospital, Bath, Dr B Griffiths, Consultant Rheumatologist, Freeman Hospital, Newcastle-upon-Tyne.

Pulmonary manifestations of Rheumatoid Arthritis and the pulmonary complications of disease modifying anti rheumatic drugs were explored.

A broad spectrum of pulmonary manifestations may be present in up to 58% of rheumatoid arthritis patients.[22] Interstitial lung disease has a radiological prevalence of up to 44%,[22] mirrors usual interstitial pneumonia histopathologically but has a significantly better prognosis than usual interstitial pneumonia. Obliterative bronchiolitis is rare and rapidly progressive. The prognosis is poor since few effective therapies are currently available. Organising pneumonia is infrequent, but usually steroid responsive with a good prognosis.

Pleural disease and lung nodules are common. The latter are largely asymptomatic, but radiologically indistinguishable from cancer, often resulting in surgical excision.

Bronchiectasis is also associated with rheumatoid arthritis but may predate joint symptoms by up to four years.

Methotrexate is a well tolerated potent anti-inflammatory, but has a 1% prevalence of pneumonitis – this is seen only rarely with other disease modifying anti rheumatic drugs such as anti-TNFα therapy and leflunomide.[23] Pre-treatment investigations should include CXR and detailed pulmonary function tests. Pneumonitis typically occurs within six months of commencing therapy, and is thought to be a hypersensitivity reaction. A differential diagnosis should always be considered, especially progressive interstitial lung disease or atypical infection. Mortality rates of 13% are reported, but most patients recover fully following drug withdrawal, and, if necessary, steroid therapy.[24]

SESSION 4
ASTHMA: THE PRIMARY–SECONDARY CARE INTERFACE

Dr G Douglas, Consultant Physician, Chest Clinic, Aberdeen Royal Infirmary, Dr H Pinnock, Research Fellow in Primary Care, and Principal in General Practice, Whitstable Medical Practice, Kent, Professor N Thomson, Professor of Respiratory Medicine, Division of Immunology, Infection & Inflammation, Gartnavel General Hospital, Glasgow.

This session was devoted to current and future strategies for asthma management.

Asthma is a common, chronic disease with significant morbidity and mortality. It is often poorly controlled with false patient belief,[25] low patient expectation[26] and disparity between patients' and doctors' approaches to disease.[27] Personalised self management plans may be an answer to effective disease control. Action plans based on either symptoms or peak expiratory flow rate monitoring allows patient autonomy and better perception of disease stability. Such plans can achieve a significant improvement in symptoms and may reduce future hospital admission rates.[28]

Growth of evidence-based guidelines, a recognition of inequalities in delivery of care and political will have prompted the development of Quality and Outcomes Framework within the new General Medical Services primary care contract.[29] The speaker gave a detailed

CME

explanation of these initiatives emphasising their role in asthma management. Outcomes from the past two years were presented and an overview of the anticipated future consequences was discussed, including the administrative, financial and clinical implications.[30]

Professor N Thomson presented key studies supporting the use of non-invasive biomarkers (induced sputum cell counts and exhaled nitric oxide) in assessment of severe asthma and monitoring airways inflammation.[31–34] Such techniques may in future be used to assess therapeutic response to existing and new therapies.[35] An overview of potential new therapies was given including anti-IgE therapy,[36] anti-TNFα therapy[37] and the new non medical therapy thermoplasty.[38] This involves direct application of radiofrequency energy to the airway wall to reduce the amount of smooth muscle. These therapies may be useful in severe asthma but further studies are needed.[39]

CME

REFERENCES

1 Young JW, McDonald JP. An investigation into the relationship between the severity of obstructive sleep apnoea/hypopnoea syndrome and the vertical position of the hyoid bone. *Surgeon* 2004; **2(3):**141–51.

2 Hessel NS, de Vries N. Results of uvulopalatopharyngoplasty after diagnostic work up with polysomnography and sleep endoscopy: a report of 136 snoring patients. *Eur Arch Otorhinolaryngol* 2003; **260(2):**91–5.

3 Prasad KR, Premraj K, Kent SE, Reddy KT. Surgery for snoring. Are partners satisfied in the long run? *Clin Otolaryngol Allied Sci* 2003; **28(6):**497–502.

4 Roosli C, Schneider S, Hausler R. Long-term results and complications following uvulopalatopharyngoplasty in 116 consecutive patients. *Eur Arch Otorhinolaryngol* 2006; **263(8):**754–8.

5 Remy J, Remy-Jardin M, Wattinne L, Deffotaines C. Pulmonary arteriovenous malformations: evaluation with CT of the chest before and after treatment. *Radiology* 1992; **182(3):**809–16.

6 Begbie ME, Wallace GM, Shovlin CL. Hereditary haemorrhagic telangiectasia (Osler–Weber–Rendu syndrome): a view from the 21st century. *Postgrad Med J* 2003; **79(927):**18–24.

7 Dahlback B, Carlsson M, Svensson PJ. Familial thrombophilia due to a previously unrecognized mechanism characterized by poor anticoagulant response to activated protein C. *Proc Natl Acad Sci USA* 1993; **90(3):**1004–8.

8 Bertina RM, Reitsma PH, Rosendaal FR, Vandenbroucke JP. Resistance to activated protein C and factor V Leiden as risk factors for venous thrombosis. *Thromb Haemost* 1995; **74(1):**449–53.

9 Poort SR, Landolfi R, Bertina RM. Compound heterozygosity for two novel missense mutations in the prothrombin gene in a patient with a severe bleeding tendency. *Thromb Haemost* 1997; **77(4):**610–5.

10 Vandenbroucke JP, Koster T, Briet E, Reitsma PH, Bertina RM, Rosendaal FR. Increased risk of venous thrombosis in oral contraceptive users who are carriers of Factor V Leiden mutation. *Lancet* 1994; **344(8935):**1453–7.

11 Rosendaal FR, Vessey M, Rumley A *et al.* Hormonal replacement therapy, prothrombotic mutations and the risk of venous thrombosis. *Br J Haematol* 2002; **116(4):**851–4.

12 Wu O, Robertson L, Langhorne P *et al.* Oral contraceptives, hormone replacement therapy, thrombophilias and venous thromboembolism: a systematic review. The Thrombosis: Risk Economic Assessment of Thrombophilia Screening (TREATS) study. *Thromb Haemost* 2005; **94(1):**17–25.

13 Baglin T, Luddington R, Brown K, Baglin C. Incidence of recurrent venous thromboembolism in relation to clinical and thrombophilic risk factors: prospective cohort study. *Lancet* 2003; **362(9383):**523–6.

14 Vossen CY, Conard J, Fontcuberta J *et al.* Risk of a first venous thrombotic event in carriers of a familial thrombophilic defect. The European Prospective Cohort on Thrombophilia (EPCOT). *J Thromb Haemost* 2005; **3(3):**459–64.

15 Vossen CY, Conrad J, Fontcuberta J *et al.* Familial thrombophila and lifetime risk of venous thrombosis. *J Thromb Haemost* 2004; **2(9):**1526–32.

16 Musset D, Parent F, Meyer G *et al.* Diagnostic strategy for patients with suspected pulmonary embolism: a prospective multicentre outcome study. *Lancet* 2002; **360(9349):**1914–20.

17 Wells PS, Anderson DR, Rodger M *et al.* Derivation of a simple clinical model to categorize patients probability of pulmonary embolism: increasing the models utility with the SimpliRED dimmer. *Thromb Haemost* 2000; **83(3):**416–20.

18 Kruip MJ, Slob MJ, Schijen JH, van der Heul C, Buller HR. Use of a clinical decision rule in combination with D-dimer concentrations in the diagnostic work up of patients with suspected pulmonary embolism: a prospective management study. *Arch Intern Med* 2002; **162(14):**1631–5.

19 Stein PD, Fowler SE, Goodman LR *et al.* Multidetector computed tomography for acute pulmonary embolism. *N Engl J Med* 2006; **354(22):**2317–27.

20 Perrier A, Roy PM, Sanchez O *et al.* Multidetector-row computed tomography in suspected pulmonary embolism. *N Eng J Med* 2005; **352(17):**1760–8.

21 van Belle A, Buller HR, Huisman MV *et al.* Effectiveness of managing suspected pulmonary embolism using an algorithim combining clinical probability, D-dimer testing and computed tomography. *JAMA* 2006; **295(2):**172–9.

22 Gaby E, Tarala R, Will R *et al.* Interstitial lung disease in recent onset rheumatoid arthritis. *Am J Resp Crit Care Med* 1997; **156(2 Pt 1):**528–35.

23 Villeneuve E, St-Pierre A, Haraoui B. Intersitial pneumonitis associated with infliximad therapy. *J Rheumatol* 2006; **33(6):**1189–93.

24 Imokawa S, Colby TV, Leslie KO, Helmers RA. Methotrexate pneumonitis: review of the literature and histopathological findings in nine patients. *Eur Resp J* 2000; **15(2):**373–81.

25 Halm EA, Mora P, Leventhal H. No symptoms, no asthma: the acute episodic disease belief is associated with poor self management among inner-city adults with persistent asthma. *Chest* 2006; **129(3):**573–80

26 Haughney J, Barnes G, Partridge M, Cleland J. The Living & Breathing Study: a study of patients' views of asthma and treatment. *Prim Care Resprr J* 2004; **13(1):**28–35

27 Caress AL, Beaver K, Luker K, Campbell M, Woodcock A. Invovlement with treatment decisions: what do adults with asthma want and what do they get? Results of a cross sectional survey. *Thorax* 2005; **60(3):**199–205.

28 Osman LM, Calder C, Godden DJ *et al.* A randomized trial of self management planning for adult patients admitted to hospital with acute asthma. *Thorax* 2002; **57(10):**869–74.

29 Shekelle P. New contract for general practitioners. *BMJ* 2003; **326(7387):**457–8.

30 Roland M. Linking physicians' pay to the quality of care – a major experiment in the United Kingdom. *N Engl J Med* 2004; **351(14):**1448–54.

31 Jatakanon A, Lim S, Barnes PJ. Changes in sputum eosinophils predict loss of asthma control. *Am J Resp Crit Care Med* 2000; **161(1):**64–72.

32 Leuppi JD, Salome CM, Jenkins CR *et al.* Predictive markers of

asthma exacerbation during stepwise dose reduction of inhaled corticosteroids. *Am J Resp Crit Care Med* 2001; **163(2):**406–12.
33 Green RH, Brightling CE, McKenna S *et al.* Asthma exacerbations and sputum eosinophil counts: a randomized controlled trial. *Lancet* 2002; **360(9347):**1715–21.
34 Jayaram L, Pizzichini MM, Cook RJ *et al.* Determining asthma treatment by monitoring sputum cell counts: effect in acute exacerbations. *Eur Resp J* 2006; **27(3):**483–94.
35 Taylor DR, Pijenburg MW, Smith AD, De Jongste JC. Exhaled nitric oxide measurements: clinical application and interpretation. *Thorax* 2006; **61(9):**817–27.
36 Humbert M, Beasley R, Ayres J *et al.* Benefits of omalizumab as add-on therapy in patients with severe persistent asthma who are inadequately controlled despite best available therapy: INNOVATE. *Allergy* 2005; **60(3):**309–16.
37 Howarth PH, Babu KS, Arshad HS *et al.* Tumour necrosis factor (TNFalpha) as a novel therapeutic target in symptomatic corticosteroid dependent asthma. *Thorax* 2005; **60(12):**1012–8.
38 Cox G, Miller JD, McWilliams A, Fitzgerald JM, Lam S. Bronchial thermoplasty for asthma. *Am J Resp Crit Care Med* 2006; **173(9):**965–9.
39 Cox PG, Miller J, Mitzner W, Leff AR. Radiofrequency ablation of airway smooth muscle for sustained treatment of asthma: preliminary investigations. *Eur Resp J* 2004; **24(4):**659–63.

Forthcoming symposia for 2007/2008

RCPE
Royal College of Physicians of Edinburgh

All symposia are held at the Royal College of Physicians of Edinburgh unless otherwise stated. Further symposia may be added at a later date.

2007	
• Improving End of Life Care in the 21st Century	26 October
• Gastroenterology	1 November
• Preston symposium	7 November
• Dundee symposium: moving points in medicine	8 November
• Changing Professional Practice	14 November
• E-Health	23 November
• Scottish Paediatric Society St Andrew's Day Symposium (in association with RCPE, RCPCH, RCPSG, SACCH)	23 November
• 47th St Andrew's Day Festival Symposium	6–7 December
2008	
• Respiratory Medicine	1 February
• Haematology	29 February
• Geriatric Medicine	29 May
• Infectious Diseases	18 June
Also coming up in Spring/Summer 2008:	
• Treating patients with cancer: individualising care	Date to be confirmed

Programme details available at: *www.rcpe.ac.uk/education/events/index.php*
or contact the **Symposium Co-ordinator**, **Tel:** 0131 225 7324 **Email:** e.strawn@rcpe.ac.uk

CME